



PoultryNL

Serving the poultry planet

EDITION 2022

'Searching for the balance'

Feeding on the cutting edge

Two companies, one team

'Look beyond your own part'

Poultry farming in Burkina Faso

'An investment in knowledge is never lost'

POULTRY TALK

Don't ruffle the feathers

People make the poultry world work

+ Columns, titbits & recipes



More information?

If you are interested in becoming a member of Dutch Poultry Centre or if you have a question regarding Dutch Poultry Centre, please do not hesitate to contact our relations manager Jan Hulzebosch: +31 (0)6 27 44 70 01
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Dutch Poultry Centre

Are you active in the poultry sector and looking for innovative solutions? Do you want to take advantage of the superior knowledge of the Dutch companies in the sector? Do you want to use state-of-the-art technology and share knowledge on a high level? In short, do you want to find out more about the suppliers in the poultry sector with which you want to do business?

If so, we're pleased to meet you. We're the Dutch Poultry Centre. Over 100 partners are internationally oriented companies of excellent repute. Together they have made the Netherlands into the leading poultry country that it is today.

For more and detailed information visit: dutchpoultrycentre.nl

Serving the poultry planet

PoultryNL is a magazine of Dutch Poultry Centre. All articles are based on contributions from DPC Preferred Partners and interviews conducted by journalists with customers or employees of DPC Preferred Partners.

Production: Roodbont Publishers B.V.



Translation and text editing: AgroLingua B.V.



Graphic design: Barry Hage
Cover photo: Natalia Bostan

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Preface

Dutch Poultry Centre represents suppliers of products and services in poultry and egg production. It unites over one hundred partners in the poultry sector in the Netherlands. Together, these preferred partners have written centuries of history in poultry production, on a global scale. That's typically what the Dutch do. To travel the world and to offer technologies wherever they make the difference. In any industry. And that is why we will continue to do so for many years ahead.

In this magazine we show how many of our partner companies are making an impact on customers and the experiences of employees. We would like to show you what we do and who we are, and not just what we are.

The attractive layout conveys the warmth of the DPC family. The magazine contains a lot of information, but all easy reading. You are invited to browse through it and read about stories from all over the world. The clustered contact information in each section will help you find Dutch partners for your projects.

'Serving the poultry planet' is the mission of Dutch Poultry Centre. As a non-commercial organisation we inform you about solutions for the most animal-friendly and eco-friendly poultry production, based on consumer wishes and introduction of the newest and most efficient technology.

I hope Dutch Poultry Centre can be your portal to a new world of poultry production.

Sincerely yours,

Jan Wolleswinkel

chairman Dutch Poultry Centre



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The right genetics

You might have heard the question about which came first, the chicken or the egg? But whether it is commercial day-old chicks, pullets, eggs sold in supermarkets, or even eggs used in the manufacture of vaccinations, the whole process starts with the breeding companies.

& the right people

Four times a week, Joice & Hill processes a set of up to 300,000 eggs that hatch 21 days later, meaning that at any one time at the company's hatchery in Peterborough there can be over 2 million hatching eggs in incubation! But it is not just about sheer quantity. 'We sell on three main factors,' explains Nick Bailey, the company's Managing Director. 'The first is the strength of the breeding program behind the breeds we sell. From a genetic perspective, we offer strong, robust products that have the genetic potential to lay more first-quality eggs compared to any other chicken breed available in the UK market. The chicken breeds of Hendrix Genetics have been clearly selected for persistency, allowing today's egg producers to keep their flocks longer with every new generation that arrives at the farm. But it is also no secret that you can only get the best genetic potential out of the flock when the quality is good. That's the second factor we are focusing on: good quality, healthy, viable, well-vaccinated chicks. The quality of laying hens that the egg producer gets is dependent on the quality of the chicks that the rearing farm gets from the hatchery. Finally, you need good management on the farms. That's why our sales representatives have very technical backgrounds.'

Good staff is essential

'Our staff is there to support rearing companies and egg producers with flock management, technical and nutritional advice. It really is of advantage to us that we can always ask for extra support from the head office. By sharing best practices and knowledge from overseas countries they can offer new insights and management practices.'

'So people are essential, throughout our

entire organisation, from parent stock farm to hatchery, from back-office to technical service. One of the biggest challenges that we are facing today is finding good quality people at every level of the company.

There is a huge shortage of good livestock-oriented people in the UK, especially since Brexit. As the result of COVID-19, we're starting to see interest from people wanting to be involved in food production and agriculture,' Nick Bailey points out. 'To be honest, I think the sector has loads to offer, it's a great career, you're in the countryside, working with people and livestock in an innovative and dynamic sector that brings a superfood to the table!'

White egg breeds are more sustainable

Besides having the right staff, it is key to have the right breeds to meet the needs of the market. 'There are risks in our business, but we won't risk our clients' success by sending them chicks that do not fulfil our high quality standards or their demands. But as producing and hatching eggs is more expensive compared to producing a regular table egg, we must target 95% hatching egg utilisation.' >>>

Nick Bailey, Managing Director of Joice & Hill: 'We need to play a role in training a new generation of livestock workers and farmers.'





To achieve this level of success, Joice & Hill needs to know its customers and market well. 'The parents we're placing this month will still be in production towards the autumn of next year. **We have to know now what we think we're going to sell next year.**'

This means Joice & Hill isn't just watching trends, they are anticipating them. Despite the fact that the UK is a traditional brown egg market, Joice & Hill is investing in the Dekalb White, in the belief that the Dekalb White has to offer important advantages to the evolving UK egg sector. 'White breeds are still more efficient, and some like the Dekalb White are also very suited for cage-free egg production. They clearly show better livability, egg laying persistency, lower daily feed consumption and better feather cover compared to any brown breed available in the UK. So, they offer some real benefits in terms of sustainable egg production, especially as the carbon footprint of food becomes more important. With White breeds, you get more eggs for less feed and the product is not nutritionally different!'

The future of Joice & Hill

When asking Nick Bailey about the future of Joice & Hill, his mind immediately goes to the companies' responsibilities. 'We



The sector has loads to offer

need to conduct our business and look after our animals in a way that meets the expectations of consumers and society. We need to supply the market with the right genetics and the right technical support. We need to feed back the needs of our market to keep the Hendrix Genetics R&D department aware of how their products are performing and what improvements are needed. But, most of all, we need to play a role in training a new generation of livestock workers and farmers.' <<<



Oven-baked chicken Caprese



Italy



30 minutes

INGREDIENTS

(for 4 persons)

2 chicken fillets
200 g of diced tomatoes
1.5 ball of mozzarella
6 cherry tomatoes
1 clove of garlic
1 few sprigs of fresh oregano
1 handful fresh basil
1 handful of grated parmesan cheese
pepper, salt, oil



kiprecepten.nl

For more chicken recipes:
www.kiprecepten.nl

Preparation:

1. Preheat the oven to 220°C.
2. Rub the chicken fillets with oil and season with salt and pepper. Place them in an oven dish.
3. Finely chop the oregano and stir it into the diced tomatoes. Crush the garlic and add it. Add pepper and a generous pinch of salt to taste. Stir everything together well.
4. Spread the tomato sauce over the chicken fillets. Bake in the oven for 20 minutes.
5. Then lower the oven temperature to 200°C and remove the baking dish from the oven. Spread the mozzarella on top, followed by the parmesan cheese. Halve the cherry tomatoes and place them on top. Bake for 10-15 minutes, until the mozzarella is well melted and just gets a golden layer.
6. Remove the baking dish from the oven and garnish with fresh basil. Serve immediately.

The chicken Caprese from the oven is now ready, enjoy!



Kasturi Poultry Farms builds broiler hatchery for

1,000,000 chicks per week

Kasturi Poultry Farms India (KPF) has built a new, single-stage integrated hatchery in Dharapuram, Tamil Nadu. The facility, which is fully operational since April 2022, has a capacity of one million day-old broiler chicks per week.

KPF's ambition is to play a major role in the future growth of Tamil Nadu's poultry industry. Based in Coimbatore, Tamil Nadu, KPF is an associate company of Venkateshwara Hatcheries Group (Venky's) and was founded in 2010. Its plans are taking shape today. The company has recently made significant investments to expand both its integration facilities – to supply hatching eggs and day-old chicks throughout India and by developing its poultry feed business at KPF's plant in Dharapuram. The state-of-the-art hatchery will also feature a fully integrated

climate control system and complete hatchery automation – making it one of the most modern facilities in Southern India. Royal Pas Reform is responsible for the development of this SmartPro™ hatchery.

Delighted

Pradeep Kumar, Director of Kasturi Poultry Farms says: 'I have been working with Pas Reform incubation equipment for more than 20 years and we have developed a strong relationship over this time. When we came to make our investment in these state-of-the-art facilities, it was a logical step for us to go for a single-stage hatchery with the world's leading single-stage incubation and integrated incubation project specialist. Choosing Royal Pas Reform was therefore the logical choice for us.'

Bouke Hamminga, Royal Pas Reform Director International Sales & Business Development comments: 'We are delighted that a company as important as Kasturi Poultry Farms has chosen to work with us. I am sure that, as an integrated hatchery solutions supplier, we can prove to be a leading partner with KPF across the entire Indian subcontinent.' <<<



It was a logical step for us



The first steps in the construction of the hatchery. The third person from the left is Bouke Hamminga.



**'We have
a strong
relationship
after working
together for
over 20 years'**



Partners in growth: Pradeep Kumar, Director of Kasturi Poultry Farms (left) and Venkatesh Venkitakrishnan, Royal Pas Reform country manager India (right).

After many years of trial and error, a successful system is now available

Early feeding system for turkey poults finally a reality

The successful introduction of early feeding systems in the broiler industry raised the question whether turkey growers could also take advantage of it. After many years of trial and error, a successful system is now finally available with huge improvements in turkey poult performance.

US company Life-Science Innovations from Willmar, Minnesota, has been working on early feeding and water for poults for over 5 years. The company has over 70 years' experience in the different aspects of the turkey industry with extensive experience in the hatchery industry, operating the largest turkey hatchery and poult distribution in the world at one time. Since the hatch window in turkeys is much wider than in broilers, it is more difficult to give poults a perfect start after hatch. Therefore, early feeding and watering could provide opportunities to overcome the many early growth issues in turkey production. After trying various options, Life-Science Innovations had to admit that significant improvements could not be achieved with traditional techniques.

Unknown world

They approached HatchTech to develop a system for turkeys like they had done for broilers. 'Initially, we were not ready to enter the turkey world because we wanted to first complete

our HatchCare system for broilers before making something for turkeys,' HatchTech commercial director Joost ter Heerdt explains. 'Besides, at that moment we knew a lot about chickens but little about turkeys, which made us reluctant to step into this unknown world.'

By the end of 2019, Life-Science Innovations and HatchTech got together and started discussing how they could collaborate and create value for the turkey industry. Through many trials and extensive adjustments, because a turkey is not just a big chicken, they managed to make a working early feeding system for turkeys, based on HatchCare.



A turkey is not just a big chicken





Joost ter Heerdt (l) and Peter Gruhl (r) proudly showing the HatchCare basket.

Huge improvements

A turkey specialist for more than 30 years, Peter Gruhl was involved in the development process for an early feeding system from the start. Over the years, he often saw producers struggling with poor liveability and young poult performance figures. He was jealous of how the broiler industry solved this issue. 'We did a lot of testing with early feeding and saw a huge improvement in performance and drop in poult mortality', Peter says. 'I got so excited about the results that I did not have to think twice when I was asked to become sales director at Life-Science Innovations with a special focus on HatchTech hatchery equipment for turkeys. As the HatchCare system for turkeys rapidly came closer to market readiness, I got more and more energised when telling turkey growers in the US, Canada and even Europe all about the unbelievable improvements in poult welfare and performance.

Traditionally, turkey poulters undergo a lot of handling between hatch and dispatch, which causes a lot of stress and welfare issues resulting in high mortality rates. When using HatchCare, we experienced a significant drop in mortality, improved welfare, better bodyweight, and better feed conversion. Especially the latter two figures were that good during our trials that we decided not to release these figures just yet. We need more results before we do. But like in

chickens, early feeding supports the development of the intestinal tract and will contribute to better health.'

Peter therefore strongly states: 'After more than 15 years of a sort of status quo in turkey management developments, **the relatively conservative turkey industry will embrace the new feeding system, maybe even more so than the broiler industry.**'

New company

Life-Science Innovations and HatchTech strongly believe in the future of the HatchCare system for turkeys and created a new distribution company, called Next Nest (nextnesthatching.com), to present this turkey technology to the turkey industry. 'I have been asked to help customers fulfil the potential of this exciting and profitable innovation in the turkey production chain from the hatchery through live production and into the plant.' <<<

*I got so
excited about
the results*





Chickens & Art

Carl Jutz (1838-1916)

*A rooster and chickens
near beehives*

Oil on canvas 43 x 58 cm,
signed lower right

Collection Simonis &
Buunk Art Dealers,
the Netherlands

www.simonis-buunk.nl

This painting, *A rooster and chickens near beehives*, was painted by Carl Jutz. He was born in Windschläg near Offenburg, Germany, in 1838. After his training and many studies of nature, he became an expressive painter of pets, mostly poultry. In 1853 Jutz joined the studio of animal painter A. Knip in Baden-Baden. After this Carl continued his training auto-didactically. To improve his animal painting Carl Jutz kept several varieties of poultry in his backyard. He also developed special poultry housing so he could carefully study each bird individually.

Interested?

This wonderful painting can be yours for € 37,500!

SHOPPING



Take your work home! A nice way to do this is to bring poultry into your kitchen.

Set of 3 tea towels.
By 'Farmers Kitchen'.
Available via
www.cooksmart.nl



Porcelain egg
storage tray, to save
your eggs in a nice
decorative way! Available via
www.williamsonsfactoryshop.co.uk



Teapot with chickens
by 'Farmers Kitchen'.
Available via
www.cooksmart.nl



A BIT OF HISTORY

Shipping box with
chicks, 1956. The
round edge prevents
chicks from being
pressed into the
corners.



117

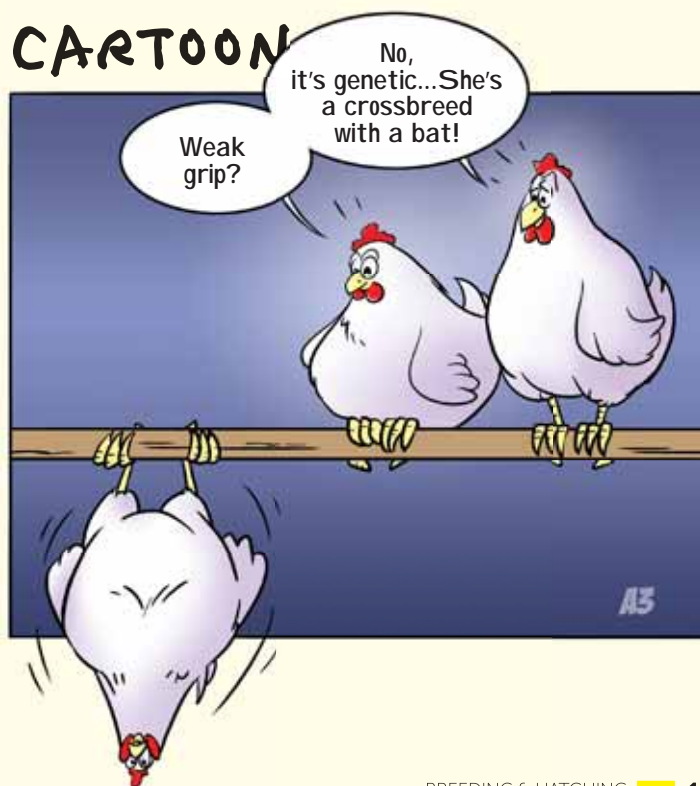
*'The secret of getting old?
Avoid men and eat eggs!'*



Emma Morano was
the oldest living
person in Europe. She
died on April 15th,
2017 at the age of
117 years and 137
days! Emma spent
years following the
advice that a doctor

once gave her 'eat three raw eggs every day'.
She must have eaten about 100,000 raw eggs
during her lifetime! Emma lived alone ever
since her first marriage came to an end in 1938.
In her opinion, both of those factors helped her
to reach such a grand old age.

CARTOON



Two young Dutch managers in Germany

'Life is what happens to you while you're busy making other plans' is a famous quote. This certainly applies to two young Dutch professionals in the poultry world. Tom Groot Koerkamp (27) and Siemen de Jong (26) run the Optibrut hatchery just across the border in Germany, in Nordhorn.

Tom Groot Koerkamp explains: 'We finished our bachelor's degree in 2017. I studied Business Administration in Zwolle and Siemen studied Food Technology in Den Bosch. We were both looking for a temporary job before starting our master's degree. The Optibrut hatchery was being constructed at that time and this provided us with a nice job opportunity.' So, at the age of 23, they started working in the construction but stayed on as hatchery managers. Optibrut started off hatching 800,000 broiler chicks per week and are now at a level of 1.2 million. Tom:

'Roughly 40% for Germany and 60% for the Netherlands.'

Planning is key

The tasks between the two are clearly divided. Tom is responsible for planning and personnel and Siemen for the hatchery processes. Tom plans the operations in a way that ensures optimal results for their customers and Siemen gives substance to this planning. 'My challenge is to get this spot on and produce high quality chicks', says Siemen. 'That is his famous *fingerspitzengefühl*', Tom adds. Siemen about their close cooperation: 'I've known Tom since secondary school, so we are very much attuned to each other.'

Isn't it strange that someone with a background in food technology is managing a hatchery? 'No, it all has to do with process technology. The basics are very similar.' Nowadays, hatchery processes are highly automated. 'The days that a hatchery manager would change the settings according to the weather outside are long gone. I have a dashboard with all the data and video feeds, but still I often walk through the hatchery to keep a real feel for the process', Siemen explains.



The opening of the Optibrut hatchery in 2017.
PHOTO: TOM SCHOTMAN, AGRIO



Candling line of Innovatec, including the CleanChick system.
PHOTO: TOM SCHOTMAN, AGRIO



**We are
very much
attuned to
each other**

Complete system

Siemen: 'Often you see that a hatchery expands or modernises and they fit a setter or other components on the existing machinery. As a result, they end up with systems that are not 100% compatible with each other. We had the luxury of setting up everything with just two suppliers: HatchTech for anything related to incubation and Innovatec for all the processes around it: egg transport, egg transfer, live embryo detection, chick processing, etc.'

Multicultural

'We are a multicultural company. Within Optibrut, we have many different nationalities: German, Syrian, Polish, Ukrainian, Romanian, Moldovan, and so on.' The language of communication is German. 'We didn't master this very well at first, but you learn quickly by doing

it', Siemen explains. 'The Germans truly appreciate it when you try to communicate in German. Even if it is not perfect.'

Good click from the start

We use Innovatec's CleanChick system. The clear eggs are detected with light and the live embryos by the heartbeat system. The eggs with live embryos are taken out and put in the hatcher trays that are subsequently filled up to get exactly the same number of eggs in each tray. 'In the beginning, we experienced some challenges with this, but now it works perfectly and we transfer 50,000 to 60,000 eggs per hour with this system', Siemen says. 'And if there is a problem: one phone call and they are here in no time to solve it. The Innovatec project manager we worked with is about our age, so we had a good click from the start.' <<<

Siemen de Jong
(left) and Tom Groot
Koerkamp (right).



Bolidt Synthetic Products & Systems

No one knows better than Bolidt that hygiene is a matter of life or death within the poultry industry. Also, or perhaps especially, when it comes to floor systems. Therefore, Bolidt meets, with innovative systems, materials and solutions for industrial floors, the requirements of businesses, suppliers, consultants and technicians in the poultry industry.

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Haanstra bv

Haanstra

With more than seventy years' experience of hatching eggs and day-old chicks, Haanstra BV in Zuidwolde is a specialist and reliable partner for poultry farmers, hatcheries and exporters. It is our ambition to occupy an independent position in the industry. We make a connection between supply and demand, providing a service in the process of hatching eggs, always acting in the best interests of our customers.

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HatchTech Incubation Technology

HatchTech is a leading food technology company, which enables poultry companies worldwide to maximise the genetic potential of their birds. Drawing on our unrivalled expertise in early-stage chicks, we create research-based products for incubation, chick transportation and brooding, and deliver and service our customers' projects worldwide. Headquartered in the Netherlands, and with offices in China and Ukraine, HatchTech supports customers in over 40 countries.

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info@hatchtech.com
www.hatchtech.com



Heering

Heering

Heering is one of the world's leading manufacturers of transport systems for day-old chicks. Ever since 1865 the company has been a true pioneer in the creation and installation of transport climate solutions. Driven by quality improvement, Heering works closely with leading hatcheries on biological and technical research. Heering's perfect understanding of all aspects of poultry production offers its clients peace of mind for all their transports.

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Hendrix Genetics

Hendrix Genetics is a multi-species animal breeding and genetics company. The company has genetic improvement programs for layers, turkeys, swine, traditional poultry, salmon, trout and shrimp.

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Innovatec Hatchery Automation

Founded in 1991 Innovatec is a leading company specialised in innovative hatchery automation. Driven by innovation and committed to quality and service Innovatec supplies product lines that help hatcheries realise their full potential in order to deliver high quality and vital day-old-chicks.

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innovatec@innovatec.com
www.innovatec.com



Pluriton

Pluriton is specialised in the export of hatching eggs and day-old chicks of laying and broiler breeds. The shipments that leave Pluriton's branches in the Netherlands, Belgium, or its partners in other European countries, follow the most efficient mode of transport. Thereby customers worldwide receive their day-old chicks in the optimal condition. Timely, flexible and qualitative delivery are core values for Pluriton.

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sales@pluriton.com
www.pluriton.com



Royal Pas Reform

Royal Pas Reform is the world's only single-source supplier of smart, integrated and sustainable hatchery solutions. The company is one of the largest producers of incubators in the world and operates in over 100 countries. Pas Reform celebrated its centenary in 2019 and received the designation 'Royal'. Since its foundation, Royal Pas Reform has been at the forefront of developing smart, integrated and sustainable hatchery solutions.

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Ter Heerdt Kuikens en Hennen

Ter Heerdt Hatchery produces rearing hens and day-old chicks. In 1930, Grandfather Ter Heerdt laid the foundation for this successful family business with his small-scale farm. The generations to follow concentrated their know-how and skills on breeding and rearing hens. Since then Ter Heerdt has developed into one of the leading players in the sector, with a market share of 40% in the Netherlands alone. Today the company produces 14 million chicks per year.

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www.terheerdt.com



Verbeek's Hatchery and Rearing

Verbeek's Hatchery and Rearing has more than 50 years of experience in breeding and rearing of laying hens. This successful Dutch company produces hatching eggs, day old chicks and young hens for poultry farmers in and outside Europe. Verbeek is committed to achieve top quality, starting with the selection of the right breeds. Customer requirements have a central position in Verbeek's operating business.

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www.verbeek.com



Walinga Inc.

Walinga Inc. manufactures a complete line of bulk feed handling equipment such as on-sight pneumatic transfer units for grain and feed, as well as bulk feed transportation tank units, over-the-road semi trailers and straight trucks. Walinga does not believe in standardisation, all equipment is custom-made for clients and constructed in state of the art facilities. Today the 60-year-old family-owned company has 5 productions sites with 280 employees.

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pamb@walinga.com
walinga.com

Johan Verhoek is Koudijs' animal nutrition's area manager in Africa. Johan is dedicated to maintaining good business relationships with his customers on this continent. Not just when it comes to selling feed, but also in supporting them to achieve the best possible results.



Much more than just selling feed

Our meeting point for this story is the 'museum room' at Koudijs head office in Ede, the Netherlands. Here, we speak with Africa area manager Johan Verhoek. 'In this room, we collect and display all kinds of gifts that we received from customers from around the world and memorabilia we have saved over many years', Johan starts to tell.

A unique collection! The items in the room are testimony to De Heus' global presence. Among the collection is a vintage Koudijs sign from when they were still an independent Dutch animal nutrition company, before they were acquired by De Heus. As one of only a few Dutch animal feed companies, the former company Koudijs-Wouda had been prominent in the export of concentrates since the 1950s. Koudijs enjoyed huge brand familiarity and loyalty among local farmers. After the acquisition, this was an important reason to retain the name for the export activities.

Increasing farmers' knowledge

'We do more than just selling animal feed', Johan continues. 'It is our aim to provide the most viable feed solution to our customers throughout Africa. This is more than just bringing concentrates. Offering a good-quality product at an attractive

price, aligned with farmers' needs. And assisting and supporting farmers wherever we can assures the best profit for them.'

Management on the farm is extremely important to keep the birds healthy and let them produce optimally.

If we can contribute to improve the management on the farm, the results of our customers will be more competitive. In this way, we expect to establish an ongoing business relationship with them.'

Johan continues: 'An example is the "poultry coach app" management tool that we developed in Uganda. Through this app, we aim to increase farmers' knowledge of the life cycle of chickens. The key idea of the app is that the farmer receives daily advice tailored to the age of his flock. This starts with daily feeding recommendations. However, the app also covers other technical aspects, such as ventilation and the height of feeders.'

'We organise numerous training sessions for the farmers. In an accessible way, knowledge is shared. Farmers are trained and coached and given tips&tricks, which they can immediately apply in practice, increasing productivity and thus the farm's income. This in turn enables farmers to improve their personal quality of life.'



PHOTO: AD BAL

We see the benefits for the agricultural sector



Experimental setting for feed research.

We aim to increase farmers' knowledge



Layer farm in Uganda.

Using local ingredients

'This is what we call "Feeding Performance". Making a permanent mark. Supporting our farmers by tapping into their experiences, assisting them in their business and becoming more competitive in their market. We see the benefits for the agricultural sector. Not only through more competitive prices stimulating better performance, but also through the use of local ingredients creating value for more than just the livestock farmers.'

Recycling bags

In Africa all the feed is bagged in 50 kg polypropylene bags. **'We stimulate the collection of the empty bags to prevent them ending up in the environment.'** Each returned bag will create a discount on their new purchase. The empty bags will be recycled to pallets, poles and also re-usable shopper bags.

'All in all, everything we do must from the very beginning fit into the De Heus and Koudijs philosophy and values. We have done so in the past and we will keep doing so in the future', Johan Verhoek concludes. <<<

Pancakes with egg liqueur



The Netherlands



20 minutes

INGREDIENTS (for 8-10 pancakes)

2 eggs
500 ml full cream milk
Pinch of salt
150 g of flour
Unsalted butter for frying
200 g blackberries
Icing sugar
Egg liqueur



For more egg recipes:
www.mmmeggies.nl

In the Dutch Antilles, crushed avocados are mixed with alcohol to make a yellow drink. Mariners brought this drink to The Netherlands, where eggs were substituted for avocados, due to an absence of the latter and because they had the same colour.

Preparation:

1. Mix the eggs, milk, salt and flour into a light, airy batter.
2. Melt the butter in a frying pan, pour enough batter into the pan to cover the base.
3. Fry the bottom side until it is golden brown and the upper side is dry, then turn it over.
4. Warm the blackberries with a little bit of water.
5. Fill the pancakes with the egg liqueur, serve with the blackberries and icing sugar.

Enjoy!





Piet Van der Aar

Nutritionists: prepare for the future!

High feedstuff prices, the public debate about feed versus food, the search for alternative protein sources, and above all global warming are forcing the poultry sector to take a different approach to feed. Circularity and innovation should be the basis for a transition in poultry feeds.

The enormous genetic improvements, improved feed, and good hygiene have resulted in low feed conversion rates in broilers and high egg production in layers. The pride of the sector provoked a counter-reaction from opinion leaders from well-to-do urbanised society, who oppose this mode of food production. They demand slow-growing broilers and free-range layers. Retailers acted on these demands and offer a wide range of eggs and meat from slow-growing chickens. The resulting larger carbon footprint, less feed efficiency, and higher risk of avian influenza do not seem to play a role. It is the task of nutritionists to reduce these negative effects.

Most poultry feeds for this type of production still consist of corn and soya. The consumer trends call for a mindset change among nutritionists. The lower protein/energy ratios in the diet allow for the use of less digestible feedstuffs in the feed. It is an opportunity to formulate more circular diets and use locally available ingredients. Research and innovation will be needed to optimise the use of new feedstuffs. Not only their maximum incorporation in feeds should be determined but also methods to improve the digestibility of these potentially suitable products. A wide variety of treatments are available. Chemical treatment, solid-state fermentation, mechanical processing, or specialised enzyme addition are potential techniques.

Insect protein is often mentioned, but has limited potential. Insects convert plant protein into better digestible proteins, but each bioconversion comes with losses. Recent experiments by Wageningen University showed that black soldier fly maggots' N conversion rate is 38%. This is comparable with dairy cows. But also 24% of the carbon was converted into CO₂.

The current challenges for nutritionists cannot be solved without substantial investment in research and innovation. Without this, the transition towards more sustainable poultry feed will be impossible.

Piet van der Aar
is former Director
of Schothorst Feed
Research



‘It is always my challenge to feed on the cutting edge’

Jeroen Rohaan from Enter in the Dutch province of Overijssel has a layer farm with 66,000 aviary hens and 30,000 free-range hens on 16 hectares of land. Since 2000, Jeroen and his family have lived at this location after taking over the farm from Jeroen’s parents. He uses split feeding to improve the already low feed conversion rate even more.

In 2000, Rohaan still kept dairy cattle and laying hens, but after selling the cattle, he invested in the expansion of the layer farm. With the most recent investment last year: an extension from 65,000 to 96,000 hens was realised by adding an extra floor to the aviary house. ‘There used to be a lot of rivers and streams in this area, creating a very variable soil for the first few meters. Building a multi-storey poultry house starting at one and a half meters below surface level was cheaper than investing in soil improvement and constructing a single-storey house on it.’

Rohaan supplies eggs to egg trading company Hennes Euskirchen. A small number of the eggs are sold at a home sales point.

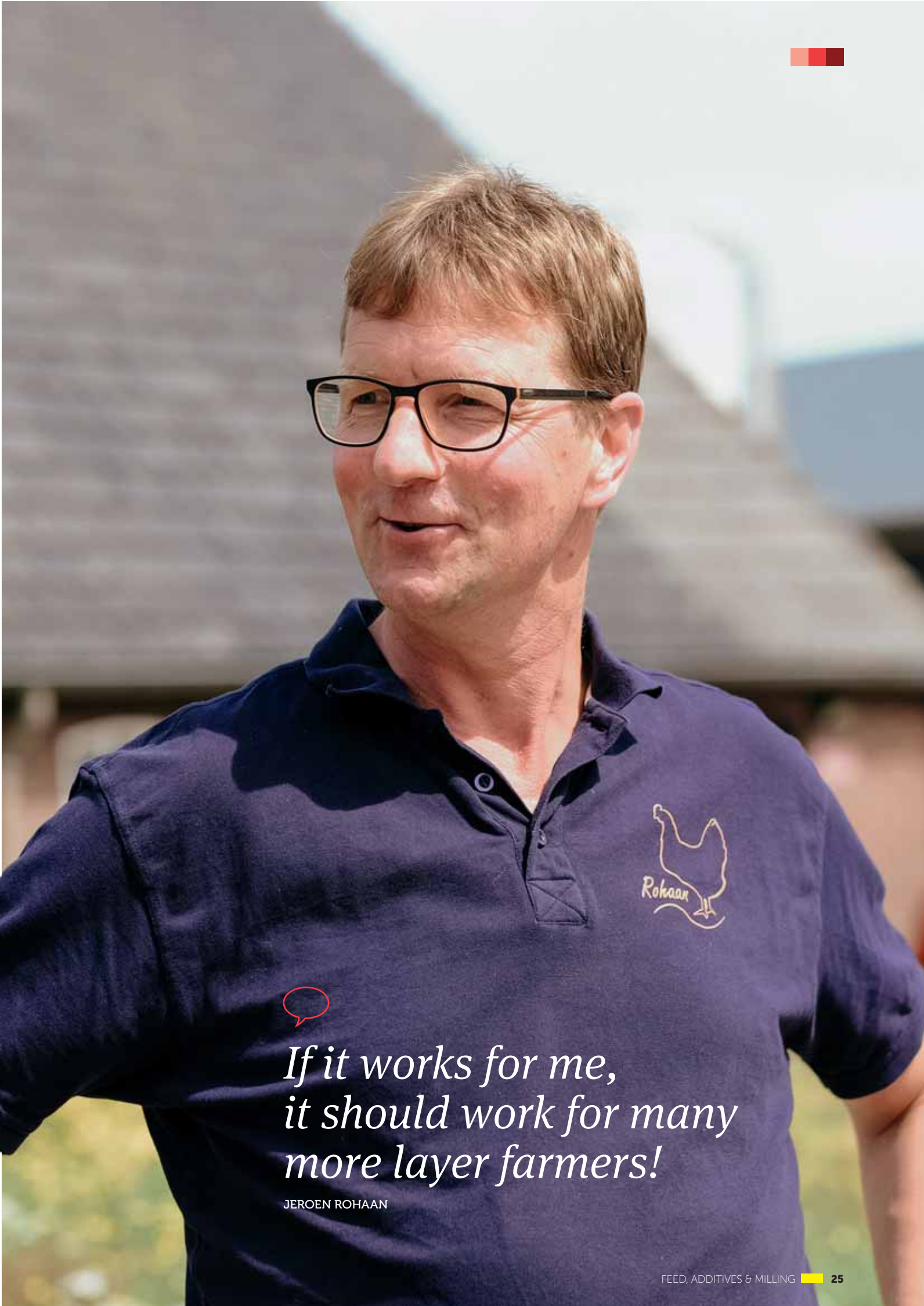
‘It is always my challenge to feed on the cutting edge’, says Rohaan. ‘A feed conversion of 2.05 is not strange to me. I do feed more luxurious feed, which is

necessary with such a low feed conversion, especially in the first six months. In those first 30 weeks, the hens must be able to develop optimally. **To get enough robustness in the hen and a good resistance, a more luxurious feed is a must for me.**’

Challenge of new feeding system

He uses split feeding: the hens receive a different feed in the morning than in the afternoon. Peter Venhuis, laying poultry specialist at ForFarmers, has been a familiar face on Rohaan’s farm for years: ‘With SplitFeeding we feed even more according to the needs of the hens; 40% of the feed is given in the morning and is high in protein, the afternoon feed is high in calcium because that is when the shell is formed.’





*If it works for me,
it should work for many
more layer farmers!*

JEROEN ROHAAN



'We have seen that in this way, three grams of feed per hen per day can be saved. This is an average saving, which can probably be even higher for entrepreneurs like Jeroen. A challenge we were happy to take on with him.'

The adjustment took the necessary time. 'The switch-over moment is very precise', says Rohaan. 'Halfway through the feeding session, the supply from the silo stops and the hoppers are then fed empty. After feeding, the hoppers are filled with the other feed, so that when the next feeding session starts, the second type of feed can be started immediately. It is therefore important to accurately estimate what is left in the feeding line up to the hoppers. You also need to know as accurately as possible how much is being fed each day in order to divide it properly over the 40/60 ratio.' Rohaan records after each feeding how many kilos and from which silo he has fed and regularly recalculates the feed ratio.

Searching for the balance

'Certainly in the beginning I was quite

occupied by it', says Rohaan. 'It is searching for the right balance again. I had to keep an extra close eye on the feed intake and make corrections where necessary, for instance if the hens eat less during a warm period. I have found that balance now.'

'If it turns out like Peter predicted, and we can deliver first-class eggs for four weeks longer, that means 23 eggs per hen', says Rohaan. 'And if you can save a few grams of feed at the same time... then it becomes really interesting!' <<<

Poultry farmer Jeroen Rohaan (left) and laying bird specialist Peter Venhuis (right) at the feed silos.



It's searching for the balance again



Broilers *love* larvae




The use of imported ingredients from plant origin in animal nutrition, is strongly under debate. Two widely used ingredients, soy and corn have a major impact on the environment and the climate. Insects such as the housefly and black soldier fly, might be good alternatives to partly replace soy and corn in poultry diets.

The WUR-led project InsectFeed investigates the options for using insects as an alternative poultry feed ingredient. Funded by the Dutch government, the project is being coordinated by Dr. Marcel Dicke, Professor of Entomology. 'The main question is: how to develop a sustainable insect-based poultry value chain', says Dr. Dicke. Poultry naturally eat insects, so broilers are very eager to eat fly larvae. The InsectFeed project has as stakeholders: the universities of Wageningen and Groningen, research institutes, Rabobank, insect producers, NGOs and other parties.

Housefly and black soldier fly

Marcel Dicke: 'The objective is to investigate the entire supply chain from food waste and other organic residual materials on which insects are grown, up to the consumer. Currently we investigate the housefly and the black soldier fly. The latter is known for its resistance to diseases. Both flies are easy and quick to breed. And they thrive on a wide scale of diets, i.e. residual streams from food production.'

Flies lay their eggs on decaying organic matter. Larvae hatch from these eggs and are harvested



just before they change to the 'pupa' stage. At that stage it has the highest nutritional value in terms of protein and fats. In the next stage, the puparium in which the pupa resides does contain too much chitin.

Ethicists

'Of course, the influence on bird welfare and growth parameters receive much attention in our research. And it might seem remarkable, but there are also ethicists involved to address the welfare aspects for both the chickens and the flies. After all, these are also animals', Dr. Dicke continues.

'Another important aspect is the limited volume of water that is needed to grow larvae. This is a strong asset in terms of sustainability. And last but not least, we expect that the remaining substrate on which the larvae were grown, can be used as organic fertilizer for crops, thus further closing the loop.'

'Our aim is to eventually reach an inclusion rate of about 5%-10% of larvae in poultry diets', Dr. Marcel Dicke concludes. 'But it may take 5 to 10 more years before this will be common practice. However, this will become a reality, also on an international scale!' <<<





Artist

KOEN Vanmechelen

A soothing cackling sounds from the yard in the Belgian hamlet of Plokkrooi. Artist Koen Vanmechelen lives here. The chicken is his muse. There are more than three hundred of them scurrying around. Chickens of all breeds. For more than twenty years, he has been successfully pioneering the phenomenon he calls 'bio-cultural diversity.'

This article is adapted and translated from the original, published in Landleven, Nov. 2021.

T

he eloquent Belgian celebrity likes to philosophise about life. And about chickens. The two are inseparable, according to him. Where the chicken is, man

follows. And vice versa. These two animal species have been living together for centuries. If the chicken is doing well, man is doing well.

Little devils

'Because man and chicken have lived together for centuries, we have created chickens in our image. The French pride, the poulet de Bresse, with its bright red comb, white body and blue legs, is identical to the French flag, and the cackling of the Turkish denizli crow sounds like the sound coming from the minarets. Does the Dutch Barnevelder chicken say anything about the Dutch? I cannot determine that easily. The Barnevelder was originally bred by Jewish people... The owl-beard, on the other hand, is a very Dutch chicken. The cockerels have those typical horns on their heads. They look like little devils. With an attitude of, "I'll come and tell you how it is."

Diversity

For more than twenty years, the Belgian artist has been working on his artistic cross-breeding project. For this Cosmopolitan Chicken Project (CCP), eggs and chickens are brought to his farm from all corners of the world. The core is not the chicken, but the cross-breeding and the diversity that results from that. The cosmopolitan chicken holds up a mirror to us. See those cute little chickens over there? That is a cross between the last generation CCP and an Israeli breed. They were shown at a big art event, the Jerusalem Biennale. By crossing different types of chickens, we have got better chickens. They are stronger, have a better immune system and are much more fertile.

'They are infertile'

'If we do not appreciate the generosity of



*The egg as an art object:
'A chick breaking the eggshell is a
symbol of liberation.'*



The Malines from Belgium, the poulet de Bresse from France, the English redcap, the American jersey giant, the German dresdner, the Dutch owlbeard, the louisiana from Mexico, the Thai poultry, the araucana from Brazil, the Turkish denizli horozu, cubalaya from Cuba, ancona from Italy, Chinese silkworm, Russian orloff, fayoumi from Egypt, poulet de Senegal, Slovenian styrian, Austrian sulmtaler, Indonesian ayam cemani, wyandotte, Danish grouse, maatiaskana from Finland and padovana from Vatican City.



*Photographic artwork
entitled Turbulence.*

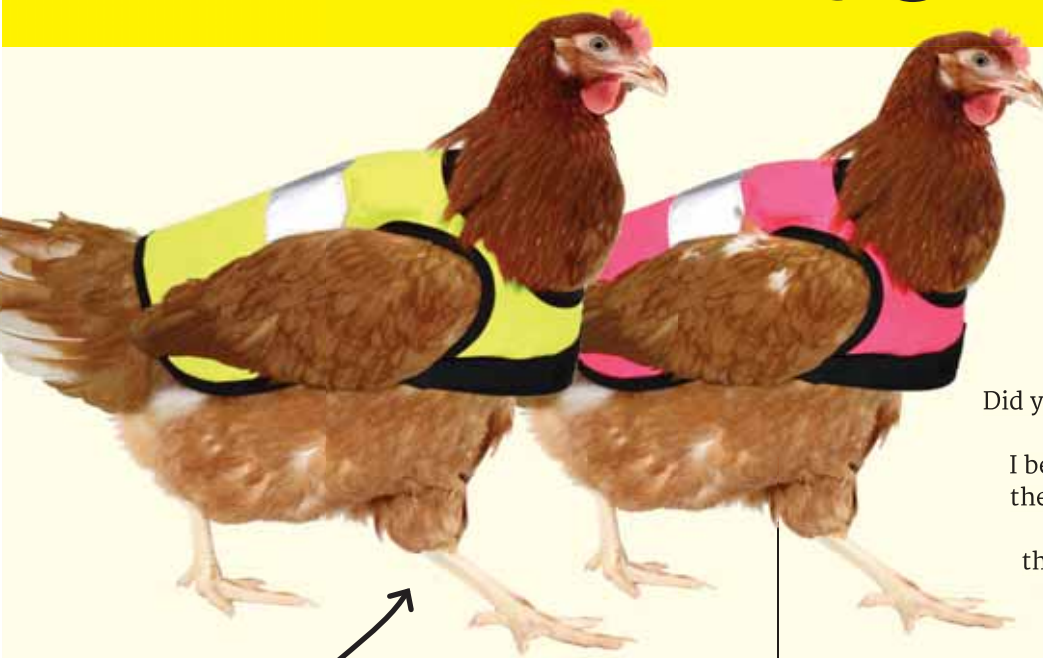
The breeding process is incredibly exciting

the time-honoured local breed of chicken, we will get nowhere. All the goodness is present in the local field. When I started crossing chicken breeds twenty years ago, I first crossed the Malines (Mechelse Koekoek) with the poulet de Bresse. With their offspring - the Malines bresse - I went to England in search of the redcap. This chicken was almost extinct, but I found three on a farm in Northampton. "They are infertile," the farmer told me. For a couple of weeks, I let a Malines male walk near the redcaps. Their infertility was promptly remedied. Healthy chicks came into the world. Soon after, I was on the cover of The Times with my new redcap chickens.'

The artist's love of chickens was instilled early on. 'When I was five years old, our baker gave me two chicks, a cock and a hen. They proved to be a fertile couple. I found it mighty interesting to see how the eggs hatched. At night, I would sit by the hatcher and watch the chicks hatch. Through the egg, I saw the chicks first break the air cell in the egg and then break the shell with their egg tooth. Incredibly exciting! The love for chickens has grown into a broader love, for nature. That is what really worries me. I regard the welfare of the chicken, or the lack of it, as a gauge. The chicken holds up a mirror to us.

Follow nature's rules

As an artist, Koen comments on society. 'I see that as my role. I cannot do otherwise. Because I am increasingly aware that when mankind does not follow nature's rules, nature turns against us. For example, I think it is wise to break through the monoculture in poultry farming. The compulsory fencing off of poultry is an almost annual "business accident" in this sector. Who knows, maybe this is what awaits us as humans in the years to come', warns the 55-year-old, referring to the COVID-19 pandemic. <<<



In yellow & pink!

HIGH VIS CHICKEN!

Did you ever wonder or worry about the visibility of chickens at night? I bet you didn't! But if you did, here's the solution. High vis-jackets ensure your hens are safe and visible in the dark. Enjoy the peace of mind of knowing your chickens are safely wrapped up in high visibility! Available via www.omlet.com



A BIT OF HISTORY



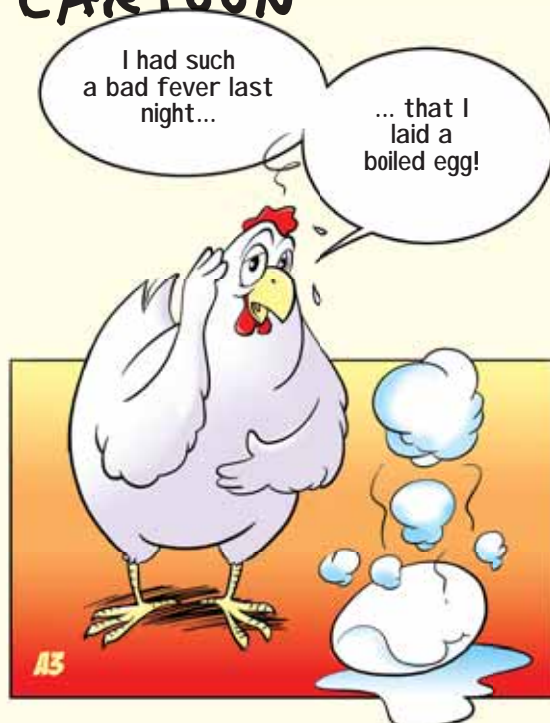
Barrel incubator, ca. 1750, heated with dry manure. An invention from Réaumur.

Egg with 6 yolks in one pan



You might be pretty surprised if you see an egg with a large number of yolks in a frying pan. In the photo one egg with six yolks! You see the most double yolkers when hens are between 22 and 35-weeks of age.

CARTOON





Two companies, one team

It is very busy at the feed mill. 'It's never been so busy', says Bob Pritchard. He has been a plant manager for 10 years and knows the plant like the back of his hand. Bulk trucks are coming and going. These are challenging times for the people at Coppens Diervoeding (Coppens Animal Feed) in Helmond, the Netherlands.

On 1 October 2021, the regional compound feed producer was taken over by De Heus, an internationally operating animal feed supplier. Production capacity was increased from 6,000 to 7,500 tonnes per week in a short space of time, which had a massive impact on logistics and planning, and consequently on the people on the work floor. The takeover combined with an immediate increase in production means a lot of changes in a short time. The plant is now so full, a few hours of disruption has major consequences for the entire logistics process. It is now really important that – as a team – we prevent disruptions from happening. By 'we' he means not only his own people, but also their partners. Innovative and Committed are the

core values of compound feed producer Coppens Diervoeding. And that is what it also expects from the partners it works with. This is confirmed by the company's collaboration with KSE Process Technology in Bladel. They supply the production software, and they manage and replace the servers. Some of the equipment in the production line also comes from there.


For as long as Pritchard has been the manager of this plant, he has been working together with the people of KSE, but the collaboration dates back even further. 'Theo Coppens, until recently one of the owners, has always had a good relationship with that company. He comes from the same region as the owners of KSE and that apparently clicked very well. We have been customers since this feed mill was built in 1989.'





Bob Pritchard controls
all processes from his
'control centre'.

PHOTO: JOOST DUPPEN



**Aim to move
forward
together and
look beyond
your own part**



PHOTO: JOOST DUPPEN

That's a good sign

Joint development

'The collaboration is therefore more than a customer-supplier relationship,' Pritchard explains. 'I have weekly contact with them. It's about making improvements to the software, but also about them joining our thought process in renewal or replacement projects. And even about the joint development of new products that make our plant more efficient. So I really see us as a team, even though we are two companies.'

An important result of this the PROMAS ST software application for the box dosing system that has been operational in the plant since 2020. 'Previously, operators had to manually add small amounts of raw materials to a batch,' says Pritchard. 'That meant a lot of lifting of bagged goods, repetitive actions and regular exposure to dust. That kind of thing makes the work less attractive and also inefficient. Together with people from KSE, we developed a fully automated solution for this. It is now running in our plant, but it is also available for other feed mills.'

Planning is important

Now that production has been ramped up so much, the planning of maintenance, replacement and renewal has become even more important. 'We can coordinate the planning of activities very well. For example, KSE always works on Sundays for major works in the plant. Seeing as the plant is closed on Sundays, these works do not affect production. It's great that we can arrange it that way, because it also means something to their own people, of course.'

What is also important to Pritchard is the stability in the KSE team. 'Some people have been coming here for 20 years, so they know the plant inside out. We even had one of our own joining them. I think it's a good sign that they can retain their personnel. Especially in a region where there are a lot of tech companies that can easily poach people.'

This morning I spoke to someone who had left the company, but is now back. That's positive.'

Are there never any dissatisfactions or struggles in the collaboration? 'Of course things happen, as they do everywhere. And we do talk about it. But the most important thing is that you aim to move forward together and look beyond your own part. That is what I mean by commitment. We demand it of ourselves and our people, but also of our partners. The fact that our collaboration has lasted so long tells me that KSE fits in well with our core values.' <<<



Feed safety worldwide: a personal bit of past and future

The past

In the Netherlands, there were some feed safety issues that attracted a lot of media attention at the end of the 1980s: salmonella, aflatoxin, dead cows from lead-contaminated feed, coccidiostats in eggs... This led to pressure from the Ministry of Agriculture to take measures in the form of inspections and quality control. The 1992 GMP code was established. The focus of our scheme was and is on Good Manufacturing Practices, HACCP, ISO certification, supply chain approach, traceability, and crisis management/communication. The supply chain approach is crucial. We learnt in the 1990s that most of the feed safety emergencies were caused by hazards in the supply chain. A striking example was the roughly 70,000 tonnes of citrus pulp from Brazil with dioxin contamination, distributed to feed mills in the Netherlands,

Germany and Belgium in 1998. This was not only a huge problem for the end users, but

also for the citrus fruit processors. It prompted the European Union to impose an import ban for at least one year, while Northwest Europe was the only export market for Brazilian citrus pulp.

Initially, the organisation was still managed by the Animal Feed Product Board, a kind of semi-governmental organisation. The international expansion of activities was reason to make it a completely independent organisation that transitioned into GMP+ in 1999.

My biggest challenge in the early days was to convince people in the industry to impose requirements by themselves. A fundamental mindset change was necessary.

To be honest, the scandals that attracted great media attention helped forge change, because it tarnished the industry's image and had huge financial consequences. Since 2010 the GMP+ Feed Safety Assurance Certification scheme is managed by GMP+ International. Today, more than 19,000 companies located in more than 85 countries worldwide are GMP+ certified.

The future

In August 2021, I stepped back as Managing Director. I will continue to support the organisation until my full retirement next year. I have every confidence that the new management and the team will continue to pursue added value for the GMP+ certification scheme and services for feed. The drive is and will be: Feed Safety Worldwide. The lessons we have learnt over the past 30 years will enable the organisation to continue in a sustainable way, with strong commitment from many companies and stakeholder groups.



Johan den Hartog

Former Managing Director
of GMP+ International





Agrifirm

The cooperative Agrifirm unites the forces of 17,500 entrepreneurial farmers in the Netherlands. This combined endeavour gives them lasting benefits in the acquisition of high-quality products such as sowing seeds, animal feeds, agricultural machinery and technical or legal advice. But Agrifirm offers more than simply products. The organisation also leads the way in broad solutions for better farming results, that take the shape of expert advisory services and innovative food concepts.

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7302 HA Apeldoorn
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www.agrifirm.com



AgruniekRijnvallei

AgruniekRijnvallei (AR) plays a prominent role in poultry farming in the Netherlands with its poultry feeds. AR produces the feed according to the Zuiver Voer philosophy. Besides feed, AR provides with the €i-plus approach the necessary knowledge and tools to optimise the management and let the hens perform to the maximum. Building a long-term relationship with the poultry farmer is important to us.

Rijnhaven 14
6702 DT Wageningen
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info@argroep.nl
www.agruniekrijnvallei.nl



Cagemax

The Cagemax trading company has been active in the purchase and sale of high-grade animal protein and fats since 1997. Cagemax has successfully set up and expanded this trade by supplying large quantities to pet food producers. Besides its initial focus on the pet food sector, Cagemax is now also active in the supply of animal by-products, biological by-products and waste products in areas such as the aqua feed sector, compound feed industry, fertiliser industry and the energy sector.

Oude Bosscheweg 9
5301 LA Zaltbommel
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info@cagemax.com
www.cagemax.com



De Heus

Royal De Heus is an international organisation with a leading position in high-quality animal nutrition. Since its founding in 1911 it has expanded from a regional Dutch feed company to a feed conglomerate with activities in more than 50 countries. De Heus offers a wide range of feed solutions for different types of livestock and aquaculture farmers. Nutritional products vary from complete and supplemental feeds to concentrates, premixes and tailor-made feeds for farm-specific situations.

Rubensstraat 175
6717 V Ede
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info@deheus.com
www.deheus.com



Dinnissen Process Technology

We're proud to be known for our expertise, quality products and tailor-made solutions. We're even more proud that our customers and employees know they can count on us. By keeping engineering, production, testing, installation, commissioning and service in-house, we don't have to rely on others, and that's why others can rely on us.

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powtech@dinnissen.nl
www.dinnissen.eu



DSM Animal Nutrition & Health

DSM Animal Nutrition & Health is globally active in the development and formulation of high-quality premixes and nutritional supplements for the professional animal feed industry. Our products, concepts and support are based on the latest scientific knowledge and tailored to the specific nutritional needs of animals. DSM Twilmij translates DSM's global knowledge to the local Dutch market. With a technologically well-developed premix plant and an expert team, we can tackle any animal nutrition issue.

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3776 LZ Stroe
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www.twilmij.com



F2CARE

F2CARE offers worldwide nutritional services to suppliers of additives and feed specialties, premix compounders, feed manufacturers and pig and poultry integrators. Services range from (new) ingredient evaluation to feed formulation, from high level nutritional reviews to on-farm recommendations, and from product development (including trial design and trial implementation) to marketing support.

Keizerinnestraat 6
5663 PR Geldrop
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info@f2care.nl



ForFarmers

ForFarmers is an internationally operating feed company that offers Total Feed solutions for conventional and organic livestock farming. ForFarmers gives its very best 'For the Future of Farming': for the continuity of farming and for a financially secure sector that will continue to serve society for generations to come in a sustainable way.

Kwinkweerd 12
7241 CW Lochem
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info@forfarmers.nl
www.forfarmers.eu



FRAmelco

FRAmelco, known for the FRA® brand, provides farmers with feed and drinking water additive solutions that increase animal health and performance, while reducing the use of antibiotics. FRA® takes pride in delivering high quality products and services. Research and development are fundamental in today's ever-changing animal feed industry. FRA® nurtures a company culture that stimulates the inventiveness and the personal development of its employees.

Ruisvoorn 5
4941 SB Raamsdonksveer
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+31 (0)88 044 33 00
info@framelco.com
www.twilmij.nl



Globe Ingredients

Globe Ingredients is a well-known worldwide player in the global market of feed ingredients/additives. We supply our products to some of the biggest premix-factories, feedmills and integrators around the world.

Daltonstraat 45
3335 LR Zwijndrecht
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+31 (0)78 623 18 00
www.globe-ingredients.com



GMP+ International

With over 13,400 participating companies in more than 70 countries, GMP+ International is a leading player in the global market of feed safety assurance certification. GMP stands for Good Manufacturing Practices. This international certificate was created from a safety perspective in 1992, but GMP+ has since then developed into a full-fledged certification scheme for the feed industry that integrates ISO-quality management requirements, HACCP and other elements.

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Jadis Additiva

Jadis Additiva develops safe feed additives, services and hygiene products for the premix and mixed feed sector. This internationally operating organisation offers valuable high-quality additives with a proven value, among which vitamins, natural minerals, pigments and antioxidants. All quality products by Jadis Additiva come with a high service level and technical advice. The company also provides processing aids for the dosage and homogeneity of feed mixes.

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KSE Process Technology

Founded in 1973, KSE Process Technology has grown into a global player in the field of dosing and weighing systems and automation software for the animal feed, pet food and premix industry. Modular machines and software for custom-made solutions, that is what KSE excels in.

Rondweg 27
5531 AJ Bladel
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www.ksegroup.com



Marvesa

Marvesa is specialised in developing and delivering fat-based nutritional products for the animal feed industry. We are an integrated supplier who not only supplies classic oils and fats but also energy sources with added value for feed mills and farmers. Marvesa has full control over the supply chain and provides optimum quality, reliability, transparency and cost savings to its customers.

Hornweg 61
1044 AN Amsterdam
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marvesa@marvesa.com
www.marvesa.com



Noblesse Proteins

Noblesse Proteins BV produces poultry category 3 proteins and fats from 100% poultry slaughterhouse by-products. The products are used as primary ingredients for the pet food, aqua feed, animal feed, biofuel and fertiliser markets. These products contribute to reducing the world protein gap. Our aim is to utilise as much animal protein and animal fat as possible.

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Orffa

Orffa develops, customises, sources and offers feed additives and feed additive concepts for the animal nutrition market. In short: we create, select and deliver. As the feed additive specialist, we have dedicated teams engineering feed solutions with value added products and concepts for all stakeholders in the animal production chain. Our feed solutions range from simple individual products to complex solutions that aim to overcome and solve the challenges faced by the animal production industry.

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www.orffa.com



OTTEVANGER
MILLING ENGINEERS

Ottevanger Milling Engineers

Ottevanger Milling Engineers is a leading global supplier of production equipment and processing lines for the grain processing and compound feed industry. Founded in 1909, Ottevanger Milling Engineers is today still an independent, privately owned, successful Dutch company, managed by of the fourth generation of the Ottevanger family.

Moerkapelse zijde 32
2751 DL Moerkapelle
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+31 (0)795 93 22 21
info@ottevanger.com
www.ottevanger.com



Provimi

Provimi is one of the international leaders in the animal feed industry. The company has more than 85 years of experience in the production of innovative and performing animal nutrition. As a developer of premixes, concentrates and specialty products, Provimi supplies clients in over 100 countries. With quality as a key operational feature, Provimi invests heavily in research and expertise to provide customers with efficient and custom-made feeding programs.

Postbus 5063
3008 AB Rotterdam
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+31 (0)10 423 95 00
info@provimi.nl
www.provimi.nl



Sonac

Sonac Ingredients processes animal materials into high-value and practical ingredients like fats, protein products and minerals for use in various animal feeds for poultry. For more than a century the organisation has been an international platform for innovation and development. The three main values of all products made by Darling Ingredients are: Natural, Nutritious and Sustainable.

Kanaaldijk Noord 20-21
5691 NM Son en Breugel
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+31 (0)499 36 48 00
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www.sonac.biz



Trouw Nutrition

Trouw Nutrition, Nutreco's livestock business line, is an organisation that deeply cares about building a more sustainable future – both for our industry and for people everywhere. We are committed to translating science into actionable, practical nutrition and farm management solutions to help the poultry industry produce high quality eggs and meat.

Nijverheidsweg 2
3881 LA Putten
The Netherlands
+31 (0)341 37 16 11
www.trouwnutrition.com



Van Aarsen International

Van Aarsen International develops, manufactures and supplies machinery for animal feed production. Among its worldwide customers are integrators and commercial producers of poultry feed, premixes and concentrates. Van Aarsen International has become a household name in quality equipment and turn-key solutions for feed production and pre-mix plants. The company also specialises in the renovation, optimisation and modernisation of existing installations.

Postbus 5010
6097 ZG Heel
The Netherlands
+31 (0)475 57 94 44
advice@aaarsen.com
www.aarsen.com



Van Mourik Group

The Van Mourik Group develops and builds complete turn-key installations for the processing of dry materials, among others for the animal feed industry. We are also specialised in expansion and optimisation of existing installations and help our clients with service & maintenance.

Boylestraat 34
6718 XM Ede
The Netherlands
+31 (0)318 64 11 44
info@vanmourik-group.com
www.vanmourik-group.com



VAV Conveyor components and solutions

VAV conveyor components and solutions is supplier of components for conveyors used in the dry bulk handling industry, such as: bucket elevators, chain- and screw conveyors. These conveyors are used in agricultural raw material terminals, feed mill industry, feeding systems but also in waste- or glass recycling plants.

Lageweg 25
2222 AG Katwijk
The Netherlands
+31 (0)71 402 37 01
contact@vav.nl
www.vav-nl.com



Vitelia Voeders

Vitelia Feeds is a result of the merger between 14 farmer cooperatives in Limburg and Brabant, two provinces in the south of the Netherlands. This innovative organisation specialises in the production and selling of compound feed to local farmers. Care and passion are core values for Vitelia that manufactures healthy, balanced and honest animal feed. These animal feeds for poultry (laying hens and broilers) are produced in Vitelia's own factories.

Deputé Petersstraat 27
5808 BB Oirlo
The Netherlands
+31 (0)478 57 81 11
voeders@vitelia.nl
www.vitelia.nl

Made in the Netherlands, built in Ivory Coast



In many countries across the globe, increasing food production is a top priority. Like in Ivory Coast. Currently, an impressive agricultural project is being realised in this country in West Africa, thus enhancing production of field crops, vegetables, fish and eggs. Gerbrand van den Brink shares his experience with this project.

'By accident, we got involved in this agricultural project in Ivory Coast', says international sales manager Gerbrand van den Brink of farm house supplier Bincx. 'We were pleasantly surprised when we were contacted by somebody who is working for an Israeli company that is involved in this project. They were searching for a supplier of agricultural buildings, among which poultry houses. Coincidentally, he had come across our company details and address on the website of Dutch Poultry Centre. Since we are a member of DPC, we are displayed on their website. Eventually, contact was established and together we found out that we could be a good fit for supplying buildings. After negotiations, we sealed

an impressive deal and from then it went on.' Farm house supplier Bincx now plays a major part in this project, which includes poultry houses. Located at Kootwijkerbroek in an agricultural area in the Netherlands, the company specialises in constructing industrial buildings, among which houses for agriculture. Not just in the Netherlands and neighbouring countries, but also exporting 'further away' nowadays.

Four sites

The agricultural project consists of four more or less similar sites in the north and south of the country. Two of these sites are also home to layers. And there is a hatchery on the site in the north, supplied by Pas Reform, also a DPC member. **The entire project has a value of over one hundred million euros.** Bincx' participation >>>




*We were
pleasantly
surprised!*

GERBRAND VAN DEN BRINK

PHOTO: AD BAL



PHOTO: AD BAL

We shipped all components: 150 containers in total!



extends to most of the buildings, sixty in total. These include – for each site identical - main buildings, gate office, a lodging facility, tractor shed, storage houses, training facilities, etcetera. Of all these buildings, eleven are related to poultry: rearing and layer houses, as well as one hatchery.

150 containers

‘Once the deal was sealed, we started manufacturing and shipping all the materials’, Gerbrand continues. ‘We have all the facilities at our company to submit tailor-made components, using advanced computer design technology. All metal work, such as cutting and welding is done in the workshop on our premises. Preparations like foundation, water and energy supply, sewage infrastructure, etcetera were done well in advance by

local subcontractors. We shipped all the components to Ivory Coast, in 150 containers in total!’

Made in the Netherlands

From the moment the materials reached the country in West Africa, a supervisor from Bincx has been coordinating the construction process on site. **‘We want to be sure that all houses are built to our quality standards’**, says Gerbrand. ‘Apart from the supervisor, we also sent skilled technicians like electricians and plumbers from the Netherlands to assist. Thus, we guarantee a professional contribution to this esteemed project. Currently, construction work is still ongoing and we expect to have everything finished by around Q3 of 2022. Nice project in Africa to add to our portfolio. Made in the Netherlands!’ <<<

Chicken fajitas rice bowl



Mexico



30 minutes

INGREDIENTS

(for 4 persons)

For the rice bowl:

600 g of chicken breast (or chicken fillet) in strips
1 red pepper
1 yellow pepper
1 green pepper
1 red onion
300 g of rice
120 g corn (from can, drained)
120 g of black beans (from can, rinsed and drained)
4 tablespoons of guacamole
4 tablespoons of sour cream
2 tomatoes

For the fajita marinade:

6 tablespoons of olive oil
2 tablespoons of fresh lime juice
2 teaspoons of smoked paprika powder
2 teaspoons of salt
3 teaspoons of ground cumin
2 teaspoons of onion powder
2 teaspoons of garlic powder
4 teaspoons of oregano
2 teaspoons of cayenne powder
Pinch of pepper

Preparation:

1. Preheat the oven to 190°C and line a baking tray with baking paper.
2. Make the marinade by mixing all the ingredients listed under 'For the fajita marinade.' Combine the marinade with the chicken strips and leave it covered in the fridge for half an hour.
3. Cut the onion and peppers into strips and add them to the marinated chicken. Mix everything well so that the peppers are also well covered in the marinade.
4. Spread the chicken and vegetables on the baking tray lined with baking paper and bake for about 15 minutes at 190°C.
5. Prepare the rice according to the instructions on the packet and cut the tomatoes into cubes.
6. Divide the chicken and rice between the bowls and add the corn, beans and tomato. Finish with a spoonful of guacamole and sour cream.

The chicken fajitas rice bowl is now ready, enjoy!



kiprecepten.nl

For more chicken recipes:
www.kiprecepten.nl

The Balkans *are making*

Up until the recent past, the Balkans region in Europe was not at the forefront of technological development. But times are changing. New projects are emerging, also in the poultry industry. Examples include the 'Perutnina' integrator in Bosnia Herzegovina and the 'Superior' integrator in Serbia, built by Jomapeks from Serbia.

A new and educated generation is stepping up

A poultry farm in Bosnia.

a strong leap forward

Modern poultry housing systems demand high-quality components. After all, conditions should always be kept optimal under all circumstances in order to allow birds to thrive and be productive. Poultry housing systems must, therefore, be reliable and functioning all the time, without any compromise. Jomapeks makes sure of that. Alberto Bergamaschi, sales representative at Jomapeks, explains: 'The manufacturer of drive technology for many of the automatically operated systems used is Ridder Drive Systems. They supply drive units that can be used to control various types of systems and equipment in poultry houses. Their geared motors are suitable for the ventilation, lifting and nesting.' These products find their way to many parts in the world. Like in this case to Serbia. Besides a distributor of Ridder products, Jomapeks is also a manufacturer itself, making plastic and metal components and producing its own equipment for the poultry industry, including auger systems and feeders, air inlets, cooling pad frames, and farm computer controllers.

Best solutions

Apart from that, Jomapeks builds complete turnkey projects, including in Bosnia Herzegovina. Near the village of Pelagicevo, the company installed broiler equipment at 'Perutnina' broiler farms with as many as 25 poultry houses for a total of 750,000 birds. In Serbia, nearby the village of Zitiste, Jomapeks installed broiler equipment at 'Superior' farms with 30 poultry houses for a total of 600,000 birds. In these new projects, Ridder Drive Systems provided technical support to find the best solutions for ventilation and lifting applications.

Highest standards

'In the not-too-distant past, countries in the Balkans were basically developing countries,' says Alberto Bergamaschi. 'However,



Alberto Bergamaschi

nowadays they are making a strong leap forward. As a result, new projects like this integrated poultry business in Bosnia are of the highest standards. This means they use very technical and precise technology. Such technology also comes from Ridder, which is of the highest level, with its wide range of applications. This goes along with precise software programming, which demands adequate management skills.'

Eager to learn

'Since the level of education in the Balkans region has gone up substantially in recent years, high tech is certainly within reach nowadays. A new and educated generation is eager to learn and is currently stepping up', Alberto analyses the situation. 'Along with technical assistance from Jomapeks, we are confident that these integrations in Bosnia Herzegovina and Serbia will be successful food producers, thus supporting further development of the countries.' Alberto Bergamaschi is already thinking of new projects: 'Our next project will be a broiler and duck integration in Bulgaria and Hungary. Again, Ridder technology will certainly play an important part!' <<<

‘The basis of being successful is having the best available equipment’

JF McKenna is a major supplier of housing solutions for the poultry industry in the UK and Ireland. They represent, among other companies, Fancom. ‘Good products and good people to work with. They have the tools for the demands of modern poultry farming.’

‘Our relationship dates back to about 25 years ago’, says Brian Moxon, Sales Manager at distributor JF McKenna in the UK and Ireland. Brian is based in the UK and project manager Amber Oates in Ireland. ‘Apart from Fancom, we distribute other equipment including Lubing drinkers, Hato lighting systems, Chore-Time housing systems and more. Hence, we can offer complete turnkey packages, tailored to the individual needs of our customers.’

Dedicated company

‘From the beginning of our partnership with Fancom, we began supplying ventilation systems to commercial mushroom growers in Ireland. We gradually expanded our activities to the pig and poultry industries, both in the UK and Ireland. Over the years, we have installed their systems at customers throughout both countries.’ ‘The staff are good people and we very much enjoy working together with them’, Brian continues. Both Brian and Amber agree, ‘It is truly a dedicated company in smart farming solutions nowadays and that’s what makes them specialists in this field. Apart from climate control, this includes feed automation and biometrical

systems. Their focus is on highly automated systems which are permanently collecting data on which to build information.’

24/7 control

‘On the poultry side of JF McKenna, we supply complete solutions for poultry house automation’, Brian continues. ‘This includes the iFarming (Intelligent Farming) and Smart farming management system from Fancom, which gives us 100% insight into and 24/7 control of the farm. This solution keeps the farm and flock in top condition. It automatically and continually provides data about climate control in the houses and automatic feeding systems. The smart farming system also continuously monitors the behaviour of the birds, providing insight into their behaviour every moment of the day. It visualises and analyses this data.’ Reducing power usage is an important topic. ‘Good equipment control together with the use of energy saving fans optimise the systems power usage though the year.’ ‘The basis of being successful is having



Project manager
Amber Oates





Not just a business relationship, but also friendship

BRIAN MOXON

Brian: 'Currently, we have about 750 customers to which we supply directly. In the poultry business, our focus is on broiler production nowadays.'



the best available equipment to bring to the market and a good relationship with the supplier in terms of communication, support, sales and logistics. That's a key asset they bring to us.'

No cherry picking

'We represent their entire programme, no "cherry picking."' Hence, we are able to install complete houses, in which Fancom plays an important part', Brian says. 'These highly automated systems demand in-depth knowledge and understanding of the customer requirements in order

to get the best benefit from it. After all, the computer does a multitude of tasks. For that reason we provide training and support to our customers. Not just that, we also bring study groups together to allow our customers to share and exchange knowledge and experiences. All with the objective to get the best out of these high-tech systems.'

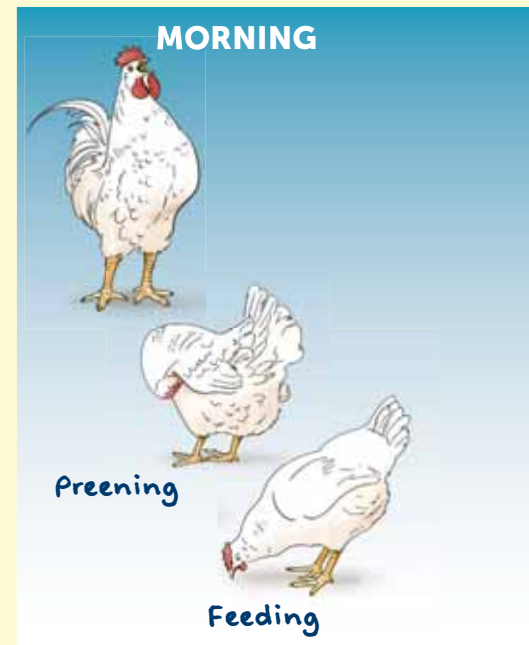
'These have been provided to us by Fancom over the past 25 years, which has led to not just a business relationship, but also to friendship. A solid basis for continuing our longstanding collaboration.' <<<

Chicken behaviour

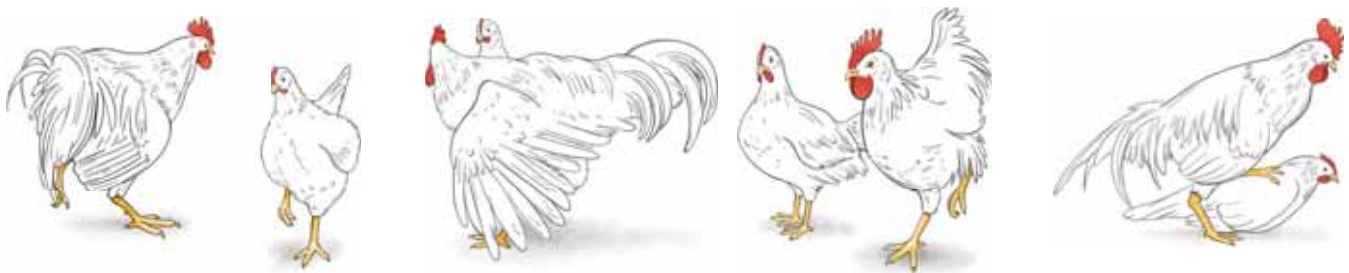
You can't keep poultry if you don't know anything about their behaviour. It is important to the poultry farmer, not only to ensure that the welfare of the birds and production efficiency are maintained but also to be able to participate in public debates. The chicken by nature is a wary, shy animal. In the wild it lives on the jungle floor in a thick forest habitat and its behaviour tends to fit into that niche. It uses the ground space for foraging, dust bathing and nesting. At night it perches in the trees for protection against ground predators. Part of this behaviour is innate and it is believed that the inability to display this behaviour may lead to frustration.

Daily routine

Chickens synchronise their behaviour and patterns can be observed during the day. Align the management accordingly (feeding, lighting, activities in the poultry house). Be aware that this pattern varies at different phases in the chicken's life cycle.



Stages in mating behaviour

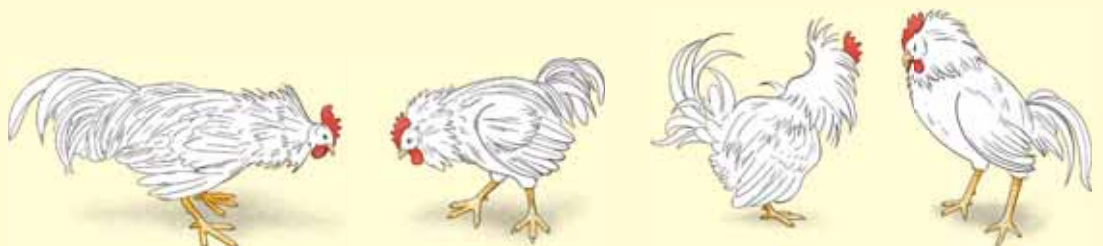


The male circles around the female, displaying waltzing, titbitting, high-step advance, feather ruffling, crowing, wing movements.

If the female wants to allow mating, she will spontaneously assume a crouching position.

Stages in aggressive behaviour

Sometimes there is aggressive behaviour, especially between males that might consider other males intruders in their territory.



When a fight starts, two birds stand face to face, opposite each other, in a threatening position. The neck is stretched, in males usually horizontally and in females more vertically. The feathers of the neck are completely erect.

NOON



Dust bathing



Egg laying

AFTERNOON



Mating



Feeding

EVENING



Roosting



The male approaches the female from behind and stands on the back of the female.



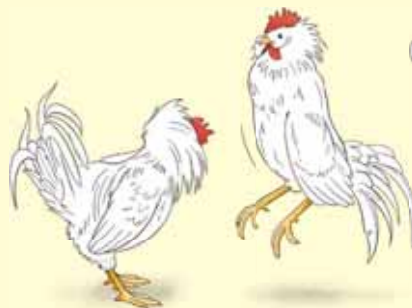
This is usually accompanied by the male taking the feathers on the back of the female's head or neck in his beak.



The male moves his tail down and to the side (the female moves her tail up and to the side) so that their cloacae can make contact.



The fighting starts with leaping toward the opponent, pushing off both legs simultaneously, accompanied by wing-flapping.



During leaping, the legs are thrown forward, kicking the opponent with a rapid ruffle of both feet. The legs move alternately and with high frequency and amplitude during kicking. Vigorous pecking at the opponent is another element, often to the head.



'Flock data is

Jos Nelissen is eager to collect data to manage and innovate his farming operation to the highest standards. 'Producing a high-quality product is my passion.' He is permanently looking for ways to get optimal conditions for his flock.

**We truly care
for our birds**

JOS NELISSEN

PHOTO: AD BAL

essential to manage and innovate'

Jos Nelissen's farm in Oirlo, the Netherlands, dates back to 1956 and was founded by his parents. At that time, they kept layers and grew vegetables, until they fully switched to layers in 1979. Jos and his wife took over the business and by 1995 they kept 200,000 white layers in cages.

'I was not convinced that this was a future-proof business model', says Jos. 'So my wife and I started travelling to various countries and we noticed the differences in production systems. In the year 2000, a supermarket chain in our country abandoned cage eggs. **That was a clear signal for us that the rules for keeping layers were set to change.** At that same time Wageningen University published the benefits, importance and value of eggs. This highly interested and much triggered me. Although I am not a scientist myself, I do like to read scientific literature in order to deepen my knowledge.'

Freedom of movement

'We truly care for our birds', Jos continues. 'In 2012,

new EU legislation prohibited the use of cages and at that moment we expanded our farm with two more houses. The entire surface of the houses was doubled, but at the same time we decreased the population of our layer flocks by 25 percent and fully switched to Vencomatic's Bolegg Terrace aviary system. This system had proven its value for bird welfare, as the layers have freedom of movement in the open system. We are convinced that the birds behave and move around according to their biorhythm while kept in confinement.'

Egg tunnel

'Currently, we keep 130,000 white layers in four houses on two sites. On our main site, we have two houses and the egg packing station, which was also installed by Vencomatic Group. The other houses are located across the road. Eggs from these houses are transported to the packing facilities by means of a long conveyor belt that runs through a tunnel underneath the road.'

>>>





White layers are like thoroughbred horses



Natural light

'The white birds demand special management. They behave more or less like "thoroughbred horses"', says Jos, particularly in an aviary environment. 'In this context, ample natural light and proper ventilation are essential parameters. Together with Wageningen University, we found out that birds behave and perform better if they are kept under natural light conditions. So, we have placed light domes in all of the houses. These let in full spectrum daylight including ultraviolet light, which enables the chickens to recognise each other and behave as in a natural environment. Special cameras recognise the birds' feather pattern

and comb, while special software in the egg collection system lets us permanently monitor the birds individually. Where they move and where they lay eggs. Each deviation in their behaviour is an indication that something is wrong. We then take action as and when needed.

Chicken's perspective

My conviction is that healthy birds lay healthy eggs. For that reason, eight pictures are taken of each egg that leaves the house. We can register if it's okay, for example if it's "shiny". That's an important indicator.'

'Our entire management is based on permanently monitoring and observing our flocks. For that reason, we have regular meetings with a nutritionist and a poultry veterinarian. Together we analyse the data that we collect and go inside to observe the flocks. When needed, we take measures in order to keep our layers in top condition.

We chose Vencomatic Group because they are an innovator in poultry house design and systems. They take chickens' perspective! That's an important contribution for us to achieve the high standards we set. To keep innovating all the time.'<<<



A BIT OF HISTORY

From 1923 till 1929 Nestlé produced a beautiful collectors album. In this album lots of different poultry breeds were shown including Langshan, Brahma and Leghorn.



SCRAMBLED HARD-BOILED EGG?

Have you ever enjoyed a scrambled hard-boiled egg? Take the Golden Goose Egg Scrambler for a spin and serve up a perfectly scrambled egg - without cracking it open!

You place a raw egg, secure the two sides and then pull the handles to use centrifugal force to scramble the egg inside the shell. Within seconds, you'll create a beautiful golden egg when boiled.



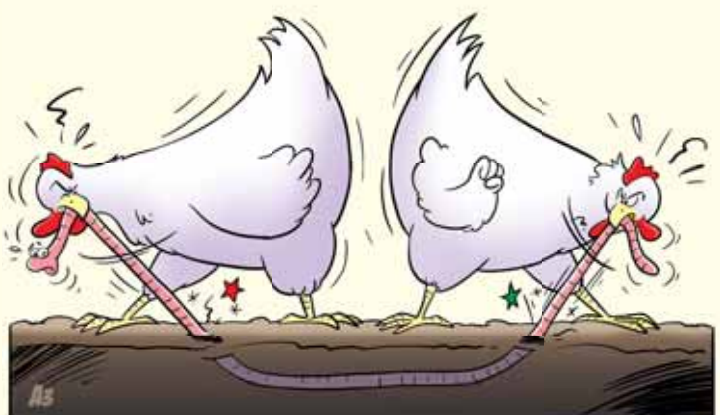
Available via www.vat19.com

No more picking floor eggs?




PoultryBot (left) was a research result (Farm Technology Group, WUR). ColLEGGtor (Livestock Robotics) is a prototype of its successor. These are examples of mobile robots that may navigate autonomously in the house in the future to collect floor eggs and prevent them.

CARTOON



This is why chickens in the wild spend 50% of their time foraging for feed...



New poultry house for the
Fuchsberger family

Mother and daughter invest in their family based broiler breeder business

At the highest point in the province of Wels-Land in Austria, 450 metres above sea level, you can find the village Pichl bei Wels, with a state-of-the-art project. Last year the Fuchsberger family extended their farm with a new poultry house that has a capacity of 12,000 broiler breeders.

The poultry farm is run by mother and daughter Fuchsberger. The farm, close to the river Danube, has been in the family for 250 years.

Thirty years ago, they started keeping broiler breeders. The first house is now about 20 years old and can accommodate 11,000 birds. A new house with a length of 135 metres and a width of 14.5 metres, completed last February, has 12,000 bird places.

Making plans

The design and construction of the new poultry house did not happen overnight. Based on the family's years of practical experience, a wish list was drawn up, together with the representative of the breeding organisation. They visited several poultry farms in the Netherlands, Germany and Austria to talk to poultry farmers about their experiences with different systems. Daughter Theresa Mölzer-Fuchsberger: 'I coordinated the whole project. It was a lot of work and took a lot of energy, but I did it with passion and I really enjoyed it.' The Fuchsberger family was especially looking for a different feeding solution, as the weight of the males in the first house was difficult to manage. 'The males had too easy access to the hen feeding system and that could not be prevented in that system', according to mother Annette Fuchsberger. The breeding organisation suggested a chain feeding system for the hens, combined with the Matrix feeding system from VDL Agrotech for the males. 'This combination ensures a calmer and much smoother course of the feeding time, something which is very important to us', Annette Fuchsberger says. In addition, by

using a special grill, the hen feeding system is not accessible to the males and this keeps the males at the right weight.

Choice of laying nest

The choice for the nests was easily made: 'In the existing house we have been working with the Premium+ laying nest from VDL Jansen for 20 years to our full satisfaction. At that time, we were the first in Austria to buy these nests and it is not without reason that we choose this nest again. Minor repairs or replacing a nest mat are sometimes necessary, but we have never had to replace a nest in those 20 years!' For this complete concept, nests and feeding system, they could turn to the company Gürtner, the local VDL dealer.

Construction of the new house

In March 2021, the construction of the new house started. At the end of July the house was erected and in September Gürtner could start assembling the equipment. The Premium+® laying nests with slats were placed in the middle of the house with 2 drinking lines per side along the laying nests, in combination with four winchable chain feeders with 8 hoppers. On the left and right side of the house: the Matrix male feeding system. Via the FlexBelt®, the eggs from both houses are collected and transported to the grading area. This conveyor belt has the ability to achieve steep ascents and descents. Fuchsberger: 'We are very happy that this project is finished and we are looking forward to the arrival of the new animals. We hope that everything will work out as we had planned and we we look forward with full confidence to the first results!' <<<



Daughter Theresa Mölzer-Fuchsberger and her mother Annette Fuchsberger: 'We are very happy and are looking forward to the arrival of the new animals.'



Data-driven broiler farmer

Bart Janssen has 90% fewer foot pad lesions

Bart Janssen from the Dutch province of Drenthe took over the baton from his parents at the age of 21 and opted for an increase in scale. Today, he has 500,000 broilers in his 13 houses. Bart Janssen is a modern poultry farmer and always looking for ways to improve. And so he also immersed himself in drinking water management.



Bart Janssen: 'Each chicks gets exactly the amount of water it needs.'

You have to stay alert all the time

BART JANSSEN

In order to monitor the broilers properly, Janssen Poultry Farm is fully automated: 'All 13 broiler houses are equipped with a climate and feed computer. I control these from my office or from my phone. I always have insight into all relevant house data and in case of deviations, I receive a warning through an alarm system.'

In addition, a specialised company in England monitors 24/7 the generated data from all houses online in a repeating 90-minute cycle: 'Especially deviations in

the water intake are an essential indicator for potential problems in your stall.'

Own practical tests

The poultry farmer has, therefore, studied drinking water management intensively. 'Each chick gets exactly the amount of water it needs at that moment of its growth process. This has a positive effect on both animal welfare and production.' The choice for the system was not an obvious one. Janssen extensively tested systems and nipples from several manufacturers in >>>



feed, litter, ventilation and water basically under control. When we started using the low flow nipples there as well, the litter remained dry. The number of foot lesions has thus been reduced by 90 per cent. We also have our ammonia emissions at a low level now.'

I always have insight into all relevant house data

his houses. Impex came out of this test as the winner. 'With their low flow nipples, you can still accurately control the water flow, even with low water pressure. Therefore, you have maximum influence on water intake and much less spillage.'

90% fewer foot lesions

Reduction of spillage is very important these days, Janssen points out. 'Legislation has been tightened enormously. Houses must be really dry and all foot lesions are counted. Do you have too many? Then you may incur fines or be forced to reduce the number of birds per square metre. Some years ago, we had a relatively moist litter area at the end of the crop in two houses, even though we had the

Continuous innovation

Nevertheless, Bart is not just sitting back. On average, he expands or makes a change every three years, and the next one is one that he himself finds exciting. 'Broiler meat is a popular product with a relatively low cost price and low environmental impact, but changing consumer preferences and retailer influence are shifting demand. The regular broiler will disappear in the Netherlands in the next five years. That is why I am now orienting myself on the switch to less intensive production, in accordance with the requirements of the Better Life quality mark (1 star).'

Sparring partner

It is a transition that will ultimately also have an impact on drinking water management in his poultry houses. Although you are never finished in that respect, Janssen knows. 'You have to stay alert all the time. We do that by monitoring data, close observation and also sparring with our technology partners.'

'I am glad that I decided to completely switch to Impex's low flow nipples. In the end, it not only gives me better feed conversion but also more convenience. Because we now work with the same drinking water systems almost everywhere, the houses are easier to manage.' <<<

Piet Simons

start of a new century?

About one hundred years ago, Wageningen University was founded (1918) and the 1st World's Poultry Congress was held (1921) in the Netherlands. This was not a coincidence. Science was driving progress in agriculture. And we all benefited from that. Especially progress in genetics, hatching, nutrition, health, housing and processing are at a high level at the moment. But can we increase this level? Until the 1980s, research was an important part of the triangle of government, extension and research that developed the poultry industry in the Netherlands. The government pulled back a bit and the industry took over. A lot of research is now aimed at finding practical answers to problems the poultry industry faces. This is rather a short term view and fundamental research has often been neglected.

If I look on a global level, I see the Chinese government playing an important role in initiating research and developing the sector. Will China become the centre of expertise in the near future?

Globalisation and international collaboration have brought us a lot of good. But the most recent development shows us that it is fragile. COVID-19 showed us that international travel and trade cannot be taken for granted. The situation with Ukraine - the 'breadbasket of Europe' - and Russia - provider of fossil fuels - shows us that too much dependency is risky. We need a certain level of self-sufficiency. Not only for commodities, but also in the area of science.

Furthermore, I see that trust in science is declining. To a point that scientific evidence is regarded as 'just an opinion' or even fake news. Isn't the position of poultry science at stake here?

Should we go back to governmental funding of research in the Netherlands? Maybe partly, but the current situation has made Europe stronger and this is an opportunity. I say let's look at Europeanisation as opposed the two extremes of globalisation or nationalism! Europe already invests in research, but often on rather political issues, not fundamental research. And don't forget the poultry industry, they should play an important role in this as well. Scientific stagnation means decline and others may take your position! Are we on the brink of a new era? And will 2022 be the start of a new century for scientific progress? I hope so!

Piet Simons is
Ambassador of
Dutch Poultry
Centre and Past
President of World's
Poultry Science
Association



Jan Kuijpers at his own hatchery. With the future poultry processing they will have the whole production chain in one farm.
PHOTO: ELLEN MEINEN, AGRIO

All-in-one misting

for healthy and affordable broilers

The best broiler production system offers a safe and healthy environment for the birds as well as the workers. Providing the right temperature and relative humidity creates perfect conditions to perform. That is what Jan Kuijpers of Kuijpers Kip in Grubbenvorst, the Netherlands, successfully managed to do with a unique misting concept. 'We can rely on it and trust that we will benefit from it.'

Kuijpers Kip is a one-of-a-kind broiler farm. The building design is different from what you would expect to see when you think of a poultry farm. More than 15 years ago, the Kuijpers family started to think about growing broilers affordably and sustainably, keeping animal welfare and important environmental issues in mind. Through close collaboration with a number of institutions and poultry system manufacturers, they succeeded to build an exceptional farm. It consists of a hatchery and four attached broiler houses for 64,000 birds each. They are in the first phase of the dream to build a self-supporting broiler farm on 9 hectares of land. In the near future, three more similar units will be built,

By using very fine water droplets, the room temperature and humidity can be controlled and in case of fire the fogging system can reduce damage.

PHOTO: WIEBE VAN DER SLUIS

including a small (4,000 birds per hour) processing plant and possibly a bio-reactor.

Born inside the house

The broilers are kept in the so-called patio systems (Vencomatic) in which eggs are placed on hatcher trays at day 18 of incubation to allow the chicks to hatch inside the poultry house. 'This allows the birds', as Jan Kuijpers explains with enthusiasm 'to have an excellent start without transportation stress and gives them access to feed and water right after birth. The farm is covered with 1,500 solar panels and does not use any gas heating. The desired temperature needed for the

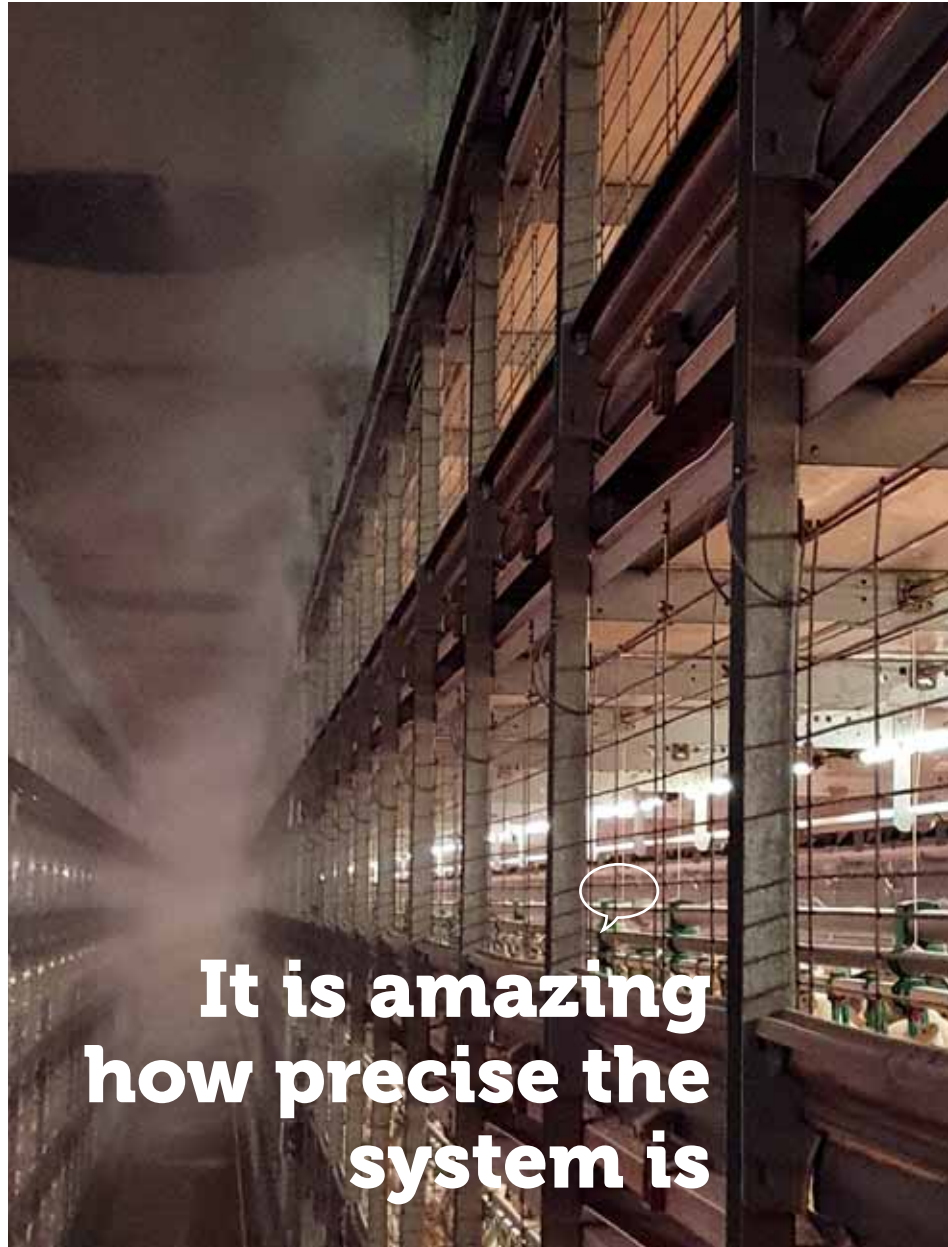
system

young birds comes from the birds in the adjacent houses by means of a clever heat recovery system. This system also cleans the air, which means no dust, no microorganisms, and only a minimum of ammonia (97% reduction) and carbon dioxide.' The proud poultry farmer states:

'This puts our farm on a par with the farms with the lowest environmental impact in the world.'

Multi-functional misting unit

Jan Kuijpers strongly underlines the original idea of sustainable production of affordable poultry meat for consumers who have little money to spend. 'This requires efficiency in all segments of the operation, including environment control outside and inside the buildings', says Jan. 'We therefore installed a unique system made by MJ-Tech to cool the houses. With the same system we can control the humidity in the



It is amazing
how precise the
system is



The modern architecture of the Kuijpers Kip farm buildings.

PHOTO: ELLEN MEINEN, AGRIO



Jurnjan van den Bremer of MJ-Tech fog systems demonstrates how it controls the climate conditions in the houses.

PHOTO: WIEBE VAN DER SLUIS

house, soak the house before cleaning and protect the birds and the facility in case of fire. Where in traditional farm houses each of these functions often require separate systems, here there is only one. It consists of one stainless steel water line with high pressure misting nozzles (0.3 mm) for cooling and humidity control and one with 1mm nozzles for soaking and fire control. The central unit is connected to a climate computer to assure sufficient cooling by using a minimum of water and energy. The small high pressure droplets (5-10 micron) prove to be efficient with consistent temperature and humidity control without causing wet spots or wet birds. Experiences tell us that this system also excels in reducing dust and smell (ammonia). 'When the birds have left the poultry house, the misting system can be used to automatically soak the house with a minimum of labour and water use. Besides, it proved to be very efficient in preventing and minimising damage caused by fire. In case of fire, a smoke detector sets off an alarm and automatically turns down the



Since the stocking density is high in this system, climate control is even more important. PHOTO: ELLEN MEINEN, AGRIO

ventilation rate to 30 percent after three minutes. Fifteen minutes after the alarm, the misting system will automatically be switched on. This delay provides sufficient time to personally check what is going on to avoid damage in case of a false alarm or to take adequate measures to stop the fire. This may include filling the connected houses with a mist to stop the fire from spreading. The mist reduces the oxygen level and suppresses the flames.' 'It is amazing how precise the system is', Jan concludes. <<<

An excellent start without transportation stress and access to feed and water right after birth

Breakfast from Colombia



Columbia



20 minutes

INGREDIENTS (for 6 persons)

8 large eggs
pinch of salt, add to taste
1 tablespoon of olive oil
2 red onions, thinly sliced
2 medium bell peppers (any colour) seeded and diced
2 medium tomatoes seeded and diced
2 cloves of garlic



For more egg recipes:
www.mmmeggies.nl

Breakfast the South American way. Nice, hot and filling!
Scrambled eggs with a bite and a twist! With all the vegetables added it looks very attractive. Give it a try, start your day the Colombian way!

Preparation:

1. Thoroughly whisk the eggs with a little salt. You want to whisk them quite well, as more air in the eggs makes for a fluffier, lighter end result. And you do want your scrambled to be fluffy!
2. Heat the oil over medium heat in a frying pan (non-stick or well-seasoned cast iron work well).
3. Add the onions and bell peppers and saute for 2-3 minutes.
4. Add the tomatoes and garlic and saute for an additional 2 minutes, taking care to stir gently to avoid crushing the tomatoes.
5. Reduce the heat to medium/low. Season the vegetables in the pan with a pinch of salt.
6. Pour the eggs over the vegetables and stir constantly, but gently.
7. Once the eggs have just set (about 2 minutes), remove everything from the pan and serve immediately - preferably with black beans, maybe a piece of toast, and hot chocolate or coffee!

Enjoy!



Smell reduction from wet manure handling

A good relationship with your neighbours is a must to keep your business going. Expanding cities or even villages force poultry farmers to take measures against dust and smell. It prompted Agricola las Rastras in Talca, Chile, to install a manure drying installation to eliminate the smell from their manure composting site.



Rafael Fuenzalida: 'Manure drying helped us to solve smell issues and brought down transportation costs of the finished product.'

Agricola las Rastras' egg farm 'Huevos de Talca' started in 1970 as a family business with 9,000 laying hens. From that date on, it has grown constantly, becoming one of the most modern and important poultry companies in Chile with close to one million layers. Originally, three key elements were defined that are the basis of the company's success: their own distribution of the product, flexibility, and delivering an excellent product. The success also came with problems: what to do with the manure? Rafael Fuenzalida, production manager: 'Dumping in a pit is no solution, due to local regulations, smell, responsibility for the environment and the feeling that you're wasting valuable nutrients for crops and vineyards.'

Design a plan

Years ago, the company already decided to invest in composting fields a few kilometres away from the farm. However, it did not solve the odour issues, as it basically moved the problem to another area. Nevertheless, the composted manure was well accepted by nearby farmers and they were prepared to pay an acceptable price for it. 'Composting is expensive and takes a lot of work and at the end of the day you still

have huge volumes of composted material', says Rafael. 'Meanwhile we looked at the possibilities of a bioreactor, but without governmental support that was far too expensive. So we had to find an alternative. We got information from an egg producer 150 kilometres south of Talca about a green solution offered by Dorset Green Machines from the Netherlands. They were drying the manure and their smell issues were gone. The end product kept its nutritional value, was reduced in weight and volume, which reduced transportation costs. This convinced us.'

No smell, less weight

The result was a three-step plan of which the first step was taken early last year. Next to the existing composting units, a manure drying installation - with an input capacity of 81 tonnes of wet manure and output of 24 tonnes dried product - was built and in operation before the summer. 'We processed one third of the manure, while the remaining still had to be composted. The results of the drier are amazing', Rafael declares. 'The smell is gone and the transportation costs, due to the loss of water, are much lower. But now the summer is over we will see what the winter months will bring. The technology allows us to dry the manure at a relatively





The results are amazing

low temperature by using outside air as much as possible. Only when it is too cold and the humidity of the outside air too high, additional heating is required. The installation has a biomass burner that will hopefully minimise heating costs. Additional heating by using gas will, with the current high gas price, not be an option. We hope for the best and can still make use of our composting fields.’ Rafael underlines that he knows that the



The first of possibly three dryers is in operation and meets expectations: dry manure and no smell.

Dorset drying system is working perfectly, but that he has to learn how to operate it with a minimum of energy input during the winter. ‘Time will tell, but we remain positive since poultry litter is very much appreciated by crop farmers and vineyards although the price they are prepared to pay is low (\$30 per tonne). Due to the global oil and gas crisis, this may change a bit since artificial fertilisers are becoming more and more expensive.’ <<<



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Dorset Green Machines

Dorset Green Machines is a leading designer and manufacturer of systems for processing organic waste. Dorset's conveyor belt drying systems are most suitable for drying poultry manure and convert it into valuable products. Drying significantly reduces storage and transport costs. The dried product can be sold as valuable organic fertiliser or as fuel for green energy or it can be processed further. Other specialities of Dorset are air cleaning, sludge drying and the use of residual heat.

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Gasolec

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Microfan has over 30 years of experience in the field of stable automation. The company develops, produces and delivers control and measuring systems, serving the intensive cattle and poultry farm sectors worldwide, via qualified vendors and OEM-customers. These state-of-the-art systems, with advanced software for climate-, water and feed control, animal weighing and egg counting, help farmers get the best stable returns.

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Thermobile Industries BV is specialised in the production and sales of mobile and stationary space heaters. Thermobile heaters are used for various applications in poultry and pig farming, for crop drying, barn heating, as well as in construction and industrial branches. The innovative space heaters stand out by their mobility, user friendliness, solid construction and the good availability of components. Clients very much appreciate Thermobile for its professional worldwide service.

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TPI-Polytechniek is a supplier of polyurethane components for agricultural ventilation systems. The company produces a wide range of air inlet valves and ventilation chimneys in its own modern production facility in Poland. Polyurethane is a strong and durable material and it guarantees optimum insulation. Due to its wide variety of products TPI-Polytechniek can offer a suitable solution for every situation.

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TS Group Holland B.V.

TS Group Holland is an independent service provider in the agricultural sector and other industries. A part from its worldwide technical services, the company offers project management, site management, supervision, maintenance and climate monitoring on new and existing sites. We have expert knowledge of climate control systems and electrotechnical installations, and focus on sustainable technologies. Customer service is a core value for TS Group Holland.

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VOSTERMANS VENTILATION

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Vostermans Ventilation has a long-time experience in the production of fans for the agricultural sector. The various types of fans are resistant to the aggressive environment in poultry houses and can continuously meet the air flow requirements: most fans are warranted for 3 years.

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Effective disinfection during the vacancy results in better growth. That sounds logical, but it has now also been proven by research. Willem Dekkers (Royal GD) and Flamur Llapashtica (ForFarmers De Hoop) are working on better monitoring systems to reduce virus pressure in the poultry house.

How successful was the cleaning? And can anything be improved? The vacancy period is hectic, you are under time pressure, you are stressed. It is possible that unconsciously you may cut corners or spend less time on and pay less attention to something. 'Therefore, always make a good plan', says Flamur Llapashtica. Earlier in his career, he worked on poultry house cleaning and disinfection, salmonella control protocols, and general biosecurity. Nowadays, he is a feed consultant, but cleaning and disinfection still has his specific interest. 'Cleaning is perhaps more important than disinfection. By cleaning well and consistently with plenty of water and using a long-lasting, foaming cleaning agent, you can achieve a great reduction in bacteria. This makes the effect of the chosen disinfectant automatically more effective.' But how do you know how clean the barn is?

Field study

After cleaning and disinfection of the house, highly resistant viruses can still remain in porous materials, which cannot be checked with the Rodac method. GD launched the VIR check in 2019 to determine the virus pressure in the poultry house. Willem Dekkers, poultry veterinarian at GD explains: 'Together with enthusiastic veterinarians in the field, we set to work. For six months, we sampled a large number of flocks and collected the technical results. We compared these with the VIR check scores. It turned out that by reducing the virus

pressure in the house, the flocks performed better. We can see an improvement in feed conversion, mortality and significantly better growth: up to 100 grams extra growth over the entire cycle.' Together with ForFarmers De Hoop and veterinarians, the VIR check has been improved.

'It appears that the intestinal viruses studied peak about five to six days after infection. So if you find them in the chicks, it means that they must have become infected when they entered the house. Chicks that have to defend themselves against it in early life have less energy left to grow. Moreover, they are also more susceptible to other germs, because the immune system is already busy.'

Disease control programmes

GD has been active in monitoring and controlling specific diseases for over a century and has developed many animal health programmes for the Dutch livestock sector. 'In this way, we contribute to controlling, reducing and in some cases even eradicating and obtaining accreditation for specific diseases. We are now applying this knowledge and experience in the development of international disease control programmes, in line with the situation and regulations in the relevant country.'

Poultry programmes focussed on antibiotic and mortality reduction, *Salmonella*, *Mycoplasma gallisepticum* and *M. synoviae* support farm managers and their veterinarians to minimise the risk of a disease outbreak, improve animal health and increase profit. <<<




Flamur Llapashtica (left) and Willem Dekkers (right).



100 grams

extra growth
in a clean house

Always make
a good plan!



It's
fantastic,
we have a
lot of fun!

mmmEggies GIRL

Female poultry farmers from all over the Netherlands are passionately promoting Dutch eggs and the poultry sector. 'Wonderful to improve the image of the egg together', says Petra Smits, chairperson of mmmEggies. The egg is back as a staple in the healthy eating guideline of the Dutch Nutrition Centre.

They are well known in the Netherlands, the mmmEggies with their pink blouses and pink eggs. 'The beauty of it is that female layer farmers are promoting eggs together with other layer farmers from all over the country with various housing systems. Everyone does what they are good at, and together we stand side by side for Dutch eggs', says Petra Smits, besides chairperson also layer farmer in the Dutch province of Limburg. 'It's fantastic to do. We have a lot of fun,



The mmmEggies: Dutch female layer farmers who promote the egg. Petra Smits is the first woman on the right leaning against the trailer.

POWER

love to start a conversation and finding a connection', according to the enthusiastic chairperson.

Spontaneous idea

In 2014, five female layer farmers spontaneously got the idea to start promoting Dutch eggs in collaboration with the Blij met een Ei foundation (Happy with an egg). Eight years later there are thirty mmmEggies. 'I heard of the initiative and thought: I want to be a part of that', tells Petra.

With girl power, the mmmEggies make an active, open and honest contribution to the image of Dutch eggs as a healthy product and the image of Dutch food producers.

'Our vision is that the egg is a food of high value that contributes to a healthy life for people and that it is produced in a responsible way.'

An egg is OK every day: many consumers are not aware of this because of the old cholesterol advice. An egg is superfood, tasty and affordable for everyone, and the Dutch egg sector is among the best >>>

I want to be a part of that

in the world. 'We spread this message with female passion and a lot of power', explains Petra Smits. This gives the female poultry farmers a lot of energy. 'The reaction of consumers are nice. Our boiled, pink eggs are well known: everybody wants it. On trade fairs and events this leads to interesting discussions.'

Image improvement

Much has been achieved in the past eight years: the Cacklingpot with questions and facts about chickens and eggs, eggs at the National School Breakfast, the egg in the major food groups, egg promotion at consumer fairs and on social media. At the Nijmegen's 4Days Marches they hand out boiled, pink eggs to the participants. On World Egg Day an egg hunt, donating eggs to the Food Bank. The consumption is increased from 199 eggs per capita in the Netherlands in 2014 to 204 in 2019. 'But that can be higher if we look at consumption in other countries', Petra laughs.

Ambitious

There now is an ambitious group of women who are full of exciting ideas. The board turns these idea into action hands them to working groups. 'Now, for example,

there is an education working group that develops educational materials that we can use on the farm and in the classroom', explains Petra. Every female poultry farmer is welcome, either as a mmmEggie or as an assistant mmmEggie who helps with local or larger activities. And next?

The world is waiting!

A study trip to Canada is planned for 2023 to exchange ideas with fellow poultry farmers.



Blij met een Ei

The Blij met een Ei foundation and the mmmEggies work closely together. Poultry farmers and other companies active in poultry farming support the mmmEggies financially through the Blij met een Ei foundation. Much of the material is available free of charge to schools and supporters. And the work is all voluntary. **The challenge is to work together to reach the consumer in an effective way and to make it known that eggs are an enrichment for a healthy life.** Doing nothing is not an option. For € 200 per year, a poultry farmer contributes to PR for eggs. For other companies, there is a bronze, silver or gold sponsor package. 'Together we are strong!' concludes Petra Smits. <<<

The mmmEggies handing out pink boiled eggs to participants of Nijmegen's 4Days Marches.





PHOTO: JOOST DUPPEN

COLUMN

André Steentjes

Migrating birds: please stay away from our farms!

In many European countries, the poultry sector suffered from several waves of High Pathogenic Avian Influenza in the last two decades. The Netherlands, which had been free from HPAI since 1927(!), in particular experienced a huge epidemic of Avian Flu in 2003 starting in a very poultry dense region: 255 outbreaks, 30 million birds killed, 86 human infections, in one case fatal for a poultry veterinarian. Total costs: €500 million euro.

Hard lessons were learnt about how to detect the first outbreak as soon as possible to prevent the virus spreading from farm to farm and how to preventively cull large amounts of birds in a poultry dense area. Early warning became the new keyword. After this disastrous outbreak in 2003, the Netherlands stayed free from Avian Flu until 2014. But then, further outbreaks followed year after year, also in other European countries. In the winter of 2021-2022, a large part of Europe experienced a new wave of outbreaks.

Research shows that migrating birds flying from the North of Europe via 'the East Atlantic flyway' in a southern direction after summer are the source of HPAI on commercial poultry farms, even on farms with very strict biosecurity measures. In particular some species of ducks, geese and swans that prefer to hibernate in wetlands with mild winters and, consequently, adequate forage, can act as reservoir and potential vector of the Avian Influenza virus.

Since HPAI not only threatens poultry businesses almost every year, but is also a risk for human health, vaccination of commercial poultry is now considered in the European Union.

But also when new vaccines have shown efficacy and safety under field conditions, trade partners have to agree with this approach of disease control and have to be convinced that vaccination does not cover up the presence of HPAI virus. In the meantime, strict biosecurity, monitoring for LPAI, and early detection of HPAI are essential tools to prevent disastrous epidemics worldwide.

André Steentjes
is poultry veterinarian
at Veterinair Centrum
Someren

'Broilers are great fun, but sick broilers are a disaster'

Erik Weel has a broiler farm in the province of North Holland in the Netherlands. A real family business with two poultry houses containing 150,000 broilers each. To keep the birds healthy, they started using in ovo vaccination a long time ago. Together with veterinarian Kristof Van Mullem, he discusses the effects of this vaccination method.

Kristof Van Mullem:
'At the end of the day, this is very profitable for a poultry farmer.'



Erik: 'If you keep broilers, you know you could get Gumboro problems one day. And so we did. This requires a lot of labour input, which is scarce at the moment. Just take 3,000 chickens out of your poultry house with an average weight of 2kg. Not a fun job and bad for your back and arms. Above all, you want healthy birds. My vet pointed me to in ovo vaccination. Because we want to continue innovating, we took up the challenge and to this day without regrets.'

Kristof: 'What we see and hear in the field is that companies that vaccinate in ovo with Innovax have no or hardly any Gumboro and NCD problems. In addition, poultry farmers tell us that the rejection rate at processing is dropping. At the end of the day, this is very profitable for a poultry farmer.'

Erik: 'The production can be planned better with in ovo vaccination. After on-farm hatching, we vaccinate against IB on day 0, so we then have completely vaccinated chicks that can start growing immediately.'

Protection against three diseases and lower rejection rate

Kristof: 'The big advantage of in ovo vaccination is that you prevent three diseases with one action at the hatchery.'

Poultry farmer Erik Weel: 'I see the importance of preventive healthcare only increasing.'

PHOTO: HENK RISWICK

Broilers are top athletes! You have to support them optimally for the best end result

With Innovax-ND-IBD, you protect the birds against Gumboro and NCD. As an extra gift, you get Marek vaccination for free! Very nice, especially when you keep slow growers.'

Erik: 'A regular broiler farmer obviously doesn't need to vaccinate in ovo, but we will not go back. The rejection rate is down and the ease of working is enormous! In addition, job satisfaction increases enormously; a great advantage.'

Kristof: 'The classical vaccines cost almost as much as in ovo vaccinated chicks, and the profit of in ovo is often higher for a poultry farmer.'

Erik: 'Nobody wants a high rejection rate at the end of the cycle at the slaughterhouse. Since we started with in ovo vaccination, the rejection rate has decreased structurally by about 1%. Especially rejection because

of polyserositis is down. This makes a big difference at the end of the broiler cycle.'

Predictable and smoother growth

Erik: 'Together with MSD Animal Health, my vet and the feed supplier, we are always looking for new solutions. We are open to invest and to innovate. We now have a more predictable and smoother growth (chickens leave at 41 days, weighing 2.8 kg), more uniformity and no vaccination reactions.'

Kristof: 'As a pharmaceutical company, MSD is expected to develop solutions that also benefit animal welfare. Because fewer vaccinations need to be administered and you, therefore, have fewer vaccination reactions, in ovo vaccination fits in well with this vision. We are happy with the in ovo developments. The chicks benefit a lot from it.' <<<



adVee

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www.advee.nl



Agraplan Farmaca / Plantema Veterinarian Group

The Plantema Veterinarian Group has decades of experience in poultry veterinary, veterinary medicine and natural liquid feed. The group consists of 3 companies: Plantema Veterinary Centre (veterinary practice) Agraplan Farmaca (feed and water medication) and Medpharma (veterinary medication). The independent services also focus on the international market: the experienced staff of Agraplan and Medpharma can assist poultry farmers all around the world.

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7773 NN Hardenberg
The Netherlands
+31 (0)523 27 11 12
info@plantema.eu
www.agraplan.nl



BioChek

BioChek is a veterinary diagnostic company that specialises in diagnostic kits for the poultry industry and automated solutions for veterinary laboratories. As an experienced manufacturer with a product range of 21 different ELISA tests, BioChek gives poultry producers important information about the health status of their flock. Since its foundation in 1997, BioChek supplies its clients world-wide from its manufacturing facility in the UK and its commercial head office in the Netherlands.

Fokkerstraat 14
2811 ER Reeuwijk
The Netherlands
+31 (0)182 58 25 92
info@biochek.com
www.biochek.com



Intracare

Intracare offers poultry farmers disinfection-, feed- and veterinary medicine programmes aimed at antibiotics reduction. All products meet the highest quality demands of the farmer and the latest European legislation, and contribute to an improvement of the animal health and an improved profitability of the farm.

Voltaweg 4
5466 AZ Veghel
The Netherlands
+31 (0)413 35 41 05
info@intracare.nl
www.intracare.nl



Kanters Special Products BV

Kanters is the specialist in liquid nutritional supplements to support animal health and prevent the use of antibiotics. Kanters develops, manufactures and supplies nutritional supplements, cleaning and disinfection agents, chickpaper, heat inhibitors and hoofcare products for (intensive) livestock farming.

De Stater 32
5737 RV Lieshout
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+31 (0)499 42 56 00
info@kanters.nl
www.kanters.nl



Kepro

From its location in the Netherlands, Kepro has been producing veterinary pharmaceuticals for livestock since 1972. Our products can be found in 85 countries worldwide. Our mission is to help every livestock farmer make sure their animals remain healthy, wherever they may be in the world. To fulfil this mission, we develop veterinary solutions with our customers' changing demand in mind.

Maagdenburgstraat 17
7421 ZA Deventer
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www.kepro.nl



MSD Animal Health

MSD Animal Health is the global animal health division of Merck & Co, New Jersey (USA). The company offers veterinarians, farmers and governments the broadest portfolio of veterinary pharmaceuticals, vaccines and animal health services. MSD Animal Health offers almost 50 different poultry vaccines for both broiler breeders and laying hens and broilers.

Wim de Körverstraat 35
5831 AN Boxmeer
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www.msd-animal-health.com



Royal GD

Teaming up for animal health, in the interest of animals, their owners and society at large is the mission of Royal GD. 500 employees work on the health of farm and companion animals every day, together with farmers, veterinarians, governments and the industry. In one of the largest veterinary laboratories in the world we perform over 5 million laboratory analyses annually. Our expertise and knowledge have earned GD international recognition, particularly in the poultry industry.

Arnsbergstraat 7
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The Netherlands
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www.gdanimalhealth.com



The Schippers Group

The Schippers Group is a family owned company. It is one of the largest suppliers for intensive livestock farming globally with 14 offices, activities in 40+ countries and more than 450 employees. Today, The Schippers Group encompasses multiple brands all united in their mission to eliminate AMR. We do this by developing knowledge, services, and products to improve hygiene in livestock farms around the world.

Smaragdweg 60
5527 LB Hapert
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+31 (0)497 33 97 87
info@theschippersgroup.com
www.theschippersgroup.com



Van Eck Industrial Hygiene

For over 20 years Van Eck Industrial Hygiene is a house-hold name in the field of disinfection, rodent control and pest prevention for the poultry industry. As market leader, the company has developed innovative hygiene and cleaning methods such as Thermo Kill, floor burning, Turbofog and use of silica. To further help poultry farmers Van Eck also organises workshops and seminars on pest control, salmonella prevention, cleaning, disinfection and the preparation of quality programs.

Sonniuswijk 43
5691 PD Son en Breugel
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www.vaneckbv.nl



Veterinair Centrum Someren

Veterinair Centrum Someren

The Veterinary Centre Someren is a multidisciplinary veterinary practice, which works on the basis of animal species, to guarantee the right care for pets and other animals. The Veterinary Centre Someren provides care for various different animals and also has its own laboratory.

Slievenstraat 16
5711 PK Someren
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www.vc-someren.nl

Real-time monitoring of process & product quality

'With this investment, we can take the company to the next level'

As the world population keeps on growing, so does the consumption of eggs. This asks for innovative total solutions that allow egg producers to increase capacity while needing fewer hands, with the focus on product quality and food safety.

Each day, egg producers face more challenges. Why? Well, on the one hand, the number of types of eggs is increasing. Nowadays you don't only have organic or free-range eggs but also eggs from alternative housing, eggs with a healthy image (like omega3 eggs), and animal welfare eggs (like the German brand Ohne Kükentöten). As a result, the number of products is exploding, and with it the logistics puzzle for egg producers. At the same time, it is

becoming more difficult for them to find qualified staff. Automation and the use of big data to improve efficiency numbers are proven tools for egg producers to overcome their problems.

Inventor Job Mosterd

One of the egg producers who faced these challenges is DA Hall & Co, one of the largest poultry farms that supply eggs all over Australia. Mr. Don Trefz, General Manager of DA Hall: 'In 2011 we first came across Moba in our search for a new egg grader.' And at Moba, it is all about the egg. This started exactly 75 years ago when founder Mr. Job Mosterd invented the first egg grader.

Since 2011, DA Hall has continually been an early adopter of innovations, resulting in high levels of efficiency on the grading floor.

Full of praise

Over the years, the grader has consistently been updated with features, such as iMoba, a cloud-based app that automatically collects the data the egg grader produces and gives a quick reference dashboard and





Increased demand for eggs requires innovative solutions, like the MR12 case packer, that allow egg producers to increase capacity.

We were very impressed with the production output and the reliability

DON TREFZ, GENERAL MANAGER OF DA HALL & CO.

insightful graphics within seconds. Mr. Don Trefz is full of praise: 'By using iMoba, we have improved our Overall Equipment Effectiveness by 5%. We are now able to monitor the performance of the equipment and the quality of the eggs in real-time, which has given us an edge in identifying both negative and positive changes in the production process.'

Acquisition of more units

It was a logical step for DA Hall to acquire the new generation of case packers as well. Don Trefz: 'After the first two MR12

case packers were installed, we were very impressed with both the production output and the reliability. It exceeded our expectations so we didn't have to think twice about ordering two more units.' 'The installation was completed without any loss of production. And we saw improvements overnight with double the output capacity. With this investment in robotics, we can take the company to the next level.' <<<



History of a game changer

Fred de Vos: 'We wanted to get the deboner up and running as fast as possible as the biggest competitor of Meyn wasn't sitting still either.' They ran and tested a competing machine that also generated a great deal of interest. Orders had already been committed, so there was no time to lose. 'We had to get to work, which is why Manufacturing quickly produced a Rapid unit that was installed and tested at Waldron. What's more, a busload of Tyson VIPs came to see it in action. They wanted to see the Rapid with their own eyes – and they were immediately impressed', Fred continues. This visit led to the first orders for two locations: New Holland (2 units) and Carthage Mississippi (6 units).

Many problems at the start

The decision to install six new barely tested systems of such a huge size was, in a way, a major gamble. However, they couldn't wait, because otherwise the competitor would gain ground. 'That's why we simply went for it.' It did not always go smoothly in the beginning. 'We had problems with toothed belts, encoders that broke down and carriers that seized up. We had to use large hammers to rework them and get everything up and running again.

Things weren't wrapped up with a bow and presented to us – we had to work 24/7 and made a lot of modifications in a very short period of time', Fred explains. There were planeloads of Meyn employees from all parts of the company flying to the USA. 'Along with containers full of parts, boxes with product carriers, attachments, springs and pins. You name it.'

The Rapid breast deboner was officially launched on 16 May 2007. However, it all started back in July 2003 with the story of Greg Spencer. In those days, he was the decision maker for new investments for seven Tyson plants. Greg saw a video detailing the advantages of the Rapid and was impressed. Fred de Vos, senior design engineer at Meyn was involved in this project and shares his experiences.



The first machines were everything but a huge success...

'Anything to declare?'

'When one of our young mechanics went to the USA for the first time, he had countless boxes of parts to take with him.' Unfortunately, those boxes ripped open on the luggage belt on arrival, and the parts ended up scattered between the suitcases. As the young mechanic tried to retrieve everything, a customs officer approached him and asked: 'Anything to declare?'

Dutch pragmatics, Dutch success

Due to the performance parameters not being clearly defined, the Rapid was ultimately unable to meet Tyson's expectations. The project was not successful, and all six Rapids were returned. The whole project almost led to a bankruptcy of Meyn. However, the decision to embark on this adventure with Tyson meant that the Rapid project continued to have legs and wasn't shut down prematurely. 'In the end, it brought us a great deal of success,' concludes Fred.

500 units sold

Today, the Rapid Plus is the most advanced unit available. It has a modular design, can process 7,000 breast caps or breasts with backs per hour, removes back meat, processes full or half chicken fillets, and can be configured to handle tenderloin. In 2018, the 300th unit was sold to the US company Perdue. In 2022, the 500th was sold by our Friesian salesman Aize Land, produced in Oostzaan under the supervision of Marco Koning (son of one of the Meyn founders) and installed at Salisbury, UK. It is expected that the Rapid will continue to be successful for a long time to come. <<<

Fred de Vos,
senior design
engineer at
Meyn.

*The adventure
brought – in the
end – a great
deal of success*



In 2022, the 500th was sold.



Egg of Columbus

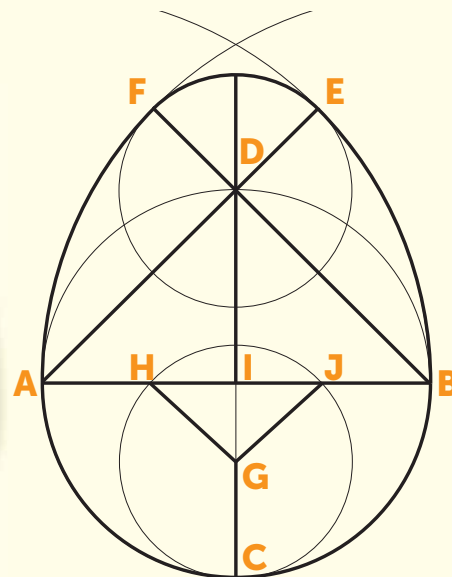
As you all know: birds hatch from eggs.

How many of these birds can you make out of this egg?

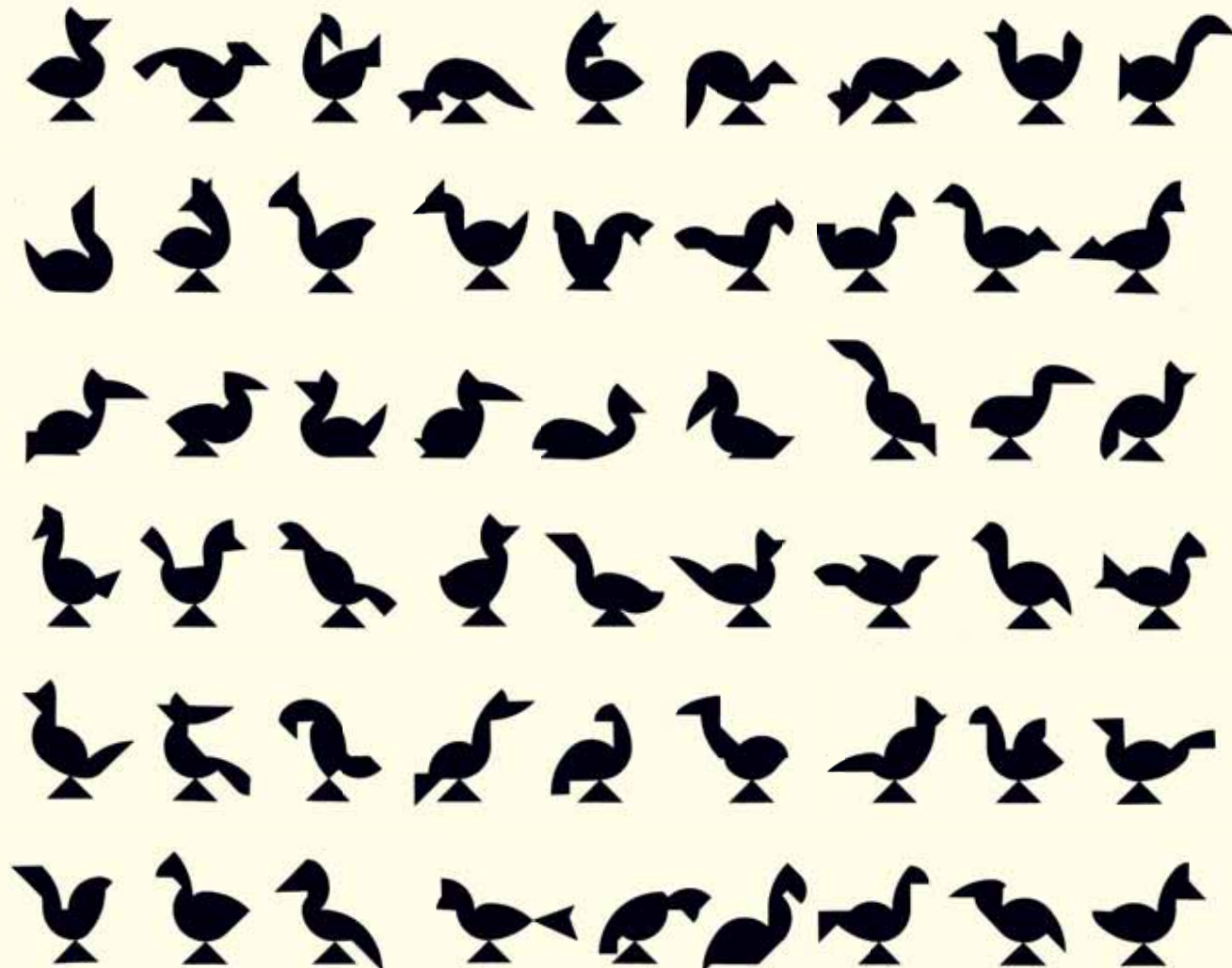
The traditional Chinese tangram is a dissection puzzle consisting of seven flat polygons, called tans, which are put together to form shapes.

The objective is to replicate a pattern (given only an outline) using all seven pieces without overlap. The puzzle was invented in China around the late 18th century.

The Egg of Columbus is a very specific tangram puzzle consisting of an egg shape divided into nine pieces by straight cuts. The goal of the puzzle is to rearrange the pieces so as to form other specific shapes, as in a tangram. The earliest known examples were produced by Richter, a German toy manufacturer in 1893.



For the solutions; see page 98.



To make the puzzle

See image on the left page. First draw the basic circle. Then draw a horizontal centreline (A-B) and a vertical centreline (C-D). Extend this line a little. Draw diagonal lines from A to D and B to D. Also extend these lines. Now draw two circle parts using A as the centrepoint and A-B as the radius. Stop where it crosses the diagonal lines (E). Repeat on the other side using B as the centrepoint and A as the end to reach F. Draw a circle with D as the centre and D-E as the radius. Use this same radius to draw circle G-C. Now define the final points: H, I and J. Transfer the image to wood and start sawing!



PHOTOS: FLOOR VAN SCHIE



**To do all this stuff
is incredible and
beyond anything
I could ever dream of**

SCOTT SECHLER



100% commitment to produce only premium chicken products

US premium poultry processor Bell & Evans sells its premium products mainly on the domestic retail market. Always pursuing the highest quality product, Bell & Evans' new greenfield facility in Fredericksburg is no exception. Owner Scott Sechler about his new processing plant: 'Every machine purchased was meticulously selected to achieve superior quality, sustainability, efficiency, traceability, safety and humane handling of our chickens.'

W

While designing a new facility through a global pandemic wasn't ideal, it played a big role in how the engineering itself all took place. A 3D version of the facility was put together so all aspects could be talked through, point by point. From wiring to drain placement to equipment design and layout, nothing was missed during the engineering phase, making the building phase much smoother. 'To do all this stuff is incredible and beyond anything I could ever dream of,' says Scott Sechler. The new plant is Sechler's vision of how chicken processing should look. **Automation replaces the most labour-intensive jobs where it doesn't make sense to have human labour.** Marel has fully equipped the processing plant, including two processing lines, each with a capacity of 8,400 birds per hour, but prepared for even higher speeds.

Humane treatment

Chicken well-being is a priority in Bell & Evans' 100% Rule. For more than 20 years, their chickens have been raised without antibiotics and within a unique, low-stress management system from egg to farm to processing and transportation. Bell &

Evans' standards significantly exceed those of USDA Certified Organic. The company focuses on animal well-being during transport from farm to processing plant. Its farms are located less than an hour's drive, on average, from the processing facility and chickens are transported in state-of-the-art live bird transportation systems.

Minimise stress

As Bell & Evans' aim is to handle its chickens with the utmost care, the company purchased the ATLAS automated transport system. This system eliminates the use of forklifts and minimises stress during unload. The reduction of noise, light, sound and movement offers a smooth transition from the trailer into anesthetization. As humane anesthesia was high on the priorities for the new processing plant, it was an easy decision to opt for multistage CAS SmoothFlow anesthetization. Scott Sechler: 'This plant is completely built from the standpoint of animal welfare to be the best ever. The human welfare to be the best ever. And the quality we produce to be the best ever.'





Air chilling

Another key point of difference is air chilling. Other US poultry processors produce chlorinated water chilled chicken or use a mix of water and air chilling. Since 2005, the company has utilised 100% air chilling, a unique first in the industry. 'The reason why is obvious,' Scott Sechler notes. 'Air chilling is a significant contributor to the tenderness and flavour of the meat as compared to the conventional water chilling system. **Our 100% Air Chilled method means no need for chlorinated ice water, so chickens' natural juices never get diluted or replaced. Air chilling nets a better product.** Besides that, it also reduces handling and environmental waste.' Air chilling is Bell & Evans' way to transform US food processing and provide another level of quality to the consumer.

European-like

After air chilling, products are distributed and cut up, including a Q-Wing solution for wing part selection. Scott Sechler mentions wings and how everyone wants them, but they get easily damaged. With this technology, he's expecting '20% to 40% more grade A wings.' Unique to the US are the automated in-line thigh and drumstick deboning systems, already an upcoming trend in Europe. 'In fact, we're a European-



Air chilling nets a better product

minded company that's located in the United States.'

Traceability from farm to fork

Bell & Evans also commits 100% to traceability. Right from entering the processing plant until packaging, each chicken can be traced back in the process down to which flock and which farm it came from. The Innova food processing software not only ensures this traceability program but will also connect all solutions throughout the plant, collect and analyse data and offer plant staff the information they need to run highly efficient operations. 'Marel is the only company in the world that has all the pieces figured out and in place together to offer a truly remarkable poultry processing system that I'm proud to use in our new processing plant,' concludes Scott Sechler. <<<

Chicken souvlaki with yoghurt dill sauce



Greece



60 minutes

INGREDIENTS (for 4 persons)

4 chicken fillets
Pepper and salt
Skewers

For the marinade:

6 tablespoons of olive oil
4 garlic cloves, pressed
Juice of half a lemon
2 tablespoons of white wine vinegar
2 tablespoons of dried oregano
2 tablespoons of fresh flat-leaf parsley, finely chopped

For the sauce:

300 ml of yoghurt
10 g of fresh dill, finely chopped
Zest of half a lemon

Preparation:

1. Grate the lemon and keep the zest. Then cut the lemon in half.
2. Combine all the ingredients listed under 'For the marinade' in a small bowl. Also add salt and pepper.
3. Cut the chicken breasts into cubes and stir into the marinade. Leave the cubes to marinate in the fridge for at least half an hour.
4. Make the sauce by combining the yoghurt, dill and the zest of half a lemon. Season with pepper and salt.
5. Place the (wooden) skewers in a bowl of water so that they do not burn during frying. Thread 4 to 5 cubes of chicken on each skewer.
6. Grill the chicken skewers under the contact grill, in a grill pan or on the barbecue until cooked through. Serve with bread, cucumber and the yoghurt sauce.

The chicken souvlaki with yoghurt dill sauce is now ready, enjoy!



kiprecepten.nl

For more chicken recipes:
www.kiprecepten.nl

No waste!

Turning processing waste into valuable proteins

For many years, remains of poultry processing were seen as waste, but today intestines, fat, feathers, bones and blood represent a valuable contribution in creating extra income from poultry production. Recycling has become a magic word.

Before 2015, Myronivsky Hliboproduct (MHP), the largest Ukrainian and second-largest European poultry production company, considered processing animal by-products as waste and treated them as such. A few years ago, it installed a fully integrated rendering facility with which they, before the Russian invasion, generated additional profits. These profits were possible due to the improved quality of their products and stepping up to the premium quality segment of key products: meat and bone meal and fat. Meanwhile, a sharp rise in prices for vegetable proteins and oils supported an increase in the price for animal proteins and fats. This makes rendering important for the company. Vitalii Adamchuk, Technical Director of MHP's Poultry Department, says that the company constantly focuses on improving processes by optimising, reconstructing, and modernising equipment and production lines in order to reduce costs. It does so in close collaboration with the rendering division of Mavitec Group from Heerhugowaard in the Netherlands.

High yields

MHP's management is aware of their responsibility for the environment and the economy of the whole operation. Adamchuk states: 'We have to take care of poultry production and processing as well as the requirement for quality feed.' 'In the market there is', according to Maxime Guzev, Head of MHP's Processing Products Export Department, 'a widely held opinion that the quality requirements for pet food (dogs, cats) are not fundamentally different from the requirements for the nutrition of young children. This forces the company to perform for the best.' One of the key problems, however, is delivery time. 'To get super-premium quality feed, it is very important to minimise the time from receiving the waste to delivering the finished product.' Adamchuk proudly states: 'At MHP, this time lapse is a maximum of six hours, which no company





Converting biomass into renewable energy

Rising energy prices are leading to increased interest in converting biomass into renewable energy and creating additional revenue streams. Mavitec developed an innovative technology that converts various kinds of manure into green gas and high-value EcoChar, a valuable by-product of the gasification process. Gasification ensures a smaller environmental carbon footprint and will be one of the answers to future energy needs. Gasification is a new way of solving manure issues and offers a lot of advantages such as volume reduction, production of renewable energy and reduction of CO₂. The produced heat can be used as energy or hot air and the valuable by-product EcoChar can be used as soil improver.



in the world can match. This allows us to get premium yields, which means that rendering in some cases yields higher margins than ready-made chicken.' That is why rendering is not waste handling but nutrient management, contributing to the desired circular economy.

For large and small operations

Mavitec is a Dutch designer and producer of high-quality recycling technology for

the rendering industry. It turns non-edible by-products from the meat industry into high-quality proteins and oils for use in pet food, animal feed, and in the oleochemical and/or the pharmaceutical industry. Maco van Heumen, CEO of Mavitec Group: 'The way of processing determines the value of the end products. We provide solutions for high-end processing companies but also for small abattoirs.' <<<

Vitalii Adamchuk, Technical Director of MHP's Poultry Department.

 **No company in the world can match this**

Egg recipes

by Mikael Lindqvist

As we all know very well, eggs are one of the most versatile ingredients known to man. They can be enjoyed and prepared in many different ways, used in baking, desserts, starters, main courses, in emulsions... The options are endless. At Villa BlauwHemel, we use a lot of eggs. Starting with a perfectly cooked egg for breakfast and ending with a rich dessert after dinner.

One maybe less common combination in our part of the world is eggs with curry, which is an amazing combination. Since asparagus are in season, I will share a secret with you: how to make our 'Asparagus à la Villa BlauwHemel.' And I have also got a really easy recipe for an indulgent chocolate dessert for you.



Mikael Lindqvist, the chef of Villa BlauwHemel, and Ruwan Berculo of VIV Worldwide.



Villa BlauwHemel in Diever, province of Drenthe.

Chef Lindqvist's curry powder

INGREDIENTS

3 tablespoons of coriander seeds
3 tablespoons of fennel seeds
2 teaspoons of Sichuan pepper
2 teaspoons of whole cumin
2 teaspoons of black peppercorns
2 teaspoons of allspice
2 teaspoons of mustard seeds
1 teaspoon of cloves
1 teaspoon of white peppercorns
1-2 star anise pods

This is a milder and sweetly fragrant curry powder that I have developed over the years. This curry powder goes especially well with eggs, vegetables, and fish (also in desserts, such as my chocolate mousse). All ingredients are available at your local oriental supermarket, but you can, of course, substitute it with your own favourite curry powder.

Preparation:

1. Roast all of the whole spices in a pan (without oil) on medium heat while stirring with a wooden spoon until the spices start 'popping' (making a crackling sound).
2. Remove them instantly from the pan to avoid burning and let them cool completely.
3. Then add the ground spices:
2 tablespoons of ground turmeric
2 tablespoons of sweet paprika powder
0.5 teaspoon of ground cinnamon
0.5 teaspoon of ground cardamom
4. Grind all the spices very finely in a coffee grinder or a mixer. Run the ground spices through a fine sieve to remove any bigger parts.

Asparagus à la Villa BlauwHemel

Easy chocolate mousse

INGREDIENTS

(Serves 4 as a starter, double the recipe for a main course)

500 g of peeled fresh white asparagus

2 hard-boiled eggs, finely chopped

150 g of butter

2 teaspoons of curry powder

Salt to taste

Preparation:

1. Boil the asparagus in generously salted water (also add a couple of tablespoons of sugar) for about 5-8 minutes, depending on the size.
2. Let them dry for a while on a kitchen towel while you melt the butter in a pan (maybe the same pan as you used to boil the asparagus, but dry it well).
3. Add the curry powder and the eggs, stir quickly and add the asparagus. Stir carefully so as not to crush the asparagus until all of them are covered in butter.
4. Place the asparagus on a warm plate and scoop the butter-egg mix on top of it. Wine recommendation from the chef: a Riesling Feinherb (or medium dry) from Germany.

TIP

If you don't have a saucepan high enough for asparagus, boil them in a frying pan. You need less water, it goes faster, and this way all the asparagus are evenly covered in water.



INGREDIENTS

(Serves 4)

1 egg

200 ml of whipping cream

200 g of chocolate (dark or milk, depending on how dark you want it)

1 teaspoon of curry powder

A pinch of salt

This mousse is very easy to make and nice and airy thanks to the whisked egg whites. This mousse is quite a stiff one and does not contain a lot of sugar. If you want it fluffier, add a bit more cream, and if you want it sweeter, just add a bit more sugar.

Preparation:

1. Heat up half of the cream and the egg yolk in a pan while continuously stirring until it thickens just a bit, but do not let it boil.
2. Mix in the chocolate instantly (in order for the egg not to overcook and separate) and add the curry powder while stirring until smooth.
3. While letting the mixture cool to room temperature, whisk the other half of the whipped cream until you get a Greek yoghurt-like consistency.
4. In another bowl, whisk the egg whites with a pinch of salt until stiff. The salt helps the egg whites to become firmer, as we don't have any sugar to whisk with it and it also cuts nicely into the flavours.
5. Mix the whipped egg whites and cream together and add the cooled chocolate mix. Mix everything together (with a spatula) until even, but do not over mix or use too much power as that will whisk out the air bubbles (and we do want our mousse fluffy).
6. Pour into a bowl or small serving bowls and let set in the fridge for a few hours or overnight.

One new machine provided many functional improvements

'Automation and digitalisation have helped us keep our company and staff fit and employees willing to stay.' That is how egg packing station owner Thomas Determeyer looks at his German operation. The purchase of a new egg grader/packer supported his vision.

The company Owi-Ei in Rietberg (Westphalia, Germany) grades, picks and packs approximately 600,000 eggs a day and transports them to around 80 supermarkets in the region. 'It was common to grade 16 hours a day, but now we're down to ten hours', says Thomas Determeyer. Ask him

about his new egg packer/grader and you get an enthusiastic story about processing speed, egg quality and worker satisfaction. After looking at many SANOVO machines throughout Europe, Determeyer replaced his existing Ardenta egg grader with a state-of-the-art Grader Pro 220 egg grader/packer at his egg packing station last year. Determeyer

proudly says, 'The efficiency of this machine allows us to process many more eggs, to over 600,000, in fewer hours.'

Dealing with market complexity

The German egg market is rather complex. On the production side, there is a wide variety of production systems and farm sizes, and consumer demand, too, is rather diverse. The result is a huge variation in egg input as well as output. Owi-Ei was running the grading centre with an Ardenta 12, a reliable machine but unable to achieve the increased capacity requirements. The company also wanted more focus on egg traceability, for which individual egg handling is



needed, which is supported by the GraderPro. Since the new machine has been installed, it is much easier to switch from, for example, free-range to organic eggs and between a wide variety of consumer packaging. Before the machine could be installed, Determeyer spent a lot of time together with SANOVO's development department to get all the requirements for the packer/grader working. 'Their enthusiasm and mine matched well and the result is there,' says Determeyer. 'Digitalisation not only enabled us to speed up our grading and packaging result, it also allowed us to improve data collection on each individual egg to better meet and assure our quality standards, including tracking and tracing.'

Taking care of my staff

Improving the automation process often leads to staff being made redundant. 'Not here,' says Thomas Determeyer. 'We bought the new systems in order to remain competitive because the machine is more efficient, user friendlier and easier to clean and maintain than the old one. Besides that, it ensures gentler egg handling and speeds up the work

process. **The addition of a robotic egg loader means that employees have to bend less often to load the machine and have less physical stress at the end of the day.** The packaging robot can load up to 150,000 eggs per hour and makes employees' work a lot easier. Before the machine was in operation, an employee who had to put eggs on a system had to move several tons of eggs per day.' 'The new egg grader/packer together with the packing robot and the digitalisation have shown a work-saving effect and improved the working conditions for our workforce,' states Determeyer. 'It has significantly reduced stress and the number of sick days of our employees and thus costs, but still there will be no lay-offs. We are more likely to be confronted with a shortage of employees than to be able to do without one of our highly appreciated employees.' Determeyer concludes his enthusiasm by stating that every entrepreneur has to treat their staff "wie ein rohes Ei" as the German proverb says. So to treat someone like a raw egg: with the utmost care. That is where the new egg grader/packer is a great help.' <<<



PHOTO: DIETRICH HACKENBERG

The packaging robot makes employees' work a lot easier



ABI

Even in 1923 quality and soundness were paramount in everything we did. Building on these foundations, ABI continues to develop today, as a leading specialist in drive technology, motion control, and robotics. That means continuous innovation and smart design, drawing on practical experience, and delivering impeccable products: standard or customized solutions, for new or existing systems. There is nothing we like more than developing solutions that help you to move forward.

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Foodmate

Foodmate, founded in 2006, has positioned itself in a short and intensive period as a leading player in the international poultry processing equipment manufacturing industry. Foodmate mainly focuses on developing efficient and cost-efficient cut-up and deboning solutions.

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GI-OVO

GI-OVO designs, creates and produces logistic solutions as well as packaging for the egg industry. With the support of local partners, we have a global focus. Our customers are egg graders, processors, hatcheries and retailers. Our brands are: EggsCargoSystem® - HatchCargoSystem® - Egggyplay® - Ceep® and Pallet&Co®. Quality, sustainability and customer comfort have our main focus. All the systems and packaging's we design offer maximum protection to the eggs.

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Marel

Are you looking for advanced automation of your poultry processing processes while improving your end product quality? Achieving higher efficiency and yield, but also cost reduction? Marel's modular systems are extremely suitable to grow along with your company. Regardless of the desired production capacity and your type of end products, Marel has the most effective, reliable, and profitable solutions for you.

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www.marel.com



Meggson

Meggson (previously Cobot Automation) has been involved with machine construction since 1997. With a team of enthusiastic professionals, we are committed to creating compact and easy to use automation products for efficient egg handling. We fully focus on the niche that we call placed eggs. That is where our strength lies. Based on a clear vision and ambition.

Buys Ballotstraat 4
6716 BL Ede
The Netherlands
+31 (0)318 57 60 65
info@meggson.com
www.meggson.com



Meyn Food Processing Technology

Since 1959 Meyn Food Processing Technology is active in the field of innovative systems for poultry processing equipment that is sold in more than 100 countries. This world market leader delivers stand-alone machines and fully-equipped processing lines equipped with various speeds and adapted to all bird sizes. Meyn's customer promise: quality systems that deliver top-level productivity with a minimum of labour.

Westende 6
1511 MA Oostzaan
The Netherlands
+31 (0)20 204 50 00
sales@meyn.com
www.meyn.com

MOBA

Moba

The Moba Group is the recognised leading manufacturer of egg grading, packing and processing machines. The company offers highly innovative and reliable total solutions for the egg industry that meet the high standards of today's market and can be adapted to your specific requirements. Moba has a strong global service network that is available 24/7 and offers maintenance, training and (technical) support when needed to ensure that you will get the most out of your eggs.

Stationsweg 117
3771 VE Barneveld
The Netherlands
+31 (0)342 45 56 55
sales@moba.net
www.moba.net



Peer System

The Peer system is an efficient and animal-friendly total solution for catching, transporting and unloading broilers. The entire logistical process, the method of collecting in the broiler house until the delivery in the slaughterhouse, is done by machines.

't Hoogvelt 8
5721 VW Asten
The Netherlands
+31 (0)493 84 09 83
info@peersystem.nl
www.peersystem.nl



Poultry Machinery Joosten

Poultry Machinery Joosten (PMJ) is an equipment manufacturing company, specialised in duck processing technology. The Dutch family business offers a wide range of standard and custom-made machines for all phases in the processing of waterfowls. It offers its highly specialised services to customers worldwide.

De Veken 246
1716 KJ Opmeer
The Netherlands
+31 (0)226 35 88 88
info@pmj.info
www.pmj.info



SANOVO Technology Netherlands

Robust, reliable, simple and user-friendly. These are the trademarks of the machines produced by SANOVO Technology Group. After all, the client's packers and sorters must never come to an unwanted standstill. But one can conquer the world with machines that operate according to your wishes. SANOVO does so since 1956.

Ambachtstraat 4
7122 MP Aalten
The Netherlands
+31 (0)543 47 38 68
netherlands@sanovogroup.com
www.sanovogroup.com



Viscon

For more than 35 years Viscon Group specialises in automation systems and machinery for the horticulture and food processing industry. Since 1998 Viscon Hatchery Automation offers specific automation equipment for the poultry industry, for large and small hatcheries. Such as equipment for egg handling, egg transferring, chick processing and waste handling. With the automation and logistics solutions by Viscon, customers can efficiently and reliably improve their business performance.

Mijlweg 18
3295 KH 's-Gravendeel
The Netherlands
+31 (0)78 673 98 98
sales@viscon.eu
www.visconha.eu



Elburg Foods

Producers and suppliers of convenience Chicken Breast Fillet Specialties for the Foodservice, QSR, Halal retail and Food-to-go markets. Elburg Foods is a self-sufficient, independent, private label+ producer of high quality Chicken Breast Fillet Specialties. With more than 40 years of experience in chicken product preparation.

J.B. Broekhovenstraat 6
8081 HC Elburg
The Netherlands
+31 (0)525 69 00 09
info@elburgfoods.eu
www.elburgfoods.eu

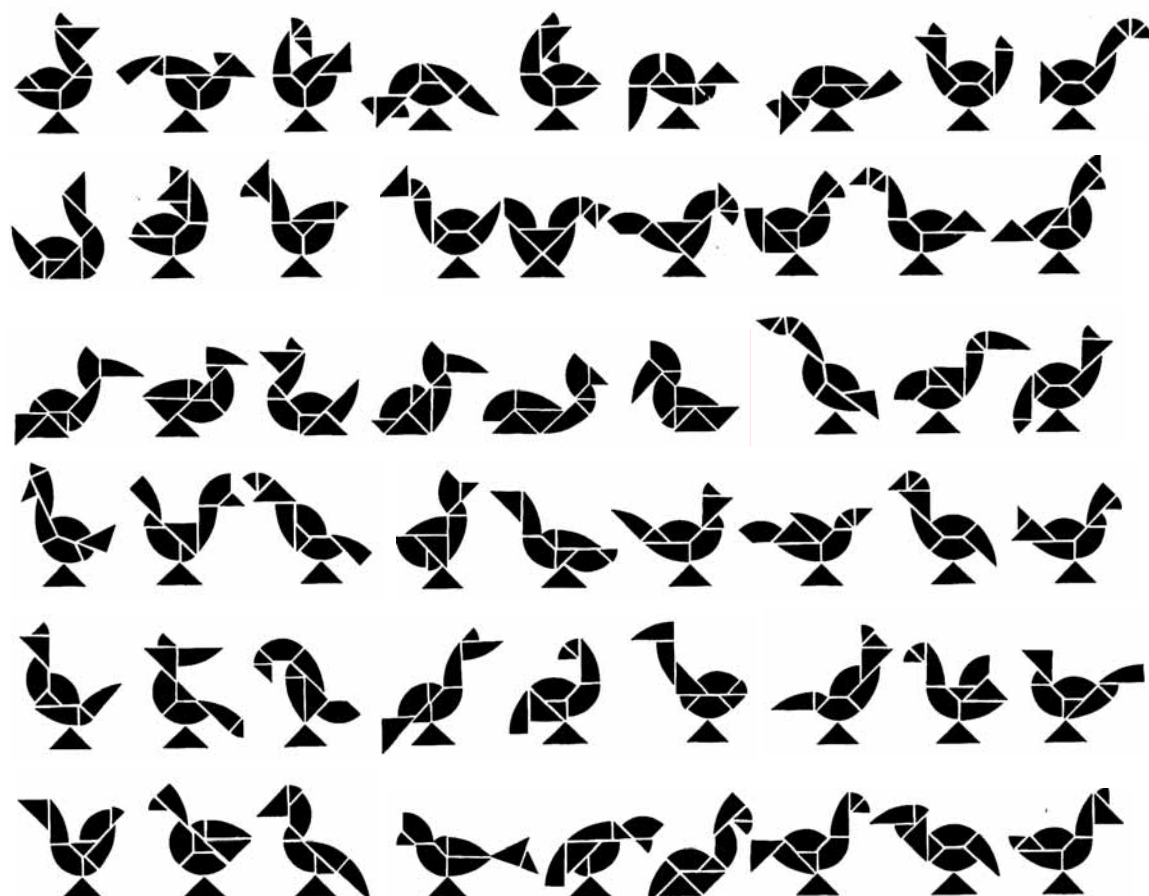
MAVITEC

Mavitec

Mavitec B.V. is one of the leaders in the rendering industry and specialised in designing, engineering, manufacturing and installation of high quality process systems for the recycling of organic by-products.

Galileistraat 32
1704 SE Heerhugowaard
The Netherlands
+31 (0)72 574 59 88
info@mavitec.com
www.mavitec.com

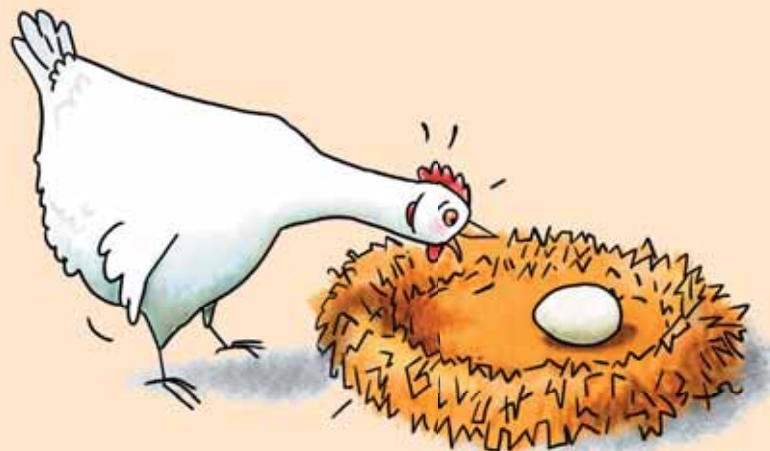
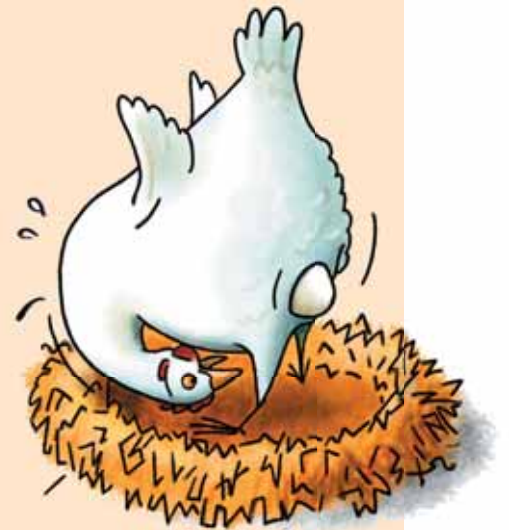
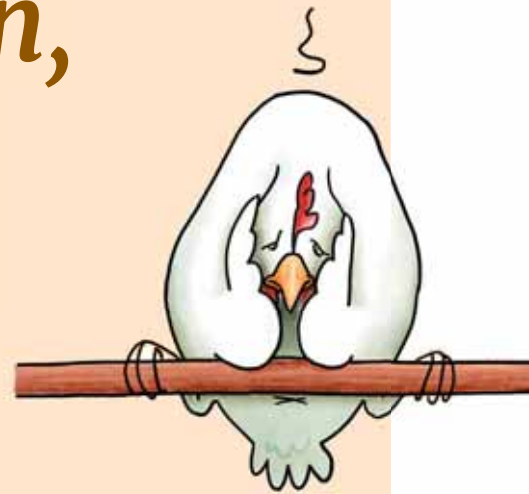
SOLUTION TANGRAM page 84



Chubby chicken,

*Laid no eggs!
Slept all day and night instead!
Slept through sun, slept through rain...
Laying eggs is such a pain...
Don't wanna make, not one egg yolk,
I'd rather sleep or hear a joke,
Don't wanna' make, not one eggshell,
I'd rather sleep, can't you tell?
Chalazae, air-cell, and albumin,
I'll take a pass, I'll be snoozin',
Making eggs, What a pain!
I'll sleep, and sleep, and sleep again!
But chubby chicken, soon 'awoke',
Felt an oval, give a poke,
An egg I made? And I feel fine!
Now I'll lay eggs, all the time!*

Chubby Chicken, Mr. R.



Turning waste water into drinking water 'Water is our most

The world is drying out and there is a worldwide shortage of water. 'We are seeing water scarcity increase. Worldwide, only 6-8 percent of the earth's surface is fresh water. We have to be careful of that. We purify waste water and turn it into drinking water', says Emiel Koster of Nijhuis Saur Industries. 'Water is an interesting field with many challenges', he says passionately.

'In conversations with poultry slaughterhouses, I explain the extent of their pollution to show the importance of water purification. The degree of pollution is a technical explanation, but that is something the slaughterhouse people understand', Emiel explains. Before water can be discharged into the surface water, water purification is necessary.

Each person produces about 60 grams of biochemical oxygen demand (BOD) per day. BOD is a measure of pollution. A slaughterhouse can easily process 20,000 broilers per hour for 16 hours a day. This results in $20,000 \times 16 \text{ hours} \times 10 \text{ litres per broiler} = 3200 \text{ m}^3$ of waste water every day. This waste water contains about 2.2 grams of BOD per litre, totalling 7,040 kg of BOD per day. This is the same as a city of 117,300 people.

'When you present these overwhelming pollution figures to technical directors and owners of poultry processing plants, it opens their eyes and they have an idea of what it means if they don't treat their waste water. That's usually how projects start.'

Expansion thanks to waste water treatment

Nijhuis Saur Industries builds plants with filter systems, chemical and biological processes. 'I visit many companies. We create suitable solutions everywhere. That is the challenge. For example, a slaughterhouse in Poland wanted to expand. That was not possible, because there was not enough water available. The customer had a choice between relocating, opening a second site, and treating and reusing waste water. We built an installation that turns waste water into certified drinking water in a number of steps. The slaughterhouse uses it for its process. A sustainable solution.'

Each step in the purification process produces waste such

Total treatment and biogasplant Poland.



precious resource'

as sludge and concentrates. 'A fermentation process can be used to generate biogas. This can be used for hot water production, for example, while the remaining solid fraction can be used as fertiliser and the thin fraction goes back to the water purification. In this way, we close the cycle sustainably.'

Awareness

'Over the 30 years that I have been creating water solutions, I have seen the mentality change. From the discharge of untreated waste water to far-reaching technological solutions. Water is a resource for the entire business process in the poultry slaughterhouse. Reuse has a value. This also has to do with the changing consumer demand for more sustainable and transparent production. I expect that consumers will eventually be willing to pay for it.'



We close the water loop

EMIEL KOSTER

Engineering

Emiel Koster has seen many technological developments. 'It's wonderful how we as a sector are constantly coming up with new innovations to purify water even better and faster. These developments continue. Climate change is having a huge impact in some areas. We are working on solutions.'

Water is indispensable

Koster sees major differences worldwide, but also many similarities. 'Different legislation creates different preconditions. The common factor is that water is indispensable. **As human beings, we consist of 80 per cent water. If you have a water shortage, you have a big problem.'**

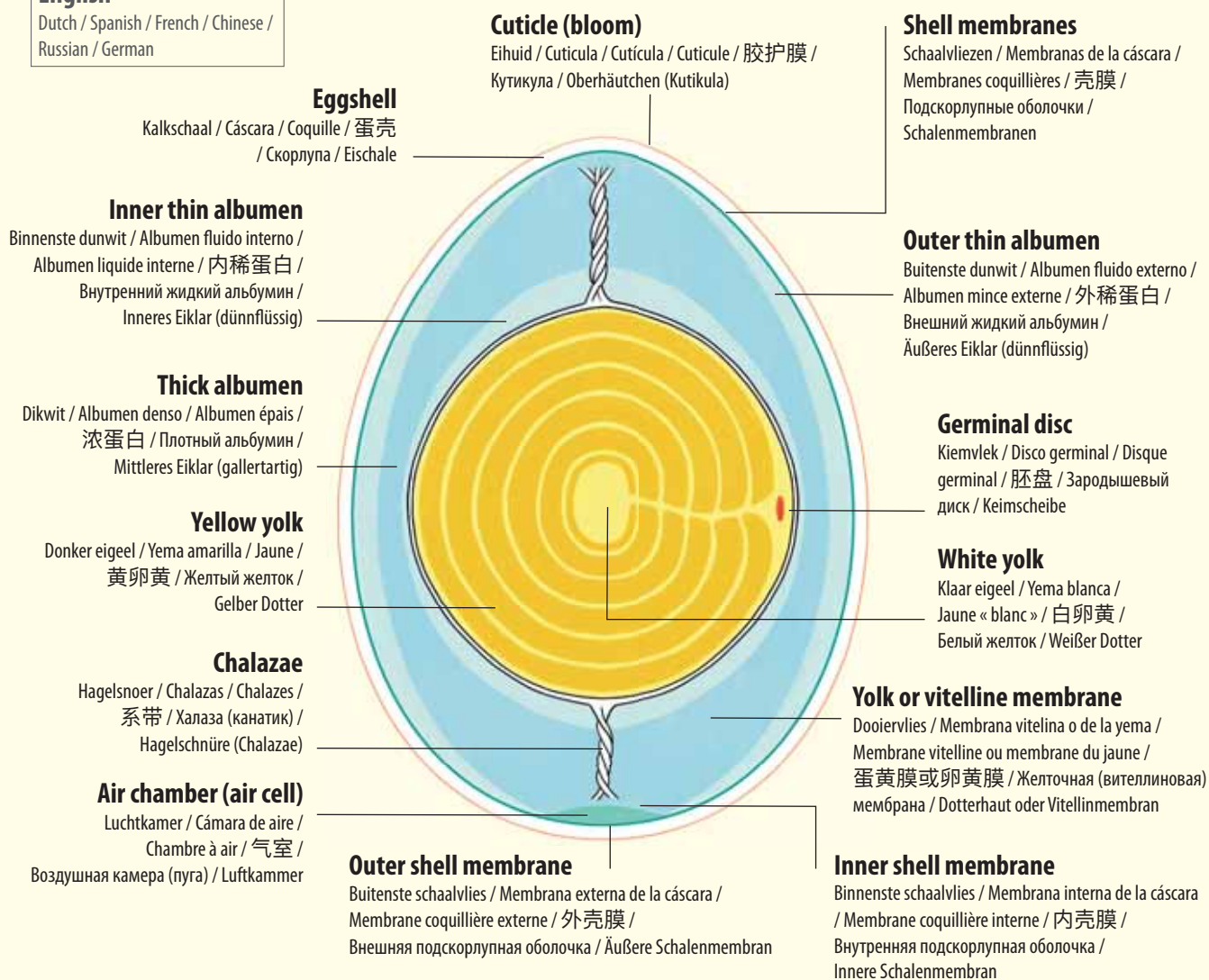
Saving water can be very simple. 'In slaughterhouses, you often see that the grid is removed from the drains and then the spraying starts. Start by sweeping up the coarse dirt and collect the solid dirt first before cleaning with water. We also guide customers in these basics; what is not in the water, does not need to be taken out. The more people see the value of water, the more they are willing to pay attention to it. And it's not just my and your water, it's also the water for your children and grandchildren.' <<<



Poultry around the globe: a multilingual business

English

Dutch / Spanish / French / Chinese /
Russian / German



Don't ruffle the feathers

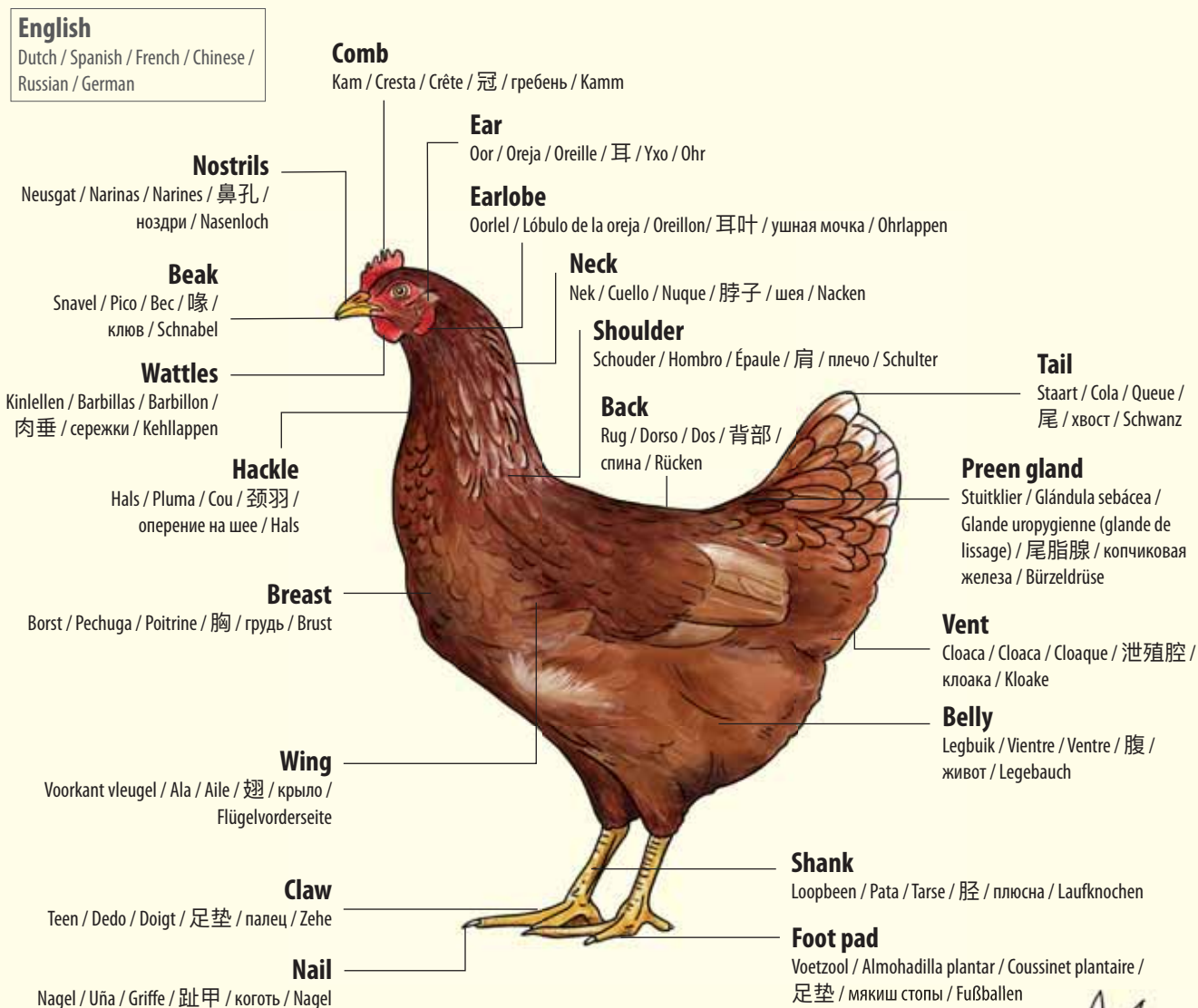
Translation often sounds easy - especially with today's arsenal of machine translation engines. It's simply a matter of replacing each source word with the corresponding target word, and that's it. Right? Wrong! Below are some examples that ruffled the feathers of 'target reader discomfort' by using sensitive terms or words that could be misconstrued or cause

embarrassment.

One notable error was made by HSBC when its 'Assume nothing' slogan was translated into the equivalent of 'Do nothing' in several countries. The company had to rebrand its global private banking operation at a cost of \$10 million and chose the more translatable slogan: 'The world's private bank'. Closer to our industry are the two

'C-words'. Cocks and chicks to put it bluntly. Far better just to stick to males and females, and day-old chicks. Apparently, a dictionary in China published in 2003 defined the Chinese word 'chicken' as either a kind of poultry, or the derogatory short form for prostitutes. And the word 'pimp' was listed as one of the meanings of the Chinese word 'duck.'

The poultry sector has an important, global presence. So your company may trade with various countries. This also means: other languages. But do you know your way around these languages when it comes to poultry terminology? In the following three pages, we will give you a helping hand.



Caution is also advised if you are considering using a slogan like 'Bringing Home the Bacon' in a campaign aimed at the Middle East. In the dairy sector a mismatch between a US ad campaign and the Spanish translation almost resulted in 'Got milk?' being rendered as ¿Tienes leche?, which means 'Are you lactating?'. American brand Perdue Chicken also

made an epic mistake when their tagline 'It takes a strong man to make a tender chicken' was translated into Spanish as 'It takes an aroused man to make a chicken affectionate'. Proof of how much can get lost in translation...

Sue op het Veld
AgroLingua translation services



English

Dutch / Spanish / French / Chinese /
Russian / German

Muscle
Spier / Músculo / Muscle / 肌肉 / Мышца / Muskel

Muscle fibre
Spiervezel / Fibra muscular / Fibre musculaire /
肌纤维 / Мышечное волокно / Muskelfaser

Myofibril
Myofibril / Miofibrilla / Myofibrille /
肌原纤维 / Миофибрилла / Myofibrille

Muscle filaments
Spierfilamenten / Filamentos musculares / Filaments
musculaires / 肌丝 / Активные и миозиновые
миофиламенты / Myofilamente

Muscle bundle

Spierbundel / Haz muscular / Faisceau de muscles /
肌束 / Пучок мышечных волокон / Muskelfaserbündel

Fused nuclei muscle cel

Celkern gefuseerde spiercel /
Célula muscular multinucleada /
Noyaux fusionnés cellule musculaire /
融合肌细胞核 /
Ядра слившихся миоцитов /
Zellkern verschmolzene Muskelzelle

Scientific name

English / Dutch / Spanish / French /
Chinese / Russian / German

Musculus biceps branchii and musculus triceps branchii

Upper arm muscle (wing 1st section) / Bovenarmspiere (vleugel 1ste lid) /
Músculos del brazo (1.ª sección del ala) / Muscles du bras (aile 1ère phalange
manchon) / 上臂肌 (鸡翅的第一节) / Мышца крыла (крыло 1-ая секция)
/ Oberarmmuskeln (Flügel erster Teil)

Musculus latissimus dorsi (anterior and posterior)

Back / Rug / Dorso / Dos / 背 / Спина / Rücken

Musculus quadriceps femoris

Thigh / Dij / Contramuslo / Haut de cuisse /
大腿 / Бедро / Schenkel

Musculus gastrocnemius and musculus sartorius, musculus tibial anterior

Calf muscles (drumstick) / Kuitspiere (drum) /
Músculos de la pata (muslo) /
Muscles inférieures de la cuisse (pilon) /
小腿肌 (琵琶腿) / Мышцы голени (Голень) /
Wadenmuskel

Musculus flexor digitorum superficialis, m. flexor carpi ulnaris, m. extensor metacarpi radialis, m. pronator superficialis

Forearm muscles (wing 2nd section) / Onderarmspiere (vleugel 2e lid) /
Músculos del antebrazo (2.ª sección del ala) / Muscles de l'avant-bras (aile 2ème
phalange, aileron) / 前臂肌 (鸡翅的第二节) / Мышцы предплечья
крыло (2-я секция) / Unterarmmuskeln (Flügel zweiter Teil)

Musculus pectoralis major

Large breast muscle (breast fillet) /
Grote borstspier (borstfilet) / Músculo
pectoral mayor (filete de pechuga) /
Muscle pectoral majeur (filet de poitrine)
/ 大胸肌 (胸柳肉) / Большая
грудная мышца (филе грудки) / Großer
Brustmuskel (Brustfilet)

Musculus pectoralis minor

Deep breast muscle (inner fillet/tenderloin) /
Diepe borstspier (haasje) / Músculo pectoral
profundo (filete interno/lomo) / Muscle pectoral
profond (filet interne / aiguillette) /
胸深肌 (内里脊/嫩里脊肉) /
Малая грудная мышца (малое филе / вырезка) /
Kleiner Brustmuskel (Filet/Lendenstück)

Mezes



Cyprus



35 minutes

INGREDIENTS (for 4 persons)

4 sheets puff pastry
4 eggs
50 g mature grated cheese
2 tablespoons chopped shallots
50 g finely chopped bacon
2 tablespoons oregano
2 tablespoons Greek yoghurt
Salt & pepper



For more egg recipes:
www.mmmeggies.nl

When in Cyprus, spoiled for choice when ordering, just order a meze: 10 to 20 varied individual dishes. Small plates with a variety of delicacies. But in Cyprus small dishes isn't a small affair! Cypriot sausages, grilled fish, eggplant, grilled halloumi, olives and small egg quiches! Egg mini quiches – a very easy recipe!

Preparation:

1. Preheat the oven at 210°C.
2. Whisk the eggs firmly. Make sure you do until the eggs are fluffy (this will make your quiches light and fluffy!).
3. After a few minutes add the yoghurt, cheese, chopped shallots, bacon, oregano and salt and pepper to taste. Mix everything together and let it rest.
4. Meanwhile butter 4 small oven dishes and place a sheet of puff pastry in each.
5. Fill the pastry with your egg mixture.
6. Place in the pre-heated oven and bake for about 20 to 25 minutes.

Enjoy!





Missing link between theory—practice

In two green containers in Barneveld, the Netherlands, millions of fly produce millions of larvae: sustainable and protein-rich chicken feed. The system is part of an ongoing transition in poultry farming, where farmers want to become more independent from protein from soy.

The setup can help reduce feed dependency. It can potentially help lower our soy imports', says Cor Duim, business manager at the Poultry Expertise Centre (PEC). The breeding unit is part of the *De kippen zien ze vliegen project*, a punny name that roughly translates as 'The chickens see them flying' (albeit with loss of pun). The project is a cooperation between PEC and Amusca B.V. that aims to develop the containers and to support knowledge sharing between students, poultry farmers and those otherwise involved in the poultry sector.

Independency is our strength

The larvae feeding unit is but one of many projects in which PEC is involved. Project manager Anne-Jo Smits says: 'We basically facilitate knowledge development

and sharing in the poultry industry. We're facilitators, enablers. We're the missing link between funding partners, research and practice.' Duim adds: 'We're involved in the early stages of innovation. **Inventors invent, companies bring those inventions to market, and we're the missing link between those stages. We do this independently. That's our strength.**' Additionally, the organisation plays a part in communicating recent poultry developments to farmers and other parties, with news articles and events.

Many topics, many partners

The innovations and inventions PEC is involved in span a broad range of topics and fields related to poultry. As Smits mentions, a majority of Dutch consumers enjoy chicken meat and eggs. 'So it's up to us and the poultry sector to satisfy that demand as sustainably as possible.' Hence, PEC runs projects concerning fine dust pollution and nitrogen emissions (Livestock Emission Reduction Practice Centre), animal-friendly housing and transport (Cool Poultry Transport), poultry red mite, and more environmentally friendly chicken feed.

With many of these projects, PEC serves as the missing link between businesses and governments or schools. The Amusca unit is set to be run by Aeres students, and Aeres researchers analyse testing results from a cooled truck from the Cool Poultry Transport project. On the Aeres campus in Barneveld, companies Avingstan BV and VDL Jansen run tests with producing protein-rich chicken feed from Black Soldier Fly larvae. Governments are also involved, such as in the Emission Reduction Centre. Some projects are just starting out, others are close to being finished. The Emission Reduction Centre has led to tangible and auspicious results. The programme has contributed to some new promising fine dust-reducing innovations now being on



**We're facilitators,
enablers**

PROJECT MANAGER ANNE-JO SMITS



Cor Duim, business
manager at the Poultry
Expertise Centre (PEC).

the national fine dust list, the directory that shows by how much a specific poultry housing system can reduce fine dust emissions.'

Never done

Smits and Duim don't foresee ever being done innovating. Not in the near future, not in the coming decades. They operate within a long tradition of innovation in the Dutch poultry sector, with internationally leading companies and renowned research and educational institutes such as Wageningen University & Research, Aeres University of Applied Sciences, and Aeres Training Centre International. And they aim to continue that tradition.

**There is no
finish line,
we're never
done**

'I foresee emission reduction remaining a principal topic for a long time,' Smits says. 'Additionally, the link between poultry farmer and consumer will become increasingly important. **There is an increasing gap between production and consumption, and people know less and less about the origin of eggs or chicken meat. That leads to misunderstandings.**

So we don't just need to innovate, we also need to communicate about what we're doing and why.'

Duim: 'There is no finish line. We've made important progress in the last years, but we're never done. That's because societal views and demands are ever evolving.' <<<

‘The general public hardly knows anything about chickens’

Rens in front of the poultry house at home in Loon op Zand. They keep slower-growing broilers.

‘What seems self-evident, not necessarily is. Not for a consumer that takes a piece of chicken on his plate for granted, nor for a young poultry farmer to assume everyone understands what he or she is doing’, says Rens van Berkel. That is why he is a member of Young Poultry People, a group of about 90 young people working in poultry farming in the Netherlands and Belgium.

Broilers do not live in cages, a laying hen is not the same as a broiler. Rens mentions some examples of people's misconceptions when it comes to poultry farming. 'I hate to hear that and want to give people accurate information. As Young Poultry People, we engage with the general public to tell the real story about the broiler industry. We learn from each other and share a passion for working in this sector. Meeting up at social and informative gatherings is also an important part of the youth platform. Because of COVID-19, this was difficult the last two years, but the WhatsApp group was an accessible way to stay in touch with each other.'

'Social media is a good way to share videos about social issues such as soy use, but also to break taboos and show how broilers are kept and how the chain from chick to chicken fillet works. Much

work. We want to show who we are and what we do, so that our followers can get an honest picture of how a piece of chicken ends up on their plate.'

Kip.kiplekker

The Kip.Kiplekker foundation started Young Poultry People in 2016 to give young poultry professionals a platform and to share their passion, especially through social media. Kip.Kiplekker was founded in 2008 with the aim of providing good and honest information about the poultry sector and its end product: healthy and tasty chicken meat. They do this by having stands at local and national events and fairs and by providing teaching material for schools. Poultry farmers are members of the foundation and the business community is a partner.

'We are an innovative sector and we can adjust



Our sector is special. I am proud of that!

more complicated than an outsider thinks. I enjoy explaining this and gaining understanding. During COVID-19, we organised an online open day that was well received. We got enthusiastic reactions', says 24-year-old Rens van Berkel.

The real story

Rens has been a member of Young Poultry People (YPP) for about four years. He grew up on a broiler farm in Loon op Zand in the Dutch province of Noord-Brabant, where his parents and grandparents are running a poulterer (poultry meat shop) alongside chickens for more than 55 years. After studying at agricultural college, he started as a farm advisor on broilers at Coppens Diervoeding.

'There I got to know Young Poultry People and became a member instantly. I find it challenging to get in touch with customers: the people who eat the chickens we raise. If they know the real story, they can form their own opinion. We are a group of young people who keep broilers themselves, or otherwise deal with broilers on a daily basis in our

quickly. Just look at the various concepts that have been developed in recent years. We use them to respond to consumer demand, but it is important that consumers see that too. I often hear that they don't know the differences. Some are just not interested; they think all Dutch chicken is safe. But many people are interested and I like to tell them how we produce chicken', says Rens enthusiastically.

To divide is to multiply

'It's quite awkward to film yourself and make yourself vulnerable. But I have learnt a lot from that and it energises me. How do I tell my story? How does it come across? How do I keep the group engaged? We brainstorm about negative reactions: how do you deal with that? I think Young Poultry People is a great platform and I recently signed up as a board member to get the enthusiasm back in the group after COVID-19, which did cause a dip, and to share more stories. Sharing is multiplying. And our sector is special. I am proud of that!' <<<



An investment in knowledge is never lost

Cheick Ahmed Ouattara

'An investment in knowledge is never lost', says Cheick Ahmed Ouattara. This twenty-six year old Burkinabé is the embodiment of 'the student who becomes the master.' He runs his own poultry farm in Burkina Faso and came to Barneveld in the Netherlands to learn about improving the health of his chickens.

Cheick Ahmed Ouattara has not only applied his newly gained knowledge at his own farm, but has also helped teach it to others. He teaches his students about a wide range of poultry-related challenges, like preventing diseases, proper construction of poultry units and chick breeding. These trainings in Burkina Faso are just one example of the projects run by the Aeres Training Centre International. Based in the Netherlands, this centre helps people, governments and companies improve poultry farming practices all over the world. Students from developing countries travel to the Netherlands, or trainings and courses are given abroad, in countries in Asia and Africa, for example. Because there is an



Listening to chicks gives you information about their respiratory health.



There is enormous demand for poultry knowledge



International student during a training.

emphasis on learning by doing and passing on knowledge as much as possible, the relatively small organisation and its partners can have a big impact. The school's campus in Barneveld is fully equipped for this, with a poultry house, an operational poultry feed factory, a larvae-based feeding unit, and much more.

Tight networks

How come a relatively small country such as the Netherlands can provide such trainings? Teus Korevaar, account manager and trainer at Aeres TCI, explains: 'The Netherlands is unique in the sense that governments, corporations and educational institutions work very closely together. As a result, we're often leading when it comes to poultry innovation.'



Teus Korevaar: 'We have tightly knit networks.'



We'll have a great impact, which will multiply in the coming decades

Collaborations such as within the Dutch Poultry Centre, with partners Poultry Expertise Centre and the Aeres University of Applied Sciences, also play a big part in that regard. 'We have tightly knit networks, which really helps when it comes to raising our profile and positioning ourselves,' Korevaar says. 'Both towards Dutch companies, but also internationally.'

Making a difference

The training centre has a history spanning almost six decades. According to Korevaar, exporting Dutch knowledge and helping poultry farmers all over the world improve

their businesses, is now more relevant than ever.

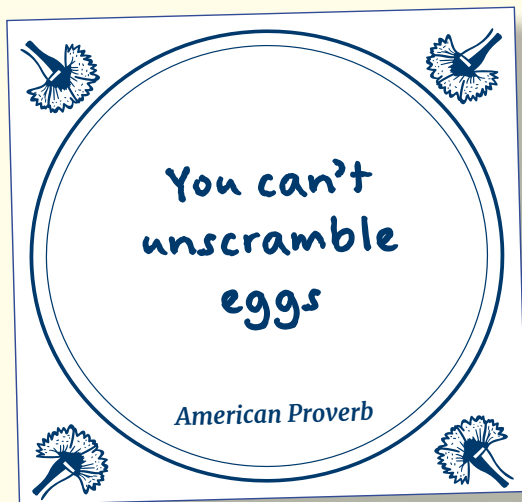
'We're facing ever bigger challenges with food production. There is enormous demand for knowledge about poultry, sustainability, animal welfare, meat and egg production, and animal feed', the trainer says. 'We increasingly understand that sustainability and animal welfare contribute a lot to economic gains and healthy business operations. So I think we can really make a difference with our activities.' On top of making this difference, it's Aeres TCI's core principle that teachings must be shared broadly. Korevaar: 'Our trainings are often twofold in nature. We focus on information sharing, but also on didactics. We want participants to share their knowledge with others.' It is exactly this approach to teaching that makes that an organisation from a country as small as the Netherlands can have a big international impact. Ouattara illustrates: 'Every year, our local partner trains approximately 400 students. Just imagine those 400 people sharing the knowledge they acquired all over the country. We'll have a great impact, which will multiply in the coming decades.' <<<

COOKING LOSS

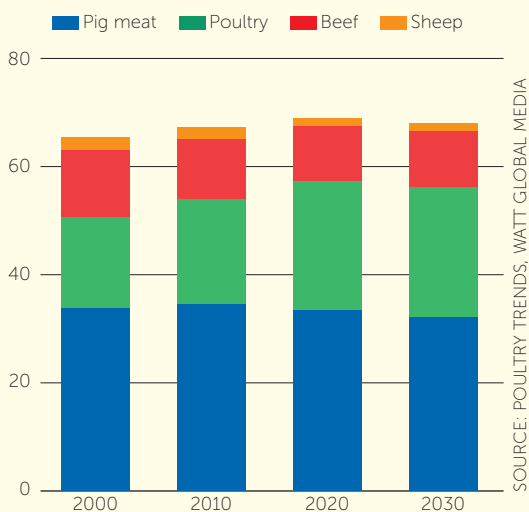
You hear a lot about that modern broiler meat is 'too watery'. But is this true?

The result of a cooking workshop in which broiler meat was prepared. The liquid that was released during preparation (cooking loss). Conclusion: a slow-growing free-range chicken releases significantly less water during preparation.

- ① Free-range chicken 59 days (max. growth 45 g/day).
- ② Slow-growing chicken 49 days (max. growth 50 g/day).
- ③ Conventional chicken 42 days (growth 60 g/day).



EU meat consumption per capita by meat type (2021)



Total consumption of meat per capita has increased slightly since the year 2000 and is expected to decrease slightly in the next decade. More interesting is the shift in types of meat: poultry meat has increased quite a bit at the expense of pig meat and beef.



Poultry plucking at the Bekebrede broiler farm and processing plant, Barneveld, the Netherlands, 1947. A huge contrast with the fully automatically processing nowadays.



A dissection gives clarity



Laura Star



Sander Lourens

Farmers benefit more from applied research than from a scientific paper

The Dutch poultry sector is world-leading when it comes to innovation. Schools, their students, and their connections to industry partners and market actors play a vital part in this.

The Dutch poultry sector is always leading when it comes to innovation. The entire world is keeping track of what we're doing here, I dare say. We were the first to diminish the usage of antibiotics, the first to use aviary systems in poultry housing on a large scale. We invented farm hatching and early feeding. That transition is just now happening on a global scale', says Laura Star about the state of innovation in the Dutch poultry sector. Star is involved in poultry innovation on

a daily basis. She's a part-time researcher at Schothorst Feed Research, and part-time Professor of Precision Feeding and Sustainable Poultry Farming at Aeres University of Applied Sciences. Her main research interests are poultry feed, health, welfare and behaviour. Her current research focuses on alternative protein sources for chicken feed, such as insect larvae. **'We have high quality research institutions and universities of applied sciences. And countless smaller and larger companies developing new innovations.** The entire

A lot of knowledge is concentrated in the Netherlands

production chain is situated here, from feed factories to producers of egg packaging and housing systems. Hence, a lot of knowledge is present and concentrated in the Netherlands.'

The Dutch climate of innovation that Laura Star describes, and the research that's at its core, are far from unnecessary luxuries. Her colleague Sander Lourens, researcher and lecturer in poultry farming at Aeres, adds: 'Food security is threatened, both internationally and in the Netherlands. This shows us that we cannot rely on other countries, but must innovate ourselves and show to consumers how we're dealing with challenges here.'

Start with the fundamentals

'For successful innovation, it is important to thoroughly understand the functioning of the entire production chain', Lourens says. Transparency and open information exchange between stakeholders, from breeding to consumer, are key. 'And you have to start with the fundamentals. That's why we're always addressing hygiene, chick quality and optimum brooding as a basis. If you get that right, the entire chain will benefit, with healthier chickens that outperform others.' Besides this, labels for products in supermarkets are becoming increasingly important. 'Poultry production chains used to be a black box, but are now becoming more transparent. Consumers are more and more aware of where their eggs and meat come from. This has implications for the entire chain.'

Applied research

Additionally, for successful innovation it is important to connect market actors and new research. Wageningen University and Research is world-renowned and leading in research about the future of agriculture, but its findings don't always find their way to poultry farmers. The applied sciences approach of Aeres can help in this regard. Lourens: 'Of course, pure scientific research is extremely valuable. But the average farmer benefits more from applied research than from a scientific paper. We provide that, by bringing innovations into practice,

together with our students.'

Connecting students to businesses

Part of the practical approach is connecting students to poultry-related businesses.

Aeres and its DPC partner Poultry Expertise Centre (PEC) play a major part in this.

When asked about the 'why' behind the cooperation between Aeres and PEC, Star says: 'We strengthen each other in research, innovation and knowledge transfer. The added value lies in enhancing each other's networks and in trying to collaborate on different topics and in different projects.'

Lourens: 'DPC is vital in connecting students and the poultry sector. Companies are eager to attract young employees, who are scarce. Our students have jobs even before they graduate. So it's better to attract students early, during their studies, with research projects and internships. Aeres, DPC and PEC help with building such connections.' <<<



Farm hatching has shown good results.



A day in the life of...

Renate Wiendels



Organising a trade fair is something you do with a whole team, but in the end individuals make the difference. One of these individuals is Renate Wiendels, Senior Project Manager for VIV Europe. She has given us an insight into what a working day looks like for her.

1

Monday morning, 7.30 a.m.

This particular Monday morning is just 78 days before this year's VIV Europe event. Exciting because tension is slowly building up before the show. Renate's day starts early, at 7.30, just after breakfast she takes her bike and starts cycling from her home to Utrecht. Nice weather, soft morning sun shining in her eyes. At 8.15 a.m., she parks her bike at the Beatrix building and goes up to the top floor of the building.



8.30 a.m.

First she checks her emails, at high speed, with VIV Europe coming closer email intensity is increasing.



10.00 a.m.

Time for the weekly 'tea-meeting' with the VIV Team. At this time before the event, it's good to meet up with everybody for a short moment. From there onto an online meeting with VICTAM and GKL Logistics. The feed milling and technology companies are based at VICTAM, in co-location with VIV Europe. The challenge is to place all the big milling equipment of Van Aarsen and Ottevanger in the Jaarbeurs building. This requires a lot of precision, in measurements, weight and timing. And a big crane inside the hall! How much does the milling equipment weigh? Can the floor carry that weight? Can all the equipment needed to build this enter the hall? Will it be finished in time? Normal stand construction starts on May 26th, but all the big milling constructions have to be in and built before that date. But it is thrilling to see the first milling equipment in place!

12.30 p.m.

Lunch time! Ready for a short walk in Utrecht? Dom tower is still standing!

2.00 p.m.

Time to be checking stand designs. The optimal design of the stands is crucial for success, for the exhibitors, but also for the VIV team. Together with Operational Manager Tessa Remers, Renate looks at the design of Intracare. It emphasises hospitality and requires some extra attention and preparation as the long stretched size is very different from the regular rectangular size. Several exhibitors have submitted their stand design. For Tessa and Renate, the job is to check it, see if it fits the requirements and the logistics. Also, is there enough power available (ampere and watt)? It is quite a job to accommodate every exhibitor's unique environment! It really is a team effort to make it all happen. But the teamwork makes the job fun, especially now after COVID-19.

Of course, there are always a lot of activities and things to do before an exhibition. This doesn't stop at the start of the show! Renate proudly shows VIV's new exhibitor portal. The portal is extremely exhibitor friendly. 'Everything can be ordered, even during the event, but', Renate stresses, 'it's best to order everything in time!'



5.30 p.m.

Time to go home again. Luckily, the sun is still shining, a nice bike ride home! And tomorrow? Tomorrow is another day, working from home this time!





Eric Hubers

Wildly attractive

The buy-out scheme for Dutch livestock farmers is to be 'wildly attractive', according to the two new Ministers of Agriculture! There will also be a huge sum of money available to buy out poultry farms in order to reduce the size of the sector. An absurd situation if you consider that the whole world regards the Netherlands as wildly attractive in terms of knowledge, innovation and practical implementation. The latter, by the way, is a prerequisite for the other two! If the livestock sector in the Netherlands shrinks considerably, forced or otherwise, the development of better systems will slow down or stop altogether. The enormous sums used to buy farms would be much better spent on innovations on these farms.

The focus should first be on reducing the ammonia and fine dust emissions, because they are the reason for the buy-out. Instead of destroying a large amount of capital by demolishing profitable businesses, an economic impulse should be given that would see emissions reduced for a lot less money. We have plenty of leading companies here that can offer technical solutions and continue to develop them, but not when they are dead and gone after ridiculous buy-outs.

Of course, a buy-out scheme could be attractive for some poultry farmers. In the absence of a successor, or in the case of an outdated farm, it may be an option for the individual farmer to stop. But this should be solved by the market. Companies that have no successor are normally sold to companies that continue to develop. A buy-out scheme deprives companies that want to carry on of that possibility by removing production rights and permits. The taxpayer pays twice for the buy-out scheme. First to buy the farms and then through the loss of profitable businesses with their periphery that no longer pay tax. This will have to be compensated at a time when there is a huge hole in the budget due to war, COVID-19 and the energy transition!

As a poultry farmer, I'm keeping my spirits up, but I find these attractive buy-out schemes wildly bewildering!

Eric Hubers is
poultry farmer, board
member DPC and
Vice President Copa-
Cogeca poultry



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'Talent voor groei', or talent for growth, is what we represent. Our roots lie in tertiary agricultural education. We focus on education and research, and on the sharing and applying of knowledge. Aeres UAS has three faculties: Almere, Dronten and Wageningen. We share the same vision and mission, but have our own characteristics and identity.

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AviConsult

Jan Workamp started his own business in October 2015 under the company name AviConsult. Since then he has performed activities for a wide range of clients as a consultant, project leader or chairman.

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The Poultry Expertise Centre (PEC) is a collaboration between businesses, governmental organisations and knowledge institutes that are working in or involved in the poultry sector. The Poultry Expertise Centre focuses on the development and diffusion of knowledge and innovations on subjects like emission reduction, alternative proteins in feed and welfare issues.

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QF Soft

Normally, the poultry meat chain is subject to forward planning. Hatching eggs are received at the hatchery. They deliver day-old chicks to farmers, who transport broilers to the slaughterhouse to be processed into products for supermarkets, catering, etc. PoultrySoft revolutionises the poultry chain! We first look at what needs to be delivered. On that basis, PoultrySoft schedules back to the broiler farmer and via the hatchery to the breeder.

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Puzzle & win

**A magazine is not complete without a proper puzzle page.
But these are not ordinary puzzles, they challenge your
knowledge of poultry. Good Luck!**

WORDFINDER

Locate the words listed below in the grid, running in any direction horizontally, vertically, or diagonally (both forwards and backwards). The characters that are left make up a well-known proverb.

Albumen
Antibiotics
Ascites
Beak
Behaviour
Biofilm
Biosecurity
Blackhead
Botulism
Breakout
Breastbone
Breed
Broilers
Calcium
Campylobacter
Candling
Cannibalism
Carcass
Climate
Cloaca
Coccidiosis
Comb
Crop
Cuticle
Deficiency
Dioxin
Diseases
Drinking
Eggshell
Feather
Feed
Flock
Fluff
Growth
Hatching
Health
Hen
Hygiene
Immunity
Litter
Meconium
Muscles
Nail

S	E	L	P	P	I	N	Y	Y	L	O	U	D	H	Y	G	I	E	N	E
G	N	I	H	C	T	A	H	T	C	L	B	A	N	P	T	S	E	N	M
M	U	I	C	L	A	C	A	N	I	R	E	E	E	T	E	D	M	S	R
Y	T	I	N	U	M	M	I	S	O	R	S	H	H	B	E	R	I	A	E
A	N	T	I	B	I	O	T	I	C	S	U	K	S	E	M	L	C	L	T
D	R	G	N	K	E	A	L	B	P	A	R	C	F	G	U	O	C	H	C
I	E	R	A	F	L	E	W	B	R	N	I	A	E	T	G	I	C	C	A
S	H	O	V	S	R	N	E	B	C	E	V	L	O	S	T	E	C	L	B
E	T	W	E	S	E	H	C	R	K	A	A	B	D	U	O	A	K	I	O
A	A	T	L	M	A	L	E	E	F	L	R	S	C	I	E	I	S	M	L
S	E	H	U	V	O	T	W	E	I	L	O	C	T	H	O	T	B	A	Y
E	F	B	I	A	T	H	O	D	U	T	U	Y	A	B	T	X	B	T	P
S	L	O	C	I	R	A	S	E	R	O	P	F	G	S	O	L	I	E	M
A	U	A	L	B	M	U	S	C	L	E	S	N	F	E	S	N	A	N	A
R	S	T	N	E	D	O	R	C	M	L	I	F	O	I	B	A	E	E	C
L	B	R	E	A	K	O	U	T	I	L	G	N	I	K	N	I	R	D	H
I	P	E	C	K	I	N	G	K	D	T	A	S	T	E	P	A	I	N	G
A	D	E	F	I	C	I	E	N	C	Y	E	M	E	C	O	N	I	U	M
T	C	A	N	N	I	B	A	L	I	S	M	S	S	E	R	T	S	L	E
F	L	O	C	K	G	C	G	S	I	S	O	I	D	I	C	C	O	C	S

Navel
Nest
Nipples
Pecking
Perch

Pores
Rodents
Slats
Stress
Taste

Tail
Virus
Welfare
Yolk

PRIZES

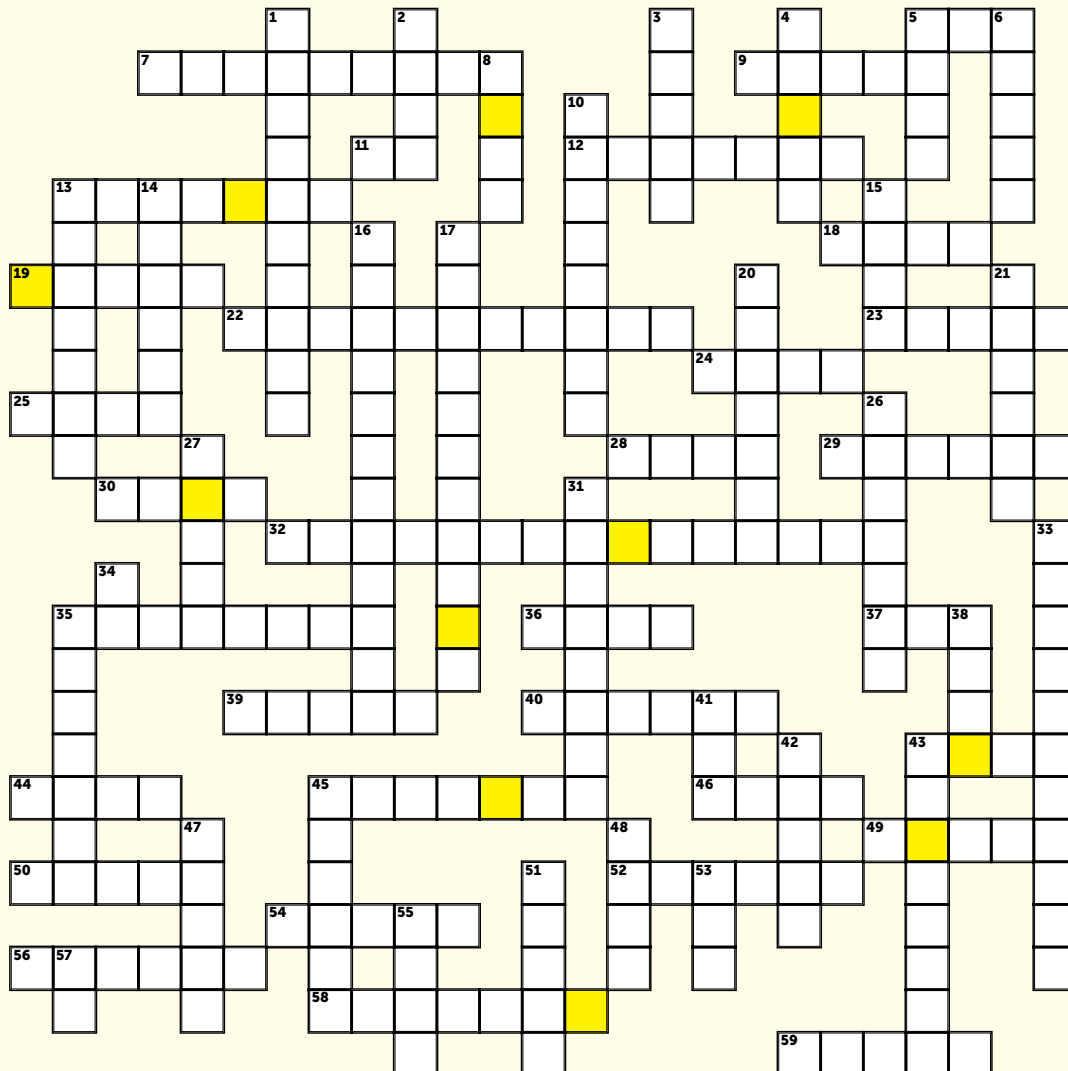
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**Send in your solutions to
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before September 1, 2022.**



CROSSWORD

Fill in this crossword puzzle and the highlighted characters will form a word that is very specific to poultry farming.



ACROSS

5 Antibiotic Growth Promoter (3)
7 Dutch 'poultry capital' (9) **9** Sharp ends on chickens' feet (5) **11** Poultry disease (2) **12** Water belly (7)
13 Bacterial growth in waterlines (7)
18 First feathers of a chick (4)
19 Very small holes in an egg shell (5)
22 Hygiene measures (11)
23 Genetically similar group of birds (5) **24** Round area for day-old chicks: brooding (4) **25** Muscles after slaughter (4) **28** The yellow in an egg (4) **29** Discoverer of the laws of inheritance (6) **30** Small poultry house (4) **32** Chairman of the Dutch Poultry Centre (3+12) **35** Skin cover of birds (8)
36 Many old laying hens end up here (4) **37** Female chicken (3) **39** Chickens come home to (5) **40** Bedding in

poultry house (6) **43** Sedating before killing (4) **44** Temporary storage of feed in chicken (4) **45** Component of egg shell (7) **46** Disease caused by dehydration (4) **49** Chick of a turkey (5) **50** For chickens to sit on (5) **52** Rat and mouse (6) **54** To get out of an egg (5) **56** Under the head of a chicken (6) **58** Egg white (7) **59** Favourite chicken dish at the Super Bowl (5)

DOWN

1 Spanish poultry breed (10)
2 Essential for growth (4) **3** Group of chickens (5) **4** On the belly of a chick (5) **5** Trade fair in Bangkok: VIV ... (4)
6 Location of 2022 WPSA congress (5) **8** Extinguished bird (4) **10** To determine fertilisation of eggs (8)
13 Fast growing poultry (7) **14** Egg

recipe (6) **15** On top of a chicken's head (4) **16** Blackhead (12) **17** Common disease in broilers (11) **20** Other word for coward (6) **21** Compressed feed (6) **26** Not sick but (7)
27 Change of feathers (5) **31** First droppings (8) **33** Disease prevention (11) **34** Abbreviation for Salmonella Enteritidis (2) **35** Russian decorated egg (7) **38** Natural bird brooding place (4) **41** Product of a chicken (3) **42** Hides eggs at Easter (5) **43** To become bad (8) **45** Final part of both the intestinal system and reproductive organs (6) **47** Exterior of an egg (5)
48 What a cockerel does at sunrise (4) **51** Chicken kept for eggs (5) **53** Death on arrival (3) **55** Breeding organisation for broilers (4) **57** Contagious poultry disease (2)



PoultryNL is a magazine full of interesting stories about poultry from all over the world. A new hatchery in India, meat processing in the USA, egg handling in Australia, training in Africa, manure treatment in Chile, farm construction in Ivory Coast, a feed mill in the Netherlands and many, many more stories. What ties these stories together? There is always a Dutch company involved!

The preferred partners united in Dutch Poultry Centre are all kinds of companies that operate in the global poultry industry. In this magazine, you will find basic information about these companies, as well as contact information for all of them and interesting stories about some of them.

It is all easy reading about people who make the poultry world work.

But there is more. Looking for a delicious recipe featuring poultry meat or eggs as the star ingredient? You'll find those in this magazine as well. Furthermore, there are four columns that will make you think and some pages with interesting facts about poultry. Finally, this wouldn't be a proper magazine without a prize puzzle to solve!

Enjoy reading!

Dutch Poultry Centre

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