

Road-testing exams

Review committee: 'Monitor quality better and more often' | **p.4** |

Plant compass

How does a dividing cell know which way to go? | **p.10** |

Student of 60

'I wanted to go back to university, so here I am' | **p.24** |

RESOURCE [EN]

For everyone at Wageningen University & Research

no 12 – 14 February 2019 – 13th Volume

Experimenting for the climate



**INTERNATIONAL
EDITION**

WUR pilots to provide input for government agreement | **p.12**

Corina + Vileda Professional

Corina Hobé, Asito indoor cleaner



SCRUBBING WITH A SMILE

The Asito cleaners walk considerable distances. With all the tools of their trade on the Vileda trolley. And it is pretty heavy work, says Corina Hobé. 'I'm quite short.' She scrubs, polishes and sweeps every day in Atlas, her regular building. But always with a smile. 'I am cheerful and positive by nature,' she says, almost apologetically. And she wears her heart on her sleeve. 'I say what I think. I just blurt it out.' Really, she is a hairdresser. But as a single mother of two boys (6 and 9), a steady job gives her some security. 

RK, photo Sven Menschel

>> CONTENTS

no 12 – 13th volume



>> **8**

DEFENDER

Alpaca protects chickens from birds of prey



>> **18**

ANTIBIOTICS WARRIOR

'They were routinely added to feed; it was high time that stopped'



>> **20**

FAILENTINE

What was your biggest romantic flop?

INTERESTING STORIES

More than seven years ago, I got a job as education & student affairs editor at *Resource*. I had been to Groningen University myself, and had gone through my student years happily anonymous and carefree. I wasn't on any boards, didn't join any course committees and didn't take any extra courses or honours programmes. I did know which pubs had the cheapest beer on any given day of the week, mind you.

In Wageningen I met students who do get involved in all these things. Who, in spite of the threat of fines for delaying graduation, and of mounting student debts, use their student days to experiment and stretch themselves. Who travel halfway across the world to do their degrees in Wageningen. Interesting stories abound. I found it very inspiring, all the stories about students who haven't just drifted into university life but bring great dedication to it.

After this story, you might be thinking: she is going back to college. Or she's going to travel round the world. No, it is not as romantic as that. I am leaving *Resource* but to work in another part of WUR: Communication Services, where I'll go on telling interesting stories. Because there are so many of them here.

Linda van der Nat, website editor

AND MORE...

- 4 Lettuce for the food bank
- 5 'Scientists, take the train'
- 6 PhD student housing shortage
- 7 Ecologist Rory Wilson to speak at Dies
- 9 Diet advice via TV helps elderly
- 15 Picture book with a story
- 22 Book about allergies
- 26 Teacher of the Year longlist
- 27 Meanwhile in Thailand



>> [What do lucky bamboo and second-hand car tyres have in common? | p.8](#)

Complaints about overuse of group work and multiple choice questions 'IMPROVE EXAM QUALITY CONTROL'

The examination committees at Wageningen University should keep a better eye on the quality of exams. The tests are good, but students do complain about overuse of group work and multiple choice questions. This was noted by the review committees that assessed Wageningen degree programmes in recent months.

Over the past months, 42 out of Wageningen's 49 Bachelor's and Master's programmes were assessed by an external committee; the others had been assessed previously. The Wageningen programmes conducted a self-evaluation, students analysed each programme's strengths and weaknesses, and the committee reached its judgement on the quality of the programmes on the basis of interviews. A broad consensus on sore points emerged, including the limited monitoring of exams.

Education director Arnold Bregt thinks WUR needs a two-yearly road test. 'To stick with the road test metaphor: our fleet of cars is great, but the quality control leaves room for improvement.' The exams currently get road-tested every four or five years. Bregt: 'Students on several programmes indicated that they get too many multiple choice questions or an awful lot of assessments based on group work, which meant they could not always show what they are capable of.'

The students' appreciation of the free choice they have and the quality of the teachers was undiminished. 'We have highly motivated staff, with a lot of passion and enthusiasm for education, and we have study advisors who are very important for enabling students to chart their own degree paths,' says Bregt. 'The teachers are still available, even though students can see they are working themselves into the ground.'

But Bernadette Dijkema, who accompanied most of the committees in her capacity as policy officer at Education & Student Affairs, notes that the quality is under pressure from the growth in student numbers, especially in courses involving practicals and field trips. Teachers and students are feeling the rub there, as departments can only adequately supervise groups of a limited size.

And then there is another issue affecting Wageningen Master's programmes. These get a lot of students coming in from other Dutch or foreign universities, and Wageningen programmes in other disciplines. All these students start together, with varied levels of knowledge, language and writing skills, and learning styles. 'Some students find the introductory courses too easy, and others find them too hard,' says Bregt. The review committee therefore recommends sharpening up the admissions criteria for the Master's programmes.

Bregt thinks the screening is fine as it is, and



PHOTO: SVEN MENSCHER

is considering a different solution. 'We could maybe offer students new to the university or the subject a self-test so they can find out how far they are in terms of their knowledge base, language and reflection. Based on that, they can catch up through some individual learning, in the form of a MOOC, for instance.'

The review reinforced the education director's conviction that WUR should hold on to its approach of personal, small-scale education. To this end, the university is investing an additional 43 million euros in the next five years to help cope with the growth. Bregt is not suggesting major adjustments. 'All the programmes are continuously working on small changes. That's what makes us so good.' **AS**



PHOTO: GUY ACKERMANS

LETTUCE FOR THE FOOD BANK

Staff at the Greenhouse Horticulture department of the Plant Sciences Group harvested lettuce in climate-controlled chambers in Radix on 8 February. The plants were the product of a trial on growing lettuce vertically. The researchers wanted to know how lettuce grows at different light intensities and temperatures between 20 and 32 degrees. The 288 lettuces left at the end of the trial were offered to the Neder-Veluwe food bank. The food bank was happy with the donation as vegetables are often in short supply. The study is not finished yet, so there will be more lettuce for the food bank next month. **AS**

'RESEARCHERS, TAKE THE TRAIN'

Scientists should travel less by air. So say 22 academics, most of them professors, in a 'climate letter' sent to the boards of all Dutch universities.

Wageningen professors Rik Leemans and Arjen Wals were among the signatories to the letter. The scientists think universities should lead the way in bringing down greenhouse gas emissions.

With all their trips to con-

ferences, scientists currently make a sizable contribution to greenhouse gas emissions, says Leemans. He calls on his colleagues to take this seriously and look for alternatives. 'I have reduced the amount I fly myself. I go to fewer big international conferences. And I take the train more often. If you have to go to London, for instance, you can get there just as fast by train as by plane.'

WUR is considered one of the most sustainable universi-

ties in the world. 'But even the kid at the top of the class can do better,' says Leemans. He points out that business trips by plane account for one quarter of WUR's climate footprint: more than the commutes of all the staff put together. Besides flying less, the letter writers mention other improvements, such as more environmentally friendly canteens and promoting the use of bikes and public transport.

📍 RK

IN BRIEF

>> CITATION SCORES

The Netherlands is doing well

Dutch academia has flourished over recent years. The country's citation scores in all academic fields put it in the top 5 of 17 countries that are comparable in terms of research and science. These figures come from an analysis by the Rathenau Institute. The researchers compared data from 2000-2003 with those of 2013-2016. The Dutch citation scores in almost every discipline went up over that period. For agriculture and nature, the score stayed the same, but it was already well above average in 2003. In these fields, the Netherlands is in second and third place respectively. 📍 HOP

>> GREEN POLITICIAN

WUR student Antoon Kanis

Student of Economics and Governance Antoon Kanis (29) is one of the 'greenest politicians' in the Netherlands, according to nature conservation organization Natuurmonumenten. He was one of ten nominees for the title of Greenest Politician of 2018. Kanis has been a councillor repre-



PHOTO: D66 GELDERLAND

▲ Antoon Kanis

senting D66 on the Gelderland Provincial Council since 2015. Natuurmonumenten applauds him for his efforts to establish greener school playgrounds, climate measures in the province, and ecological corridors between the Utrechtse Heuvelrug and the Veluwe nature areas. It was announced this week, however, that Kanis is not one of the three politicians who will go through to the award finals on 10 March. 📍 LZ

>> CLIMATE TRUANTS

Mol didn't sign

It was news, briefly, on Thursday 7 February: the Wageningen rector Arthur Mol was one of the scientists who supported secondary school students who 'played truant'. The only thing is, it wasn't true. The letter in which 350 scientists expressed their support for the student strike for the climate was signed by Wageningen professors Rik Leemans and Marcel Dicke, but not by Mol. 'The initiator Jan Rotmans apologized and removed my name.' Mol does not sign that kind of letter, he explains, because Wageningen University does not take a position on such issues. 'Individual scientists can have their opinions, especially if they work in environmental or climate sciences, but I represent the institution.' 📍 AS

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Academic flights

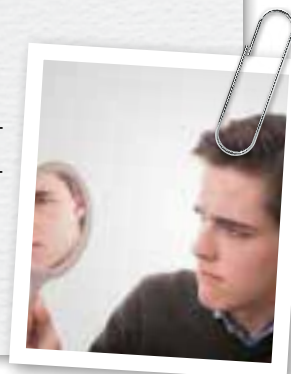
A number of university staff signed a letter earlier this month appealing to universities to adopt a more ambitious climate policy. One of the means mentioned in the letter is cutting down on the number of air miles flown by academics. Relevant, I think. Yet they don't mention another important group of academic air travellers: us, the students.

It starts during our Bachelor's degree, with the mass migration called Erasmus. Super-formative, of course, to study in a new social setting. And we're not the only ones who get to know the exchange city. There are always budget airlines that fly there, so at weekends we get our parents, friends, housemates and fellow students to visit us. So much for the new social setting.

Later, on our Master's, we discover that the thesis options in some chair groups look like the window of a travel agent. All worthy projects, no doubt. But let's be honest, we look primarily for a nice destination. And if that turns out not to be so handy for producing a good thesis, it cannot be because in the planning stage we put more effort into booking our tickets than to writing our research proposal.

OK, I'm parodying it now, and that doesn't do justice to the undeniable benefits of overseas experience. But still, when we graduate we are a bit like the green beans in the supermarkets at this time of year: with a lot more air miles behind us that you might think at first glance. And air miles of questionable value in some cases. 📍

Vincent Oostvogels (22) is exploring the delicate interface between nature management and food production through his two Master's programmes, Forest and Nature Conservation and Animal Sciences



SURVEY: ACUTE HOUSING SHORTAGE FOR PHD STUDENTS

More than 80 per cent of Wageningen doctoral researchers are having, or had had, difficulty finding accommodation, showed a survey among 345 PhD students.

The survey was done by the Wageningen PhD Council after a meeting in October 2018 at which several PhD students said they were having difficulty now that student housing provider Idealis no longer automatically offers PhD students accommodation. PhD students from Africa and Latin America told *Resource* that they were obliged to stay with friends, or had been moving from one temporary address to another for some time.

Of the 345 PhD students who filled in the survey, 81 per cent said they had had trouble finding accommodation. 12 per cent still hadn't found anywhere to live at the time of

the survey. 16 per cent reported having moved four or more times before they found a place where they could stay longer term. Rather more than half of the respondents found accommodation within three months, while 20 per cent said it had taken them over six months.

The PhD Council was unpleasantly surprised by the survey results. 'It is clear that this problem affects the whole of Wageningen,' says chair Bart Lagerwaard. 'But it affects the most vulnerable group the most: the sandwich PhD students, who have to find housing on a limited budget while Wageningen is getting more and more expensive.' These PhD students come to Wageningen several times during the course of their PhD, and usually have to find accommodation again each time.

The Executive Board is aware of

the survey results, says spokesperson Simon Vink. 'The board and the staff are aware that accommodation, including for PhD students, is a problem that must be solved,' says Vink. 'We are going to consult the parties concerned.'

On 6 March, the PhD Council is organizing a lunchtime meeting in Impulse to present and discuss the results, and to look for short- and longer-term solutions with the various parties involved. Lagerwaard: 'The university, the municipality, and parties such as Idealis can no longer look the other way. We understand that it is not just PhD students who have accommodation problems in Wageningen, but moving six times in six months if you have come to Wageningen from another continent? That's just not something you want your employees to go through.' **TL**



'This affects the most vulnerable group the most: sandwich PhD students'

Bart Lagerwaard,
chair of the PhD Council



PHOTO: IRENE KOOMEN

Minister visits Ghanaian project

Minister of Agriculture Carola Schouten paid a visit to Hortifresh in Ghana on 5 February. In this programme, WUR is working on a competitive and innovative fruit and vegetable sector in West Africa. The aim is to produce good quality food for export and for the local market. The programme aims to tap into new markets and improve the diversity and safety of the supply. Schouten came at the invitation of Wageningen Centre for Development to talk to local vegetable growers about their achievements. **AS**

CAMPAIGNERS URGE COLLEAGUES TO STRIKE

Wageningen representatives of the national campaign group WOinActie are calling on their WUR colleagues to take part in the national teachers' strike on 15 March. One of their activities will be workshops in the WUR canteens on 'making your own demonstration placard'.

WOinActie defends the interests of university education, which is coming under pressure from budget cuts and growth in student numbers, says the protest movement's website. The campaigners demand that the cuts of the past year be scratched.

'This is the time to go into action. Out of solidarity. We must get more funding for education,' says assistant professor of Legal Anthropology Michiel Köhne, who is actively involved in WOinActie. 'At the last demonstration in The Hague there were only five people from Wageningen. But we do have the high work pressure here. So we're going to see if we can get more people on their feet on 15 March.'

The campaigners want to do this through the placard workshops in the week of 25 February and a visit to the Forum by an FNV (Trade Union Federation) camper van on 4 March. WOinActie Wageningen also wants to ask the Executive Board for support.

In a response, the Executive Board says it acknowledges the bottlenecks that have prompted the strike on 15 March, but thinks a strike is too drastic a measure at this point. The board respects 'the right of employees to draw attention to their demands by this means, but will not actively support the action.' **LZ**

British field ecologist Rory Wilson to speak at Dies Natalis

PIONEER IN TAGGING ANIMALS

The British field ecologist Rory Wilson will be the keynote speaker at Wageningen University's Dies Natalis (Founders' Day) on 11 March. He is a specialist in tagging wild animals, and a trailblazer in the use of big data in ecology.

For his behavioural research, Wilson has tagged a lot of penguins and other wild animals, so as to monitor their behaviour 24/7. 'Wilson is a pioneer in this field,' says Martin Herold, professor of Geo-information Science and Remote Sensing in Wageningen. 'He is developing new techniques for obtaining better data on the behaviour of wild animals. To do this, he works on the cutting edge between ecology and technology.'

In the early years, ecologists such as Wilson tagged geese and birds of prey with GPS transmitters – heavy, handmade material. Nowadays they use small, cheap cameras,

enabling ecologists to keep track of thousands of animals at the same time. 'It is a new research field: data science for ecology,' says Herold. The transmitters are used to monitor changes in populations over longer periods, and to get the measure of poaching in game parks. Drones are used too. Wilson uses the technology to see where migrating birds forage during their flight, what they eat and how their energy balance changes.

This puts behavioural ecologists in touch with big data and artificial intelligence, says Herold. 'In the past, ecologists often worked with hypotheses, which they tested using limited observations. Now there is so much data that research has shifted towards finding patterns in the mountain of data. We are looking for undiscovered relationships using algorithms.'

What hasn't changed is that the animals have to be captured to be fitted with the



▲ Rory Wilson made his name with his behavioural research on penguins.

transmitters and cameras. Wilson also works on finding ways of doing this with minimal impact on the animal's wellbeing. **AS**

PHOTO: ACADEMIA EUROPAEA

YERSEKE EXTENDS CONTRACT WITH SHELLFISH SECTOR

WUR's regional centre in Yerseke has extended its collaboration with the Zeeland shellfish and fisheries sector. Thirteen parties signed a new agreement on 6 February.

Among the signatories are Zeeland shellfish and fisheries companies, the province of Zeeland, state forest service Staatsbosbeheer, and the municipality of Reimerswaal.

The new agreement supersedes an agreement signed in 2016, with which WUR and regional partners breathed new life into the research centre in Yerseke. In the setup chosen at that time, the researchers no longer submit proposals, but formulate the research line in a couple of pages, together with the partners. The participants buy a number of project hours per year which they can redeem in the course of the year. This approach works very well, says programme manager Nathalie Steins of Wageningen Marine Research. 'The research is now closer to the practitioners and enjoys more support in the mussel and fisheries sector.'

The signatories to the new agreement are investing over half a million euros per year in WUR's marine research. That is 20 per cent of the regional centre's research funding. Its other research assignments come from the ministry of Agriculture, Nature and Food, and from Rijkswaterstaat (the Directorate General of Public Works and Water Management). In recent years, the regional centre in Yerseke has had an increasing number of assignments from Rijkswaterstaat and from regional partners, and its staff grew from 19 to 25.

Staatsbosbeheer has joined the ranks of the knowledge partners in this new agreement, because as a land use manager, it wants more consultation with the province of Zeeland and the shellfish industry. **AS**

A poster for a Science Cafe event. The top part features the text 'Science Cafe Wageningen' in a bold, sans-serif font, with the website 'www.sciencecafe.wageningen.nl' to the right. Below this, the title 'Agriculture 2.0' is written in a large, green, stylized font. The background of the poster is a close-up of a textured surface, possibly a field or a forest floor, with a small, glowing green and blue object in the center. At the bottom, there is a list of details: 'Thursday, Feb. 28th', 'Café Loburg', '19:45 Live music by Zafron Soul', '20:15 Science', and 'FREE ENTRANCE'. To the right, it lists speakers: 'dr. Sjaak Bakker (WUR)' and 'dr. Corné Kempenaar (WUR)'. At the bottom, there are logos for sponsors: 'Sponsored by: WAGENINGEN UNIVERSITY & RESEARCH', 'KLV', and 'RESOURCE'. There is also a logo for 'Partners: LC 3U 7G'.

ALPACAS PROTECT HENS FROM BIRDS OF PREY

How do you make sure that free-range chickens are not attacked by birds of prey? By putting some alpacas in with them. These beasts are happy to share their territory with other animals but protect it aggressively against intruders.

In Spain, free-range chickens are frequently assailed by birds of prey. The unexpected attacks cause deaths, anxiety and stress in the chickens. How to deal with this problem was one of the key questions in the EU research programme Hennovation, in which people in the field — such as farmers, egg production staff and vets — collaborate with researchers to find practical solutions to animal welfare issues. They did this in 19 ‘multi-actor networks’ in five European countries. The idea is that this will let you find new solutions that are immediately picked up by people in practice.

The solution to the chicken problem was surprising. Once there were alpacas wandering around the field, the chickens were prepared to go outside again and they were no longer troubled by birds of prey.

This was not the only problem for which an innovative practical solution was thought

up, says Thea van Niekerk from Wageningen Livestock Research, one of the participating researchers. In another project in Britain, poultry farmers wanted a better method for removing laying hens from the barn after they had reached the end of their laying career. The researchers developed a tailor-made trolley to minimize the work lugging the birds around. The poultry farmers can ride the trolley to the cages in the barn so that the workers do not have to walk so far and the chickens experience less stress.

In a third project, pecking blocks were placed in a Dutch poultry barn so that the laying hens could give vent to their natural urge to peck. Their beaks were blunter as a result, so they caused less

damage to the other birds in their pen. A test with four different pecking blocks that were assessed for sustainability, use and costs showed aerated concrete blocks to be the best. **AS**

▼ Alpacas look cute but they are fierce when it comes to defending their territory.



LUCKY BAMBOO — WITH FREE TIGER MOSQUITO

What do lucky bamboo and second-hand car tyres have in common? They both bring tiger mosquitoes to the Netherlands from Southeast Asia. PhD candidate Adolfo Ibañez-Justicia performed a risk analysis for the NVWA.

Ibañez, a researcher at the Vector Monitoring Centre of the Netherlands Food and Consumer Product Safety Authority (NVWA), determined where and when exotic mosquitoes such as the tiger mosquito and the yellow fever mosquito were introduced in the Netherlands. He also examined the factors that led to their arrival and the options for combatting them. Such an analysis is urgently needed as the Netherlands is an increasingly attractive destination for these insects.

The Spanish researcher found most mosquitoes at plant nurseries growing lucky bamboo (*Dracaena sanderiana* or *braunii*) and businesses trading in second-hand car tyres. The tiger mosquitoes lay their eggs in the plants or tyres in the

country of origin. The plants and tyres (plus eggs) then enter the Netherlands via the port of Rotterdam. The eggs hatch as soon as they come into contact with water. The yellow fever mosquito flies here in containers from North America and the Middle East that arrive in the Netherlands via Schiphol, according to measurements Ibañez did at the airport.

The tiger mosquito is on the rise in various countries around us, says Sander Koenraadt, Ibañez’s co-supervisor. ‘As a result, it seems impossible to keep the insect out altogether. But Ibañez’s research means that we now know where to find the exotic mosquitoes.’ The NVWA can adapt its monitoring to take account of this. That will increase the number of finds, after which the mosquito can be actively combatted.

The situation in the Netherlands seems reasonably under control, concludes Ibañez, but his PhD research shows that we cannot rule out an exotic mosquito species settling in the Netherlands. That could lead to health risks as the mos-

quitoes can transmit diseases such as dengue fever and chikungunya. But Koenraadt puts this into perspective: it will only happen if we also import the viruses and if the climate is suitable for the viruses to complete their development in the mosquitoes. That risk is ‘very small, but it’s not zero either’. **AS**



DIETARY ADVICE VIA TV HELPS THE ELDERLY

More than one in three Dutch seniors who receive home care are undernourished. Telemonitoring can help to ensure these people eat better and more healthily, concluded PhD researcher Marije van Doorn-van Atten.

'Work pressure in the health sector is high and it is also not always clear exactly which health worker is responsible for screening for undernutrition,' says Van Doorn-van Atten. 'So a lot of old people fall between two stools.' In her doctoral research at Human Nutrition, she studied the potential of telemonitoring, a system with which people keep records themselves at home and get advice from a distance.

The study involved 204 Dutch over-65s who received home care, half of whom followed a telemonitoring programme for six months. The other half formed the control group. Participants weighed themselves weekly and recorded the exercise they got for one week per month using a step counter. Some of them also monitored their blood pressure. Halfway through the study, they filled in a questionnaire about their eating habits and appetite. The participants got their results via the television, along with advice on better eating and exercise habits.

The programme led to better, healthier eating behaviour among the people involved. Van Doorn-van Atten: 'They could have been put off by the technology. That was the case during the pilot, but after that we made it more user-friendly.' In the end, 20 per cent of the participants dropped out of the programme before the end, mostly for health reasons.

Although the participants in the trial said they found the technology quite tricky, most of the elderly people were quite positive about the programme. The nurses were less enthusiastic, partly because they had to help the old people with using the programme. 'That's a pity, because the idea was to lighten the nurses' workload,' says Van Doorn-van Atten. 'Now the nurses mainly visit the people who need that extra help, so perhaps that distorts the picture a bit. But it does show that we need to make the technology more user-friendly.' She expects future generations, who grew up with the internet and online television, will not find it as difficult.

There will be no mass shift to telemonitoring for now. 'We would first need to find out whether the costs are in proportion to the benefits. Fortunately, health insurance companies are showing more and more interest in preventive care.' **TL**



▲ Because their appetites change, elderly people do not always eat enough healthy food.

VISION

'Humans as super-predator? Too simplistic'



The number of big wild animals is declining because we are eating them, according to a study by Oregon State University of nearly 300 large species, such as elephants, wild boar, sharks and whales. The researchers conclude that humans are super-predators. That is far too simplistic, comments Bram Büscher, professor of the Sociology of Development and Change.

Why don't you agree with the researchers' conclusion?

'Consumption does indeed play an important role in the decline of large animal species. But is this about luxury cuts of meat for the elite or consumption by local communities who depend on these animals? And is this a direct impact because we eat the animals or an indirect impact due to changes in land use? This study does not really differentiate between these factors. The researchers point mainly to hunting, whereas the biggest problem is that game consumption is embedded in both legal and illegal global markets. That is quite different to people who eat wild animals as part of their culture and food system. If you use the same yardstick for everything, you conceal huge inequalities.'

Is there something in this notion of humans as 'super-predators'?

'I think it's kind of nonsense. We have a huge destructive capacity but you don't see a linear development in which we get better and better as predators. It doesn't explain why some species have actually made a comeback since the 1960s and 1970s. Take the rhinoceros, for example.'

So the solution isn't for us all to eat a bit less?

'The authors argue that is what we should do. But the global economy is all about growth, with an assumption that consumption and trade should increase too. That can sometimes clash with Western ideas about nature conservation. You see that in political movements too; look at the new president of Brazil, Bolsonaro, who wants to give the agro-industry free rein in the Amazon. You won't solve that problem by calling humans super-predators. That does not do justice to the complexity of the politics and power imbalances where nature conservation and food production and consumption are concerned.' **TL**

HOW DID COMPLEX LIFE COME ABOUT?



The Wageningen alumnus Thijs Ettema (41) has succeeded Willem de Vos as professor of Microbiology. He established ground-breaking fundamental research in Sweden on the evolution of complex life forms. He wants to build on that at WUR.

Ettema got his PhD in 2005, under the supervision of Willem de Vos and John van der Oost. A few years later, he left for a postdoc position at the University of Uppsala, where he did well on tenure track and established his own research group with a European grant of 1.5 million euros. The central research question was: how have plants, fungi and animals emerged in the course of evolution from bacteria and archaea (prehistoric bacteria)? In recent years, Ettema has published several ground-breaking articles on this subject in *Nature*.

'I was already working on archaea during my Wageningen PhD research,' says Ettema. Little was known about these single-cell organisms at the time. Ettema was one of the first people to use bio-informatics and genome analy-

ses to figure out their biology. 'The function of most genes was still not understood. We started comparing the genomes of archaea in order to predict the functions of different genes.'

In Sweden, Ettema focused on more fundamental questions. About 3.5 billion years ago, a division arose between bacteria and archaea, both cells without a cell nucleus, known as prokaryotes. Later in evolution, eukaryotes were formed: cells with a cell nucleus, and other organelles such as mitochondria. But a big question in biology remains: how did those eukaryotes come about?

Ettema's Swedish group collected samples of micro-organisms in geysers and underwater volcanoes, because archaea often live in extreme conditions. Then they cut all the DNA into pieces, determined the DNA sequence of those pieces and tried to reconstruct the genome of the micro-organisms. Why make it so complicated? Why not determine the genome of all the micro-organisms directly? 'Because we need a uniform pure culture in order to determine DNA.



PHOTO: GUY ACKERMANS

▲ The new professor of Microbiology Thijs Ettema studies how plants, fungi and animals have evolved out of archaea.

You have to culture that in the lab, but 99 per cent of these micro-organisms do not grow in the lab.'

Ettema expects that he'll have more chance of success in Wageningen than in Uppsala. 'Since the Microbiology chair group was established in 1917, Wageningen has gained a lot of experience in get-

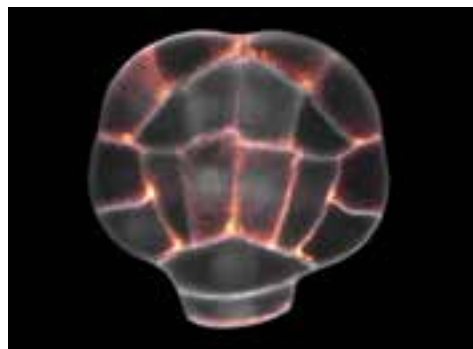
ting micro-organisms to grow, especially under anaerobic conditions. What is more, there is a high level of expertise here, and the infrastructure for research is fantastic. This kind of job doesn't come up very often.' He will bring six researchers from his Swedish group with him to Wageningen. **AS**

SECRET OF PLANTS' SENSE OF DIRECTION

How does a plant cell know what its top, bottom and sides are? That has long been a mystery. Now researchers in the Biochemistry chair group and German and Austrian colleagues have found a group of proteins that function as a cellular 'compass'.

All cells have a top, bottom, front, back, inside and outside with respect to the other cells around them. 'To produce three-dimensional shapes, the cell has to know which direction to divide in,' explains professor of Biochemistry Dolf Weijers. 'If that goes wrong, the plant won't produce leaves or its seeds won't germinate.'

Scientists already knew how that process worked in animal cells but it was still a mystery in plants. Now researchers have discovered a



▲ The polar proteins can be seen in the corners and along the edges of the cells in this plant embryo.

new set of proteins that 'tell' the cell which direction is which. The proteins, which are mainly found in the corners of the cells, have

been dubbed SOSEKI, which is Japanese for cornerstone. 'The discovery marks a huge step forward in our understanding of how plant cells develop polarity,' explains Weijers enthusiastically. The researchers' findings were published in *Nature Plants* on 8 February.

The scientists also found numerous similarities between these polar proteins in plant cells and those in animal cells. Weijers: 'That was unexpected. Plants and animals have a common single-celled ancestor but because directionality is mainly relevant in multicellular organisms, it was assumed that such mechanisms would have evolved independently in plants and animals.' The discovery of the SOSEKI proteins shows that the compass is incredibly ancient and may even have been present in the single-celled ancestor. **TL**

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RESOURCE

For everyone at Wageningen University & Research



PROPOSITION

‘It took me a long time to find the right tone’

Ellen Wemmenhove often drew on her experience as a composer and violinist when she was writing her thesis. She had less time for her music while working on her doctorate, but now she is playing in an amateur symphony orchestra in Denmark, where she works.

‘The nice thing about both science and music is that you have the opportunity to develop something new. In my third year as a student, I started singing in the Wageningen Student Choir and Orchestra Association WSKOV, and two years later I took up the violin. I also write music myself. There is more to that than just talent. You can be lucky and pull something off quickly, but usually it’s a question of hard work, above all.



Ellen Wemmenhove graduated with a PhD on 1 February for her study on the growth of the *Listeria monocytogenes* bacterium in cheese.

It is similar when you write an article. It takes a lot of time and patience to write it so that you get your mes-

sage across to your audience, and have an impact. Four features of both a good scientific article and a good piece of music are rhythm, tone, creativity and perfectionism. Without them, your writing skills will be nothing to show off about.

In my publications, I see rhythm in the order and structure I give the writing. Tone has more to do with the way I put things, creativity is required for developing new ideas, and perfectionism is important for getting the message across really clearly and convincingly. It took me a lot of time to find the right rhythm and tone for a good scientific article, but once I had them, the writing went faster. Writing is a skill I have learned, and from which I think I shall benefit a lot, no matter where I work.’ TL





Methane? Burn it!

When manure from the dairy industry is stored, it releases methane. Currently, for every litre of milk, about 13 grams of this strong greenhouse gas gets into the atmosphere. On Peter van Roessel's farm, an unusual trial is going on to reduce these emissions.

text Roelof Kleis *illustration* Annet Scholten *photos* Marije Kuiper

Farmer Peter van Roessel steps onto the enormous plastic bag behind his farmyard, accidentally stepping in a puddle of water. His clogs fill up at once. But he hardly notices, as he eagerly carries on demonstrating the trial taking place on his farm.

The jovial Brabant farmer runs a dairy farm-cum-care farm in the Haarsteeg countryside near Den Bosch. What he is walking over now is a slurry bag of 52 by 26 metres, which can hold up to 1500 cubic metres of slurry. The bag is nearly full of the winter output of his 65 cows, which are in the nearby barn. It's a strange feeling to walk over the bag, as if you were walking on a waterbed.

BIOGAS

The slurry bag is connected by two pipes with a much smaller gasbag beside it, which captures the gas formed in the slurry. Pure biogas, explains project leader Roland Melse, a researcher at Wageningen Livestock Research. 'Biogas consists of 60 per cent methane and 40 per cent CO₂. The amount of methane generated depends on the temperature and the composition of the manure.' In standard manure silos and bags, that biogas disappears into the outdoor air through ventilation pipes.

It is not easy to make good use of the methane, explains Melse. 'The quantities from the manure storage on farms are relatively small, and they are only available for a couple of months a year. In the spring, the manure is spread on the land. The biogas is not enough to make using it to heat water economically



SERIES EXPERIMENTING FOR THE CLIMATE

The Netherlands aims to cut its greenhouse gas emissions by 49 per cent by 2030, compared with 1990. How we are going to do that is to be laid down in a comprehensive Climate Agreement. But while the politicians in The Hague haggle over the contents of that agreement, around the country numerous experiments in emission reduction are already under way. WUR is coordinating all the pilot projects for the Agriculture and Land Use sector. *Resource* will be taking a look at these experiments in the next four numbers. This week, episode 1: Livestock.



▲ Farmer Peter van Roessel (left) and project leader Roland Melse of WUR inspect the material used in the methane-burning trial on Van Roessel's farm.

viable.' But you can make the methane less harmful by converting it into CO₂.

That sounds a bit odd: helping the climate by producing CO₂. 'But in fact it is climate-neutral,' says Melse, 'because this carbon has come from organic matter in the feed, so it is part of the short carbon cycle. By converting the methane into CO₂, you convert a strong greenhouse gas into a much weaker greenhouse gas.' One kilo of methane contributes 21 times as much to global warming as a kilo of carbon dioxide.

BURPING COWS

The livestock sector is a horrendous producer of methane. 'Seventy-five per cent of the methane in the barn comes out of the animals' mouths,' explains Karin Groenestein of Wageningen Livestock Research. She and her colleague Ingeborg de Wolf coordinate all the climate pilots currently running in the livestock sector (see inset). 'The manure is responsible for the other 25 per cent of the methane emissions from the barn.' The experiments mainly target cows, as they are the major producers.

'The average cow produces 125 kilos of methane per year in its rumen. Then there is another 40 kilos from emissions from the manure. The average pig produces about 1.5 to 2 kilos internally and 10 to 20 kilos via the manure.'

Animals are not the only methane producers, actually. Roland Melse enjoys demonstrating the sensitivity of the new methane meter

that has been acquired for this project. Half of all human beings produce methane too. The apparatus, which resembles an alcohol meter, shows this accurately. Melse's own gut flora are declared innocent. But in the case of farmer Van Roessel (and, admittedly, that of this reporter), the meter shoots up. 'A question of genetic makeup,' Melse reassures us. Luckily, the quantities are minute.

BURNING


The pilot is not going particularly well so far. There is very little gas formation, and none has been burned so far. The installation was set up in December, but the gas bag is still as flat as a pancake. Van Roessel and Melse think this is because of current temperatures. It is too cold for the bacteria to produce the biogas. In itself that is good news: the less methane, the better. Van Roessel: 'But soon, when the sun shines on the manure, the gas production will get going.'

Burning the methane is one of three methods being trialled under Melse's supervision. Besides this 'thermic oxidation', there are two other trials running in which the methane is oxidized biologically (by bacteria). In an above-ground variant, the gas from the manure silo is piped into a basin with a compost biofilter, where bacteria in the compost break down the methane. A soil variant provides a set of underground, perforated tubes that the gas is moved along. Soil bacteria have to do the work of breaking it down. This soil filter still has to be laid down.

FEWER EMISSIONS IN THE LIVESTOCK SECTOR

The livestock sector must deliver almost one third of the reduction in emissions that the Netherlands aims to achieve by 2030. The pilots that have been planned for this – coordinated by WUR – will cost 8.5 million euros between them. That is almost half of the total of 19 million that WUR and 60 partners and subcontractors can spend on all the pilots and demo projects in the interests of the Dutch Climate Agreement.

The methane trials described in the main story come under the heading 'reduction': cutting emissions from manure. Other projects are about monitoring methane production in the barn, testing methane sensors and influencing methane production inside the animal, explains Karin Groenestein of Wageningen Livestock Research. 'You can influence that methane output through the feed or the method of pasturing.' The trials focus largely on demonstrating existing techniques on the farm.

The trials are carefully monitored and recorded. 'The techniques are not new in themselves,' says Melse. 'What is new is that they are being demonstrated on this scale on a farm. We want to establish whether they work, how much they cost and what they deliver in the way of CO₂ reduction.' 

A picture book with a story

The WUR Library in the Forum has gained a rare book of prints by Maria Sibylla Merian. The generous donor, 94-year-old Jan Lindenberg, came to hand over the book personally.

The book by Merian (1647-1717) is titled *Dissertatio sur la Generation et les Transformation des Insects de Suriname* and contains 72 black-and-white prints of tropical insects and their host plants. The originally German artist and entomologist went on a study tour to Surinam at the age of 52. She was the first to draw both the insects and the plants they live on.

The first print of the book came out in Amsterdam in 1705. The edition Lindenberg has donated is a copy from 1726. According to the curator of Special Collections Forum, Liesbeth Missel, this is a Dutch edition with Latin and French texts. Missel is very happy with it. 'We already have an edition from around 1765-70, but that one has no text. This book contains the original texts by Merian. That makes it exceptional.'

IN THE CASTLE ATTIC

The history of the book and its various owners is equally exceptional. Jan Lindenberg started studying Agricultural Engineering and Field and Grassland Agriculture in Wageningen in 1945, straight after the war. After graduating in 1951, he worked for the government service for land and water use, and later for Unilever. The book by Merian came into his possession through his now deceased wife Anneke, a descendent of the De Jong family from Beek en Donk in the province of North Brabant. Lindenberg lived in an old farmhouse a stone's throw from Eyckenlust Castle in Beek en Donk, which had been the property of this aristocratic family since 1745. 'The book lay in an old chest in the attic of the castle,' he tells us. 'It came to light when the attic was cleared,



▲ Jan Lindenberg and his daughter look through Merian's book with WUR president Louise Fresco. On the right, curator Liesbeth Missel of the WUR Library.

about 30 years ago now. My wife took it home. The book came into the family through the Nahuys family, who married into the De Jong family of Beek en Donk in the 19th century, says Lindenberg. 'Anna Nahuys was my wife's great grandmother.' In the front of the book is the coat of arms of 'Countess Anna Nahuys'. She wasn't actually a real countess. But she was a colourful, artistic and freethinking woman, as is clear from the biography published in 2015 of her daughters, Cécile and Elsa, two feisty ladies.

FOR POSTERITY


Anna Nahuys (1826-1905) married Jan de Jong esquire, of Beek en Donk. Anna's life, social setting and times are minutely detailed in her diaries, filling 20 notebooks. Anna was the only child of a highly gifted father, and spoke five languages by the age of 12. Her mother

was a talented painter of portraits and landscapes. After 1842, when Anna was 16, she spent the summers in Oosterbeek, where her mother painted and drew.

It is possible that Anna Nahuys came to Wageningen during one of those summers. In any case, her book by Maria Sibylla Merian will reside here permanently from now on. 'Because it is in good hands here,' explains the generous donor, Lindenberg. 'I want the book preserved for posterity in a good, safe place.'

Lindenberg has donated the book on condition it will not be sold, and that the family can always come and look through it, on request. WUR president Louise Fresco was more than happy to make these promises. She is a great admirer of the work of artist and scientist Merian. **✎ RK**

A MAGNIFICENT SIGHT

The Netherlands is a popular overwintering place for jackdaws from all over northern and eastern Europe. The permanent population of about 300,000 birds can grow to a million between October and April. Thousands of these jackdaws have picked the Wageningen campus as their winter residence. Along with small flocks of black crows, they roost for the night in the 'dassenbos' wood near the Dijkgraaf or on the roofs of Helix, Orion and the Forum. Just before sunset they circle in large flocks above WUR staff and students making their way home. A magnificent sight and sound. Or a scary experience, of course, if you suffer from ornithophobia.  LdK, photo Guy Ackermans





Illinois climate plant education for quality of life flowers water food sustainability

Getting a grip on antibiotics



'The livestock sector is no longer based on the systematic use of antibiotics'

Ten years ago, the Dutch livestock sector was a big contributor to the emergence of antibiotic-resistant bacteria, as a big consumer of antibiotics. Now the Netherlands is leading the way in reducing antibiotic use. Researcher Dik Mevius at Wageningen Bioveterinary Research in Lelystad played a key role in that turnaround. He retired on 1 February. With peace of mind.

text Albert Sikkema photo Judith Jockel

When did you discover that the high rate of antibiotic use in Dutch livestock farming was a public health issue?

‘That was in March 1990, at a meeting of the Veterinary Inspectorate of the ministry of Public Health, which was the forerunner of the NVWA (Netherlands Food and Consumer Product Safety Authority). At the meeting, the Leiden microbiologist Hubert Endts presented a study that linked the use of the antibiotic enrofloxacin on poultry farms and the growing antibiotic resistance in *Campylobacter* bacteria in humans and chickens. A worldwide debate about that antibiotic flared up: should we ban its use in livestock?’

The second eye-opener for me was a Danish report in 1995, which linked growth stimulants in livestock with VREs, intestinal bacteria that are resistant to the antibiotic vancomycin, an indispensable drug for humans. These VREs were found in a lot of farm animals. In those days, the Dutch livestock sector used 300,000 kilos of antibiotics per year as growth stimulants, adding them routinely to feed or drinking water. That could not go on. In 1998, I was on a Health Council committee, and we recommended banning the use of growth stimulants. The ban came into effect in 1999.’

Did that ban help?

‘Not really. In 1999, the livestock sector used 300 tons of growth stimulants plus 300 tons of prescription antibiotics per year. In 2007, farmers were not using growth stimulants anymore but got through 600 tons of prescription antibiotics a year. Use shifted. We had an antibiotics policy but we didn’t implement it. In practice, the economy was more important than public health. It was cheaper for livestock farmers to fight diseases with antibiotics than to prevent them with better feed and drinking water, better barns, better supply chains and better management. The head of the pig industry, Wyno

Zwanenburg, said at the time: “The economy rules; I want to be able to buy cheap antibiotics, if necessary from abroad”.’

Yet a turnaround did come.

‘Yes. We found more and more resistant bacteria. MRSA and ESBL became well-known abbreviations for hospital bacteria that could no longer be defeated with regular antibiotics. Hospitals started checking patients for MRSA, and there was a separate reception point for farmers. But the most important event was the outbreak of Q fever on goat farms around 2008, which cost human lives. After that, public health became priority number one, above the economy. Agriculture minister Gerda Verburg set up a taskforce, to which I was an advisor. An agreement was drawn up for each sector, aiming at responsible use of antibiotics in livestock farming. Nobody dared give figures for the required drop in antibiotic use. That changed in 2010, though, when the ANP reported: “Woman died due to chicken with ESBL.” This was on the TV news and the programme *Nova*, and there were questions in parliament. The ANP story later turned out to be incorrect, but it did lead to a specified reduction target: 20 per cent reduction in 2011 compared with 2009, and 50 per cent reduction in 2013.’

Targets are not reductions, though. How was it managed?

‘The establishment in 2010 of the SDA, the veterinary medicines authority, was a very important moment. SDA, an independent institute, started analysing livestock farmers’ antibiotics use and setting goals. I became chair of the SDA’s expert group. Previously we only had the sales figures on the antibiotics, but now we had the usage figures per farm. That meant farmers could compare their use with that of others. There were farms with very low and with very high

levels of antibiotic use. The registration led to raised awareness among the farmers, who set to work with vets and feed suppliers to reduce their use. They achieved a tremendous reduction in just three years. The implementation was a success due to the bottom-up approach.’

The role of vets was important too, because they prescribed the antibiotics, didn’t they?

‘The vets sold the antibiotics and made money from them. The government got Berenschot consultancy bureau to do a study on whether vets’ dispensing rights should be taken away. The conclusion then was that it wasn’t the vets but the farmers who played the most decisive role. Yet the vets made an about-turn too. The former chair of the association of vets KNKVd, Ludo Hellebrekers, gave talks to vets throughout the country in 2007. He explained that a shift was needed to a health policy. He played an important role in awareness-raising.’


Who else was important for this turnaround?

‘Christianne Brusckke, the Chief Veterinary Officer at the then ministry of Agriculture, Nature and Food Quality. She was the most important person on the government side, because she managed this dossier for years and still does. Jos Werner, the chair of the SDA, played a key role too. As CDA senator, he knew the political game in The Hague. And lastly, Toon van Hoof, chair of agriculture organization ZLTO. A man with a lot of strategic management experience who understood that it had to happen.’

And let’s not forget Dik Mevius.

‘I was on all the committees as an advisor, both the committees that analysed the development of antibiotic use and resistance, and the management committees that made recommendations on the policy to be implemented. The “spider in the web”? Yes, you could say that.’

Do you think we can call this a sustainable revolution in antibiotics use?

‘Yes. The livestock sector is no longer based on the systematic use of antibiotics, but is doing more and more health management. Livestock farmers now look at the quality of the feed, the barn and the drinking water, and they carry out hygiene measures. The use of antibiotics in the livestock sector has gone down by 64 per cent and antibiotics resistance in the animals is going down too. I look back on my work here in Lelystad with satisfaction.’ 

Failentine



WHAT WAS YOUR BIGGEST ROMANTIC FLOP?

Valentine's Day is all about love and romance, but it can lead to awkward situations. So *Resource* went looking for the worst bloopers, the most memorable rejections and the biggest romantic flops. In short: who was your Failentine?

text Luuk Zegers and Gina Ho *illustration* Henk Ruitenbeek

Tony Gunawan



Master's student of Organic Agriculture

'When I was a teenager I met this girl on *Friendster* (a social media website). We were chatting non-stop for three months and **we agreed to meet up on Valentine's Day in a shopping mall, as you do in Indonesia.** I got there full of happiness and huge

expectations. When we did meet, though, I was disappointed and she probably was too. With hindsight, no one would ever live up to the imagination you've built up after three very intense months. She was taking a lot of time hesitating about whether she should leave her friends and come hang out with me alone. I was annoyed so I just stormed off, as teenagers do. When her friends called out to me, I didn't know why but I started running for my life, and for some reason they all started chasing after me. And there I was, running away from a group of girls in a huge shopping centre on Valentine's Day. I've done a lot less running away since then.'

Natascha van Lieshout



Junior researcher at Plant Breeding, Wageningen Plant Research

'When I was 20 I went out with a classmate. Unfortunately, I hadn't heard his name properly when we first met, but he had very long hair, a curly moustache and a goatee beard so he looked very like a musketeer. **I thought his name was Aramis, just like one of the three musketeers.** We started dating and after a while, a friend told me, "That's not his name at all". But by then we'd been dating too long for me to ask him his name, so I just used pet names like 'sweetie'. After six months, we were chatting and I told him how bad I was at remembering names. He suddenly asked me, "Do you know my name, actually?" And I had to tell the truth. He asked: "We've been dating for six months, how can you not know my name? Couldn't you have asked my friends?" But all his friends thought it was funny that I didn't know his name, and he wasn't on any social media so I couldn't check it. He's called Armin, so I wasn't far off. It was awkward, but he did forgive me.'

Anonymous I



Bachelor's student of Health and Society (name known to the editors)

'At my secondary school you could send each other lollies on Valentine's Day. I was in the final year and my boyfriend was in the same class. The lollies were brought around during Social Studies. **My teacher**

was a joker and he decided to read out all the notes. The note to me said, "You'll get my lolly later". The whole class burst out laughing and so did the teacher. I nearly died of embarrassment, and my boyfriend was even more embarrassed, I think.'

Lukasz Grus



Assistant professor of Geo-information Science and education coordinator for Data Science

'It's not a real failure but since I've had a girlfriend – now my wife – I am rather torn on Valentine's Day. Christmas is a tradition you grow up with. You feel the atmosphere

as a child, so you develop a feel for it. But Valentine's Day wasn't a big thing here when I was little. It's not part of our culture, originally, so it feels like something imposed on us by American influences. Nowadays the supermarket is all red from the beginning of February. It's a day that is about love and emotions. **Someone decided that you have to do something romantic on this particular day. It feels artificial.** But I do usually do something for my wife on Valentine's Day, because she likes having a surprise. And if you don't do anything, there'll be a row at home.'

Luuk Zegers

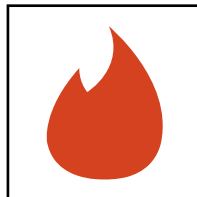


Student and education editor at Resource

'I was 20 and I was on an internship in Hilversum. **Every day after work I passed a shop at Utrecht Central Station where they sold delicious apple pie and it just so happened that a beautiful girl worked there.**


Every day that she was working, I admired her lovely smile and so I had to buy an apple pie, although I couldn't really afford it as a student, of course. At some point I couldn't face another apple pie, but I did want to see her. It was nearly Valentine's Day so I plucked up all my courage and decided to ask her out. She said, "yes, why not?" and I went home with a big smile on my face. Once we were having a drink, though, it soon became obvious that we didn't have much in common. After a couple of drinks, I wanted to pay the bill. Bleep: balance too low. I'd had too many apple pies to be able to pay for the drinks.'

Anonymous II



Master's student of Plant Sciences (name known to the editors)

'I'd had very nice contact with a boy on Tinder. As we chatted, he asked me to go to an open day at some place where they made boat engines. **I thought: funny place for a first date, but okay!** So I went along. When I

saw him for real, he was not at all like he was on Tinder. When we messaged, he talked very fluently but on our date he hardly said a thing. I tried to keep the conversation going by asking questions like, "what is this engine for?" but it really was very awkward. That's Tinder: people can look very different in the flesh, and behave very differently. After about 40 minutes of awkwardness, he asked if I wanted another cup of coffee. I made up something about a Skype appointment and went away.' 

Harry Wichers clears up misunderstandings in his book

Allergies explained



Cats, peanuts or pollen: who isn't allergic to something these days? Why is that? And is everything we call an allergy really an allergy? WUR researcher Harry Wichers has written a book about this. 'Allergy has become a kind of catch-all term for all unpleasant reactions.'

text and photo Tessa Louwerens

It is a lovely spring day and people on the terrace are enjoying the first watery spring sunshine. Not Lisa, though. The birch trees are flowering and she is allergic to their pollen. She can't order a slice of apple pie either, because it might come from a factory where nuts are processed as well. And Lisa has a severe nut allergy.

Harry Wichers draws this picture in the opening scene of his book *De achilleshiel van allergie* ('the Achilles heel of allergy'), which was published last December. Wichers is a biochemist and allergies and immunology are among the topics he works on at the Fresh Food & Chains department of Wageningen Food & Biobased Research (WFBR). 'I notice that people are not always very understanding about allergy. You hear people say it's all between their ears. Whereas it can be very difficult to live with.'

CATCH-ALL TERM

When Atlas publishers asked him over six years ago to make his knowledge about allergies available to a wide readership, Wichers was enthusiastic from the start. Every rainy weekend he worked on his book at home. Unfortunately the publisher pulled the plug on the project halfway through – which was a severe blow – but Wichers still finished the book and found a new publisher in Wageningen Academic Publishers.

Lisa's story, which Wichers begins his book with, is not a made-up one but is based on a postdoc he works with. Only her name has been changed. The example illustrates how hard it can be to live with allergies. And it seems as though more and more people have them. 'If you ask 100 people at the market in Wageningen whether they are allergic to any foods, about 20 of them will say they are,' says Wichers. 'If they all go to the doctor, it will turn out that two of them have an actual food allergy. Allergy has become a kind of catch-all term for all unpleasant reactions.'

So there is quite a bit of confusion about what an allergy is, exactly. Well-meaning legislation has played a part in that too, according to Wichers. The European Union, for example, has designated 14 substances that must be listed under 'allergy information'. Wichers: 'They include the milk sugar lactose, whereas there is no such thing as a lactose allergy.' An allergy involves an excessive – and in fact unnecessary – reaction by the immune system to harmless substances (usually proteins) from outside the body. People who are lactose-intolerant, about 70 per cent of the world population, lack an enzyme that is necessary for breaking down lactose in the gut. Without the enzyme, bacteria set to work on the milk sugar and that leads to abdominal cramps, gas and sometimes diarrhoea.

STRAWBERRIES

People who have a strong reaction to strawberries are not, strictly speaking, allergic either, says Wichers. Strawberries contain histamine, a substance that is also released in the body during an allergic reaction by the immune system to a particular substance. The symptoms that the strawberry histamine can cause in oversensitive people are the same as those of an allergic reaction, but they come about without any involvement of the immune system.

Wichers says these examples demonstrate that the differences between an allergy, an intolerance and a sensitivity are not just a case of nit-picking about names. 'It is important to establish how often allergies really occur, to be able to do something about them as much as anything. Because if someone really is allergic, that has major consequences. If you don't know the cause, you can't start the right treatment.'

HYGIENE


About 5 per cent of children and 2 per cent of adults in the western world currently have a true food allergy, Wichers writes in his book. In other parts of the world, such as Africa, the percentage is lower. This can partly be explained by differences in diagnosis and registration, but it is also because people in the West tend to live in cleaner environments. The idea behind this cleanliness hypothesis is that a bit of contact with dirt hardens the immune system so that it doesn't react to every little thing.

It is not just foods that can cause allergic reactions. One third of Dutch adults suffer from respiratory tract allergies such as hay fever or a house dust mite allergy. Hygiene may play a role here too, but in this case it is the other way round, explains Wichers. 'That's because you are not allergic to the insect itself but to its poo. If you have slept on the same pillow for five years, it consists of about 20 per cent dead house dust mites and their excreta. So it's not a bad idea to wash your pillow a bit more often, or buy a new one.'

ACHILLES HEEL

For now the best advice for people like Lisa is to avoid substances to which they are allergic. Wichers: 'It was believed for a long time that this was the only option. But now there is some light at the end of the tunnel.' Large-scale studies have revealed that children who eat fried peanut snacks at a young age are less at risk later of developing a severe peanut allergy. Another study showed that children who are allergic to cow's milk protein grow out of the allergy faster if they eat cake or muffins with milk in them. Researchers at WFBR are working with the Erasmus Medical Centre in Rotterdam to find out precisely which substances are formed when allergenic foodstuffs are baked, which could explain this phenomenon.

This means that allergies, just like the apparently invulnerable Achilles of Greek mythology, have their weak spot, says Wichers, referring to the title of his book. 'But finding it is not as simple as shooting one arrow.'

Harry Wichers will be giving a talk about his book De achilleshiel van allergie in the town library at Stationsstraat 2 in Wageningen, at 15:00 on Saturday 23 February. Admission is free. 



‘I bother less with things that do not interest me’

University after 30

Most Wageningen students are between 18 and 25 years old. But there are a few people in the classrooms who have half a career behind them already. Or even a whole one. What motivates them to become students again? ‘I wanted to take a look from the inside and see how academia functions.’

text Gina Ho photos Aldo Allesie

‘I HAVE A MUCH MORE SOCIETAL VIEW OF RESEARCH’



SINI ERAJAA (35), MSC FOREST AND NATURE CONSERVATION, FROM FINLAND

‘I’ve been very happy working in the environmental NGO sector for the past 10

years, so I was not planning to come back to university at all. But I had a major life disruption more than a year ago, as I was diagnosed with breast cancer. I had to go through chemotherapy and all this nasty stuff. The whole treatment process took almost a year, but I wasn’t bedridden or anything, so I wanted to make something out of this time. Since I’ve never done a Master’s, I thought, maybe I can study!’

The question “What does the research say?” plays a massive role in the issues I’ve been advocating in my work. As well as learning academically, I wanted to take a look from the inside and see how academia functions and interacts, and how researchers see their societal role and so on.

Compared to my full-time job, studying itself isn’t very stressful. I think my age makes it easier to decide how to spend my time, as I’ve got a clearer idea of what I’m interested in, and I bother less with things that do not interest me. Being back in school also allows me the time to figure out where I stand on certain issues. I also have a much more societal view on what’s the point of university and research, such as how they serve society, are they getting a tangible message out or not. I’m also defi-

nately even more frustrated than before about how bad academia is at talking in a way that would be relevant for policymakers.

If I could speak to my younger self, I would say: go girl, well done! During my Bachelor’s, I did a lot of other stuff outside my studies as I was, and still am, frustrated that we’re not doing a lot with the wealth of knowledge we have in academia. So I got involved with grass-roots NGOs and student politics, organizing demonstrations and the like. Everything I learnt from those activities was what got me my jobs ever since. Of course it’s useful to have a degree, but the most important stuff I actually learnt outside of university.’

‘I WANT TO INTRODUCE ORGANIC FARMING IN MY PREFECTURE’



SHIGERU YOSHIDA (60), MSC ORGANIC AGRICULTURE, FROM JAPAN

‘For my Bachelor’s, I studied environmental science in Japan in the 70s. At the time, it was a new subject as only three out of 50

national universities offered the course. When I graduated, I joined the Shizuoka local prefecture government and for 38 years I worked for extension centres, in research and also in policymaking.

I retired this year and I’ve still got 15 years until I’m, say, 75, so I asked myself, what should I do in this time? Things are often hard for farmers in the mountainous areas of my prefecture, where tea is mainly produced on a small scale. I believe that appropriate farming

systems could benefit the environment, and I want to introduce organic farming to these mountainous areas, where farmers could produce organic, premium quality tea for export as well as local markets. I seriously wanted to return to university, as I wanted more scientific knowledge. So here I am now.

When I was a student back in the day, I didn’t study that hard. If I had known what I know now, I would tell my younger self to work hard! I would also tell him, when you want to study, then go to university again whenever you want to, be that 5 years or 38 years later.’

‘I’M SEVEN OR EIGHT YEARS OLDER BUT I DON’T FEEL THE MATURITY GAP’



SAMSON HARPER (32), MSC ORGANIC AGRICULTURE, FROM THE UNITED KINGDOM

‘I was travelling for a few years before I went to university and again after I finished my Bachelor’s. During my

travels I got interested in food, gardening, horticulture, food systems and the natural world in general. And I figured agriculture is a really good interface for studying how we relate to the natural world.


Since I was travelling so much, I didn’t really have a home. I was developing all these interests and I didn’t know what to do with them yet. Being anchored somewhere helps. I’ve been interested in permaculture, but I felt that I wasn’t learning as much as I wanted from talking to people in the movement. I felt like I



needed more serious training, hence the decision to come back to university.

During my Bachelor's, there were a lot of opportunities to write personal essays, which allowed a lot of intellectual freedom to find your angle, ask questions, and read what you want to

read. The courses I have done here so far are different; there is a big focus on group work. In retrospect, the courses were all good and I feel quite comfortable with what I've learnt, but at the time, they felt micro-managed and the courses weren't linked between periods.

I'm seven or eight years older than most people in my year but I don't feel the maturity gap. I'm surrounded by smart people who are on the ball. Some have got more idea of what they want to do with their lives than I have. I don't have a solid plan yet – but I'm getting there.' 

MATHS BEE

You don't need much brain power to do maths. Experiments by RMIT University in Melbourne, Australia, show that even bees can do it. It took four to seven hours to teach bees how to add (+1) and subtract (-1) using a simple system of reward (sugar water) and punishment (a bitter substance). That difference in the hours? Of course some bees are smarter than others.

THE PILL

Women on the pill are worse at recognizing emotions, according to research at the University of Greifswald in Germany. Ten per cent worse, to be precise. This mainly applies to subtle emotions such as pride or disdain. Further research is required to show whether this causes couples to break up. It makes you think at any rate.

EAVESDROPPERS

Research by Cornell University shows that mosquitoes make excellent eavesdroppers. The little insects can hear sounds up to 10 metres away. They can manage that with just their antennae, even though they are far less sensitive than eardrums. The antennae's greatest sensitivity is in the frequency range of the wing beat of lustful females – but also that of the human voice. Despite this, the researchers have no evidence that mosquitoes find us by hearing us speak.

ROCKING

Parents have known for a long time that rocking lulls you to sleep. Now this has been proven scientifically in research at the University of Geneva (Switzerland). People fall asleep more quickly and sleep more deeply when rocked. A surprising side-effect is that this helps your memory. Time to put up that hammock again.



Four newcomers on longlist Teacher of the Year Award

Four teachers are making their debut on the longlist for the 2019 Teacher of the Year Award. They are Anneke Valk, Elke Scholten, Kris van 't Klooster and Tijs Ketelaar.

Like the 13 other candidates, these four teachers are in the race to be crowned Teacher of the Year 2019. Many former winners are also in with a chance of the title, including Henry van den Brand (2018), Jessica Duncan (2017) and Roel Dijkma (2016). Like last year, around 21 per cent of the eligible students cast a vote.

The teachers on the longlist will be interviewed by a student jury made up of eight students representing a range of degree programmes and nationalities.



Tijs Ketelaar



Kris van 't Klooster



Anneke Valk



Elke Scholten

They will choose a top five and eventually select the winner. Jury chair Suzanne Ruijten: 'We are looking for an impassioned and committed lecturer who is constantly making improvements to their teaching.' Toshihiro Takada is also on the jury. 'I'm from Japan, where the education culture is much more hierarchical. You would never be able to have a poll like this. But I really like the fact that it's possible here.'

LZ

ALL NOMINEES

John Beijer	Sonja Isken
Fred de Boer	Tijs Ketelaar
Henry van den Brand	Kris van 't Klooster
Julia Diederer	Arie Nieuwenhuizen
Roel Dijkma	Huib Savelkoul
Jessica Duncan	Elke Scholten
Maria Forlenza	Anneke Valk
Sander Gussekloo	Pim de Zwart
Hannie van der Honing	



See the video and photo series on resource-online.nl

PHOTO: SVEN MENSCHER

Winter AID

Groups doing crazy things on campus. Wait, what? It's not AID time, is it? Yes, it is, sort of. This week sees the Winter AID, run for European exchange and Master's students who started their courses in February. They are treated to a fun programme that includes a bike

sale, karaoke, and board games. And of course, Crazy 66, in which they have to carry out ridiculous tasks. Curious about all the new students' nationalities and unusual languages? Watch the video about international tongue twisters on the website. **LdK**

Career day visitors seek a challenge and an open culture 'The salary doesn't matter to me'

More than 1000 students and new graduates met representatives of 70 companies and organizations at WUR's Career Day on Tuesday 5 February in Orion. What are future employees looking for in a company, and vice versa?

Wing Chung is an MSc student of Biotechnology who hopes to work in the pharmaceutical industry later. 'Creating and improving new vaccines – I'd like to go in that direction.' And he'd prefer to work for a company with an open working culture. 'A place where you can talk to everyone and people are open to new ideas. Salary comes second.' Weiqi Tang, who has nearly finished his MSc in Bioinformatics, is mainly looking for a company where he can go on developing. 'I want to work as a data scientist. The salary doesn't matter to me, actually, as long as I earn enough to pay the bills. What I want, mainly, is to get the chance to grow professionally.'

Career Day attracts people from outside Wageningen too, such as Anne-Catherine Ahn, who is rounding off her PhD in Microbial Ecology at the University of Amsterdam. 'I am looking for a challenging job in which I can develop further and have a career.' Student of Biomedical Sciences Manon Boone came to Wageningen from Leiden because she wants to focus on nutrition. 'For me, companies shouldn't be too hierarchical. It's important to have a say in things, and opportunities to grow.'

And what are the employers looking for? Edwin Donker, who represents the Directorate General for Public Works and Water Management, graduated from Wageningen in 2016. He could use some new colleagues. 'We are trying to keep the Netherlands safe and dry with lots of super projects. It is a challenge, and we need a lot of people. Young people with a fresh take on things, who know how society works and take a practical view.'



PHOTO: LIUKZEGERS

▲ Seventy companies and organizations presented themselves at the WUR Career Day.

Agrifirm recruiter Simon Braakhekke is looking for people with an agriculture background, to retrain them as salespeople. 'You might expect our advisors and salespeople to have a commercial background, but for us it's about sales based on specialized knowledge. It really has added value on the farm if you know what you are talking about.' **LZ**

MEANWHILE IN... THAILAND

'I have never seen such severe smog'

Bangkok has been suffering from severe air pollution for weeks. Schools have been closed, playgrounds are deserted and surgical masks are sold out. The Thai government has sent up drones to spray water in an attempt to lower the concentration of fine particles. PhD candidate Chanoknun Wannasin thinks improving public transport would have more impact.

'I am specialized in environmental science. It is very frustrating for me to see this happen in my home country. I went back to Bangkok this Christmas, and the situation there was quite bad. In the six years I lived there before I came to the Netherlands, I never saw such a severe situation. Almost everyone wore masks on the street; I really felt the tension. I had to fly to another city near Bangkok and when I looked out of the plane window, it was like a scene in horror movie: nothing but yellowish-black smog. When I came back to the Netherlands, I really felt the difference in the air I breathe.

I think there are three causes. Firstly, Bangkok has some of the busiest traffic in the world. The public transport vehicles are very old; if you drive behind a bus in Bangkok, you



PHOTO: SHUTTERSTOCK

can see black smoke coming out. Secondly, climate change has quite some influence on us. It was reported this year that the air was very still over Bangkok. I could barely feel any breeze in the city, and it was very dry. There was no flow in the air which resulted in a heavy sedimentation of dusty substances. Thirdly, nearby Bangkok, there are a lot of mining areas which produce a lot of dust. Unfortunately, the government has not yet taken any real action. I think the artificial rainfall is a waste of money, as it only helps temporarily. I understand solving this pollution takes time, but the government can at least improve public transportation. I heard that the government has appealed to scholars in various universities to come up with solutions. This sounds like a good start to me.' **CC**



Chanoknun Wannasin, a Thai PhD candidate with Hydrology and Quantitative Water Management, comments on recent events in her home country.

YOU ON CAMPUS

During exams and resits, the Bongerd Sports Centre is full of hundreds of students. Among them, Lotte de Vries (20), who just sat an exam for her BSc in International Development Studies.

'In my first year I found my degree course quite easy. Then I started doing all sorts of other things on the side, and now it's getting a lot more difficult. I slightly regret taking it all on at the same time,' says Lotte. She does four to eight hours a week of voluntary work for a foundation called Stichting Present. 'That is a nationwide organization that tries to link people who could use some help with people who can offer help. In Wageningen, these are often groups of students, who might come and do something like some painting for someone who has no money and no social safety net.'


Lotte does not take part in those kinds of one-off projects herself, but is doing nine months of 'social service' with the foundation. 'The government has a plan to make so-

cial service compulsory. It hasn't happened yet, but you can still do it voluntarily.' One of the things Lotte helps with at Present is linking projects with volunteers. 'Before the winter we had a project in which we linked up lonely

'My degree programme is about poverty abroad, but there are poor people here too'

people with others. My degree programme is about poverty abroad, but we have poor people in the Netherlands too. Stichting Present tries to do something about that.' Apart from this voluntary work, Lotte also serves on the board of student society



SSR-W. 'SSR has several sister organizations that come under one umbrella. I'm on the board of that organization as secretary. I write minutes and keep in touch with external parties. I'm the face of the organization, in a way.' Lotte applied for this job for second-year members when she was still in her first year. 'That makes me the only second-year on the board now. And I'm the only woman.' She spends a lot of time on this work. 'Ten to 15 hours a week, 20 even sometimes. And the national board's schedule takes no notice of exam week in Wageningen. Luckily I am quite good at studying and there are resits as well.'  AvdH

'Slow down and enjoy the journey of life, the snow said'

Have you ever wondered what life might look like in slow motion? Blogger Kaavya Raveendran thinks she knows. A few weeks ago, when Wageningen was painted white with snow, it seemed to her that everything was being played at half speed.

'I was sitting in my office having lunch with my colleagues, when one of them pointed to the window and said: "It has started". And that's when my excitement started too. When everyone strategically left for home early out of fear of getting stuck in snow, I didn't realize that I should too, and I simply sat and sat, finishing my odd jobs.

Meanwhile, I saw people playing outside, building snowmen, driving the snow-capped cars and walking their bikes. Wait, what? Walking their bikes?!! That's when I realized that I would have to as well.

SNOW-MO

I live four kilometres away from work. So walking that in the snow might take forever. I therefore gulped back my fear of slippery surfaces and attempted to bike slowly through the snow. And, surprisingly, it was not slippery at all; it was just harder to peddle your way through and maintain your balance at the same time. So, I joined the herd of cyclists who were busy


doing the same thing. That was when I noticed the snow-mo. I looked around and it was as though everything was being played at half speed. The cars were strolling down the roads, while the cyclists were dawdling along. People were dragging their feet through the snowy footpaths. Light showers of snow were falling in slo-mo. At this point, my cycling struggle was transformed into pure bliss. I slowly made my way to my house while fully enjoying the slow-paced life that surrounded me. I loved how peaceful and quiet it felt. It was as though a busy student city had been tranquillized.

BLOG



Kaavya Raveendran is doing the MSc in Food Technology. You can read her blog on resource-online.nl/blog.

LIVE THE PATH

The snow made a brief visit this winter, but it sure did leave a lesson behind: slow down and enjoy the journey of life. We all are working towards something that we want to achieve, but our desire for that something becomes so big that we forget to fully live the path to attaining it.' 

Wageningen Master's students do internships and thesis research all around the world, getting to know their field and other cultures. Here they talk about their adventures.

'Everyone on the island is very nice'

'Actually I had plans to go to China but sadly I was turned down because there wasn't a place at the company. The chair group had a list of internships and there was one about erosion in farming areas on St Kitts and Nevis, two small Caribbean islands. In the first and last weeks I mainly worked in the office. Usually I worked from eight to four, making GIS (geographical information system, ed.) maps. I also had to consult other people a lot and visit other agricultural organizations. In the middle period I travelled around both islands for field work. I took samples, measured slopes and interviewed farmers. It was an extraordinary experience, but I found interviewing difficult. I was fine at having a chat, even about erosion. But as soon as I started asking questions as a scientist, I found it hard to get answers out of people.


TO CHURCH

I lived in an apartment just outside the capital. I was alone there, but it was part of the landlady's house. On my first day in the office my colleagues asked me straightaway if I would go to church with them on Sunday. So the first Sunday I went along with someone and it was so friendly I ended up going almost every Sunday. After the service we socialized, had a barbecue and played games. I also played with the church football team.

There is not much to do on the island, so in my spare time I often went for a walk. I usually went alone but on one of my walks I met a group of people who invited me to go walking again the next weekend. You get to know people that way. I also went snorkelling, kayaking and I even learned to drive. So I can drive now, sort of.

EXPENSIVE BANANAS

Everyone on the island is very nice and they help you with everything. It's easy to get a lift. The guidebook advises against that, but I did it several times. Taxis are just too expensive. Together the islands are about one and a half times the size of Texel, so you can go all around one island in two hours. Over the months I saw everything.

Shopping is very expensive, as nearly everything is imported. The islands are dependent on what comes in from the US and Jamaica. At the end of the week, the freezers in the shops are really empty. Once I inadvertently paid nine euros for six bananas. I paid in local money and only realized afterwards how much it actually was.' 

THE WORKS



Who? Michelle Westdijk (20), Bachelor's student of International Land and Water Management
What? Internship at the Caribbean Agricultural Research and Development Institute
Where? St Kitts and Nevis (a Caribbean island state east of Puerto Rico)

More interviews
on resource-online.nl



In memoriam

Wim Beverloo



Wim Beverloo, a former member of the Food and Bioprocess Engineering subdepartment, passed away on 22 January 2019 at the age of 89. Wim was born in Rotterdam on 22 July 1929. In 1956, he graduated in Delft with a degree in chemical engineering, after which he worked for the Koninklijke Soda Industrie company in Delfzijl. In 1958 he joined the Agricultural College's Technology department (which became the Food and Bioprocess Engineering subdepartment). Together with Prof. Leniger, he wrote the course reader 'Introduction to Technology' for the Food Technology degree programme. It was published in 1975 as *Food Process Engineering*. In 1987, the Food and Bioprocess Engineering chair was split into the Food Process Engineering chair and the Bioprocess Technology chair. As a member of the latter group, Wim published the much talked-about article 'The bioethanol fairy tale' in

1992. He calculated that gasification of fast-growing wood was the best option for green energy and that a verge seven kilometres wide along motorways would be needed to keep our vehicle fleet running. He concluded: 'The cultivation of energy crops does not serve any social purpose other than subsidizing employment for farmers.' The politicians were not amused. During a Royal Netherlands Academy of Arts and Sciences debate in 2015 on 'Biofuel and wood as energy sources', the British energy expert David Mackay estimated the verge would need to be eight kilometres wide. Wim was way ahead of his time. Not for nothing did we call him 'our process engineering conscience'.

Wim avoided confrontation, but he looked for dialogue. We remember him as a friendly, wise and patient man who was always there to advise and help anyone who needed it.

Hans Tramper and René Wijffels, on behalf of the Bioprocess Technology chair group

In memoriam

Jeroen Bool



We were very saddened by the news we received recently that our ex-director, Jeroen Bool, has passed away. Dr P.H. Bool was director of the Central Veterinary Institute (CDI) from 1971 to 1986. At the CDI, he firmly linked the fundamental veterinary research with the applied research. Working with the ministry of Agriculture, Jeroen Bool drew up plans to move the various branches of the CDI to a single location, Lelystad. The aim was to organize the institute by discipline, and no longer in sections for different animals. It was an exciting period, with building plans and the establishment of the new organization. The highlight for this 'master builder' was the opening of the building on the Edelhertweg in 1982. He remained involved in our institute to the end. His spirit

proved strong and he actively sought opportunities to engage in scientific debates. Bool made an important contribution to the CDI's commemorative book about its history, published in 2005: *Streng wetenschappelijkheid en praktische zin, een eeuw Nederlands centraal veterinair instituut, 1904-2004*.

On 11 June 1986, Jeroen Bool was awarded an honorary doctorate in veterinary science by Utrecht University, for his important contribution to the institute and his scientific research during his early career.

Jeroen Bool's perspective was broad and while he was director he tackled the themes of human and animal welfare, environmental problems and development cooperation.

Ludo Hellebrekers, on behalf of Wageningen Bioveterinary Research

In memoriam

Hans de Vries



We have sadly learnt that our former director Hans de Vries has passed away. Prof. H.W. de Vries was the director of ID-Lelystad, the institute for animal husbandry and animal health, from 1999 to 2004.

Hans de Vries had been closely involved in the activities of the former ID-DLO since the late 1990s as a member of the executive board of the foundation. In May 1999 he became ID-Lelystad's new director. In 2001, all activities at Wageningen UR were organized into five thematic science groups that combined the activities of the university and the DLO institutes. ID-Lelystad became part of the *Dier* (animal sciences) group. Hans de Vries became the managing director and chair of the science group's board of directors.

2001 was a real crisis year for ID-Lelystad. The year started with the threat of BSE (mad cow disease).

All cattle for slaughter had to be tested as of 1 January. ID-Lelystad was testing about 3000 samples a day. ID-Lelystad also played a leading role in the efforts to get a foot-and-mouth epidemic under control. De Vries had to put together a crisis team for the third time in September of that year for anthrax diagnostics, in which ID-Lelystad had an important task as the national reference institute. With all these activities, Hans de Vries always managed to position the institute in its various organizational manifestations as a robust institute that could play a crucial part in combating animal diseases.

In 2003, the *Dier* science group became officially known by the English name of the Animal Science Group (ASG). In 2004, Hans de Vries announced that he would be stepping down as managing director of ASG. He was giving up his job for health reasons.

Ludo Hellebrekers, on behalf of Wageningen Bioveterinary Research



Give us fruitfull feedback

Check your mailbox and complete the survey!

It will only take 10 minutes to complete the survey, which will be available until 22 February!

For more information about the *Medewerkermonitor*, please check Intranet.

Announcements

Help LHBTQ+ refugees through SHOUT

SHOUT's AZC (asylum-seekers centre) support committee aims to support LHBTQ+ refugees staying in the reception centres in Wageningen. This includes lending a listening ear in conversation with the refugees, and undertaking nice activities. The committee is looking for people who would like to conduct these discussions and people who would like to be an AZC buddy for nice activities. More info: info@shoutwageningen.nl

Herta Macht Thesis Prize 2019

The Thesis Prize at the University of Groningen's Faculty of Spatial Sciences is for talented young people and aims to promote the cultural aspects and the social relevance of the spatial sciences. Participation is open to every Master's student in the Netherlands with a thesis not older than two years, which was awarded a grade of 8 or above. The prize is €1000. More info: rug.nl/frw/organization under 'Lectures and symposia'. Deadline for submission: Tuesday 12 March.

Lettinga Award 2019 – the call is open

Do you work with urban, industrial or agricultural wastewater and do you have an innovative project idea for closing resource cycles by deploying anaerobic technology? The Lettinga Award can help you take your idea to the next level. Moreover, you could win €10,000. Present your idea in a PowerPoint presentation (max. 10 slides) and include a short abstract of a maximum of 500 words. The judges will select the five best ideas and provide feedback. The winner will be announced at the IWA World Conference on Anaerobic Digestion (AD) on 23-27 June in Delft. Deadline for applications: 20 February. Info: leaf-wageningen.nl or via info@leaf-wageningen.nl.

Agenda

Friday 15 February, 15:00-18:00 VELUWE ELECTION DEBATE 2019

The Friends of the Veluwe Foundation and the quarterly magazine *Nieuwe Veluwe* are organizing a debate in the run-up to the provincial and regional water authority elections on 20 March. Candidates from the Gelderland political parties are going to discuss four current issues with each other and the audience. These include the need for an agricultural transition, the fragmentation of the Veluwe, the regulation of recreation and tourism, the impact of the new spatial planning policy and a vision on the Veluwe in 2030. The debate will be in Dutch. Location: Schip van Blaauw, Generaal Foulkesweg 72, Wageningen. Register with redactie@nieuweveluwe.nl or 0317-425880.

Tuesday 19 February, 20:00 STUDIUM GENERALE LECTURE SERIES 'ECOLOGICAL INEQUALITY': INEQUALITY IN THE ENERGY MARKET

There's an intense debate on the energy transition: who is responsible for the transition and who should pay the costs? Speaker: Professor Annelies Huygen. Venue: Impulse (Building 115, Stippeneng 2).

WUR.NL/STUDIUMGENERALE

Thursday 21 to Sunday 24 February MOVIEWEEKEND FILMHUIS MOVIE W

You can enjoy outstanding films in combination with tasty food and a drink at the FilmCafé. The opening film is the premiere of *Schapenheld* (with English subtitling), in which we follow one of the last remaining Dutch shepherds to work in the traditional fashion, as he criss-crosses beautiful Dutch landscapes. In this gripping documentary, the viewer is drawn into the struggle of idealistic shepherd Stijn and his family to keep going in the hard reality of modern entrepreneurship. The film will be introduced by Grebbeveld Schapen & zo (grebbeveld.nl) and there will be a Q&A session afterwards. Location: Wilhelminaweg 3A, Wageningen. €6.50/€5.

MOVIE-W.NL

Thursday 21 February 18:00-21:00

KICK STRESS, EMBRACE HAPPINESS INTERACTIVE FORUM

Are you feeling stressed or have you ever experienced stress? Mental illness, especially stress and burnout, are critical issues affecting students at different stages of their study. S&I, Student Council party for Sustainability and Internationalization, wants to create WUR awareness on stress prevention and inform students on how to study successfully with minimal stress. Join the interactive forum to discuss with Mirjam Pol (study stress reduction expert and author of several books), Nadja Schmiemann (student dean), Esther Ruijters (student psychologist), Annemarie Teunissen (study advisor), Jessica Duncan (teacher of the year 2016/2017) and representatives from SWU Thymos and WUR students. Emma Holmes of the Wageningen Comedy Club will moderate the Forum. Snacks and drinks afterwards. Venue: Thuis Wageningen (Stationsstraat 32). More info: s.i@wur.nl.

Tuesday 26 February, 20:00 STUDIUM GENERALE LECTURE SERIES 'ECOLOGICAL INEQUALITY': GOVERNING TRANSITION - DEALING WITH THE BLIND SPOTS

Are electric vehicles and charging poles only meant for the rich? Are energy cooperatives inclusive enough? Is an eco-lifestyle realistic for everyone? Speaker: Dr Shivant Jhagroe. Venue: Impulse (Building 115, Stippeneng 2).

WUR.NL/STUDIUMGENERALE

Thursday, 28 February WEES SEMINAR & WORKSHOP: PROFESSOR JANE M. REID (UNIVERSITY OF ABERDEEN, UK)

Seminar: 'Integrating movements into evolutionary ecology: Fitness, dispersal and seasonal timing' in Orion C3020, 16:00. Drinks and discussion afterwards at The Spot. Workshop: 'Emerging opportunities and challenges from long-term field studies' in Orion C4014, 13:30. Registration required via M.Lindner@nioo.knaw.nl.

WEESWAGENINGEN.NL

Colophon

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>>TYPICAL DUTCH



ILLUSTRATION: HENK VAN RUITENBEEK

Singing goodbye

It was my first day at the university. I was meeting with a study advisor, an experienced and respected professor. Suddenly the phone rang, and the professor engaged in a short conversation with a colleague. What came at the end of this conversation, however, totally blew me away.

The Dutch have a very special way of saying goodbye. The cheerful *doei!* is quite well known, and possibly also the insistence on declaring precisely when we will be seeing each other next (*tot morgen, tot maandag*). However when it comes to ending phone conversations in the Netherlands, I encountered a phenomenon here that was new to me.

First of all, the end of the conversation is extremely drawn out. It involves a series of *da's goed's* and *ja's* that indicate the conversation is over but for some reason is still not being terminated. Next come several indistinguishable sounds like *joehoe* and *joepie*, eventually leading up to the anticipated *doei, dag* or *doeg*. But perhaps the strangest thing of all is the fact that this whole ritual is done in a cheerful sing-song voice, with tones going up and down, that is very hard to describe and is especially unexpected when coming from a respected older male professor.

My Dutch friends seem to be unaware of this habit, which got me wondering if I was hallucinating that day with the professor. But when I checked with other foreign friends, they all shared my experience, and were equally surprised to hear such singing in the most unexpected contexts.

📍 David Katzin, PhD candidate in the Farm Technology group, from Israel

The strangest thing about the *doei!* ritual is that it is not so much spoken as sung

Do you have a nice anecdote about your experience of going Dutch? Send it in! Describe an encounter with Dutch culture in detail and comment on it briefly. 300 words max. Send it to resource@wur.nl and earn twenty-five euros and Dutch candy.