
Battle cry

'We must stand up to Elsevier' | p.6 |

Cheep!

Chicks really must eat after 36 hours | p.9 |

No more rooms

Dutch students out of luck at present | p.27 |

RESOURCE [EN]

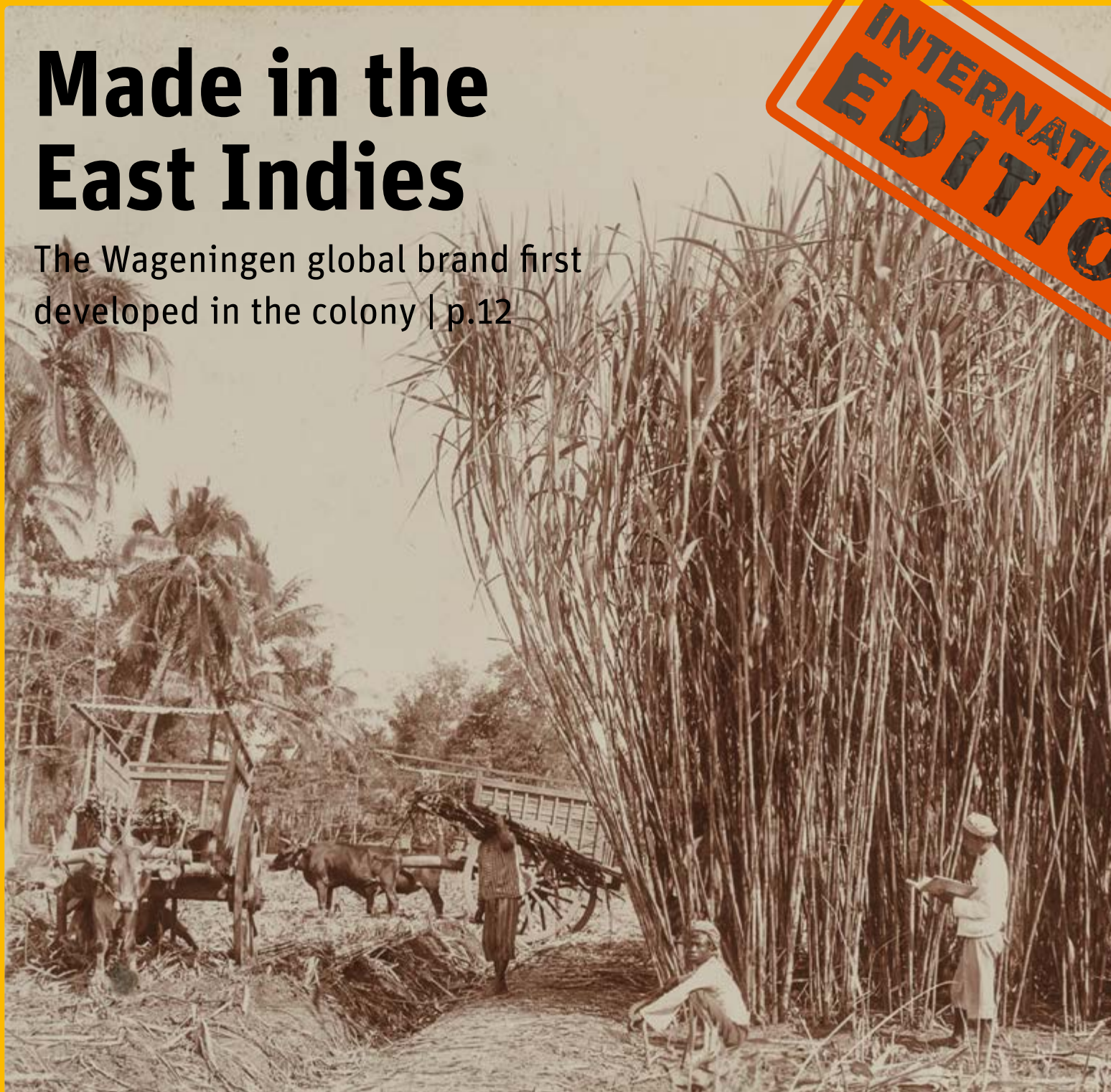
For everyone at Wageningen University & Research

no 11 – 25 January 2018 – 12th Volume


Made in the East Indies

The Wageningen global brand first developed in the colony | p.12

INTERNATIONAL EDITION



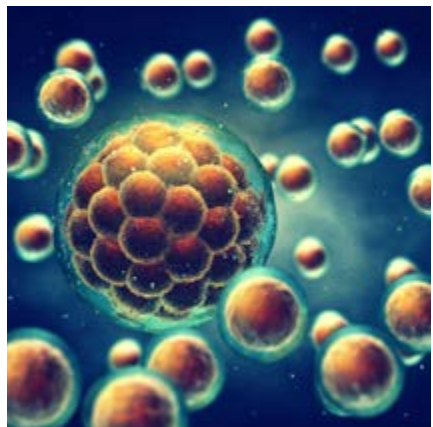
257 KILOS

Douwe Zantinge came second in the Weight-lifting National Championships on Saturday 13 January. In two sessions the MSc student of Plant Biotechnology managed to lift an amazing 257 kilos from the ground. Quite an achievement, especially in view of the injury he suffered just before the contest. 'I had a few stiches in my shin. Which is precisely the part of your body that touches the halter.' So he can do even better, he implies. He hopes to show that at the European Championships in October. That is why Zantinge is training daily now.  LvdN, photo Sven Menschel

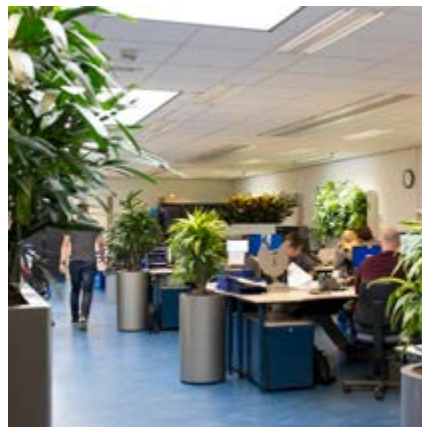


>> CONTENTS

no 11 – 12th volume



>> **4**
IT'S ALIVE!
 Science Week is about the nature of life



>> **18**
HAPPY WORKERS
 Do plants make offices healthier?



>> **24**
FARMERS' LOGIC
 'We are not nature conservationists'

AND MORE...

- 4 Cronin kicks off centenary**
- 6 Forum attacker had psychosis**
- 7 Shell children's project on campus**
- 8 Chemists measure smallest force**
- 9 Few options for pulse trawlers**
- 10 Microplastic from car tyres**
- 22 How can WUR remain visible in town?**
- 26 Caribbean islands want their 'brains' back**
- 27 Meanwhile in Venezuela**

BEHIND THE BARN DOOR

What a great initiative by Toon te Poele. This farmer's son opened the barn door at his parents' dairy farm in the Achterhoek region to tell his side of the story (see p. 24). For his father's cows don't go outside. That sounds wrong and distressing for the cows but Toon wants to explain why they have made this choice. The Plant Sciences student also explains why the farm does nothing to protect grassland birds and how the milking robot rewards cows with chunks of food. How transparent can you be? Toon has broken the taboo and shown us the scales for weighing up options on a dairy farm. On the left the economic aspects and feasibility, on the right animal welfare and affection for the farm animals. The five students who went on his guided tour are obviously a drop in the ocean but it's a start. Because eventually Toon wants everyone to ask themselves how it is possible that a carton of milk costs less than one euro in the supermarket. Next time I'll go along too.

Edwin van Laar



>> 'It is simple: the chicken came before the egg' | p.11

CHEMIST CRONIN KICKS OFF CENTENARY

The university's centennial celebrations will kick off on 9 March with the British chemist Lee Cronin. As the keynote speaker at the Dies Natalis event, he will talk about his quest for the origins of life.

Cronin (44) is professor of Chemistry at the University of Glasgow, where he heads the very successful Cronin Group. This group researches the creation of complex chemical structures in inorganic chemistry. One of its aims is to develop an inorganic biology: a form of life that is based not on carbon but on any random dominant element.

Cronin wants to redefine what is meant by life. He sees the carbon-based biology on Earth as a special case. Now he is looking for

the underlying general principles, whereby the evolutionary principle of the survival of the fittest is the driving force. According to Cronin, there are general principles, driven by evolution, that always lead to life. In a nod to Einstein, he calls this the general theory of evolution.

The decision to invite Cronin as a keynote speaker is connected to the theme of the centennial celebrations (Wisdom and Wonder). It also ties in with the theme of the masterclasses (Unravelling Life) that will be held on that day by the scientists who are being awarded an honorary doctorate. The Science Week that follows the event will centre on the question of what life is exactly (see the article below). **© RK**



PHOTO: WIKIPEDIA

HOW MUCH DO WE KNOW ABOUT LIFE?

What is life, exactly? What do we know about life, and what don't we know yet? These questions will be addressed during the Science Week at the start of Wageningen University & Research's centenary celebrations.

Professor of Philosophy Marcel Verweij, who is on the centenary symposia and conferences committee, didn't take long to come up with his preferred topic for the Science Week. 'For a philosopher, of course, the question of life is one of the big issues.' But quite apart from the philosophical aspects of it, you can also approach the theme 'What's life?' very empirically, says Verweij. 'To what extent can we make the move from inorganic matter to living material ourselves? That fascinates me. Especially because this is about the limits of our knowledge. Scientists love to talk about what they know. But it is much more exciting to know what we don't know yet, and might never be able to know. I hope that is what we shall talk about.'

The Science Week is a three-day event in which a different aspect of life will be addressed each day. On the first day, 12 March, the focus will be on the question of what exactly life is. How did life arise, and where does the border

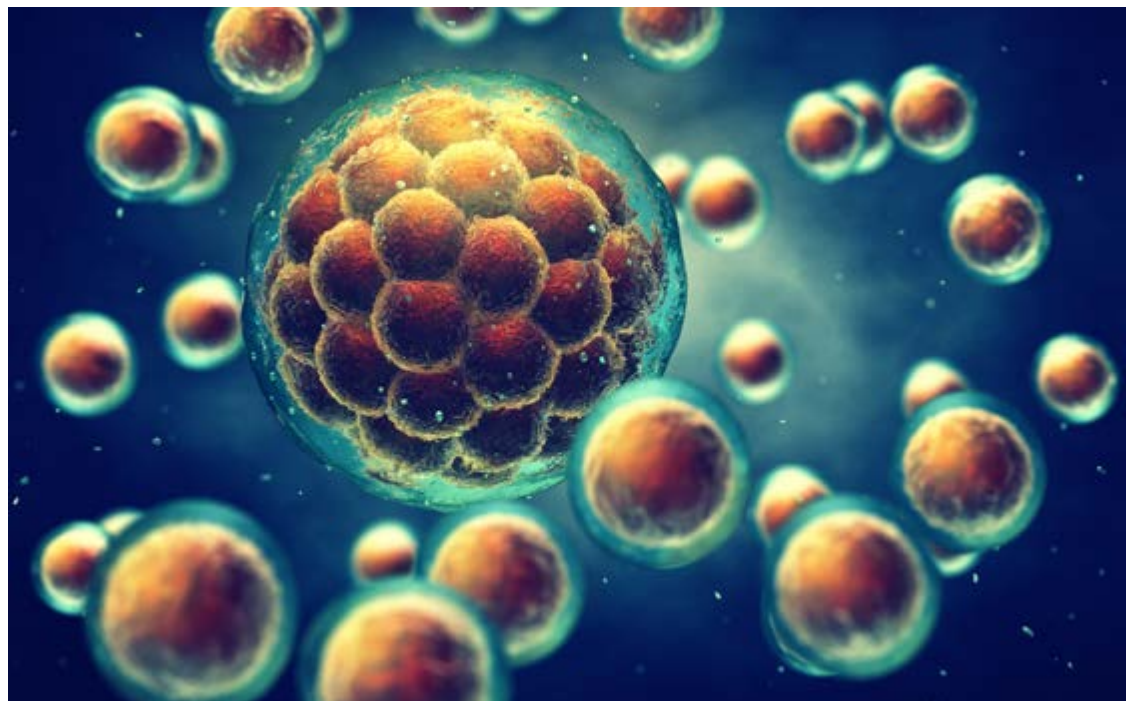


PHOTO: SHUTTERSTOCK

lie between life and death? The main guest speaker on that day is Karen Nelson, director of the famous American J. Craig Venter Institute.

The topic of the second day will be biomimicry: what can we learn from nature? When you are looking for answers to questions it can be smart to imitate nature. The speakers on this day include alumnus David Lentink of Stanford University, who worked in the

WUR Experimental Zoology group until a few years ago. He is an expert on natural flight movement.

The third and final day revolves around manipulating genetic material. New techniques such as Crispr-Cas and gene drives open doors to amazing applications for literally changing life forms. Speakers who will share their perspectives include the Wageningen Crispr-Cas pioneer John van der Oost. The focus of the final

evening will be *Frankenstein*, the famous book by Mary Shelley which came out precisely 200 years ago.

A lecture on *Frankenstein* will be given by Philip Ball, an American, a former editor of *Nature*, and the writer of the book *Unnatural: the heretical idea of making people*. Together with the audience, Ball will ponder the extent of scientists' responsibility for their discoveries. **© RK**

'LEAVE GMO POLICY TO MEMBER STATES'

The European Union should leave the decision on whether to admit GMOs to the individual member states, recommends a group of academics that includes Wageningen legal expert Bernd van der Meulen.

The EU's GMO policy has reached an impasse. Brussels constantly puts off decisions and recommendations on risk assessments and the admission of genetically modified crops because of divisions between the EU coun-

tries. To break this stalemate, decisions about admission should be taken by the national governments, say the group of scientists this month in *Nature Biotechnology*.

'In our proposal, the European Food Safety Authority (EFSA) will continue to assess the safety of GMO crops,' says co-author Van der Meulen. 'If the EFSA decides on scientific grounds that a GMO crop is safe, each EU member state can decide for itself whether to allow the crop in its territory.'

By divorcing the safety analysis from the political decision-making completely, it is possible to have the admission procedure take place on a scientific basis. The national parliaments can then take the political decision about GMOs – do we want them or not? 'At present, opponents of GMOs refuse to accept the safety analyses because they don't want any GMOs. As a result, the scientific assessment of the safety is being undermined,' says Van der Meulen. **AS**

COLUMN|GUIDO

Triple blind

So how do you know what's true? Karl Popper declared it to be impossible, and said falsification is as close as we can get: you posit a hypothesis, and as long as it hasn't been disproved, it is assumed that it could be true.

But of course you can only do that disproving properly if you are objective. I did my most recent study with researchers from Yale University. One of their experiments produced a surprising result, which they wanted to replicate. It's not easy to be objective about a replication because you already know what came out of the original experiment.

'Normally, while analysing you unconsciously check whether the outcome is what you expect'

Nobel Prize winner Richard Feynman once gave scientists a piece of advice: *'The first principle is that you must not fool yourself – and you are the easiest person to fool.'* Because I think I am smart enough to be able to fool myself, I am doing this study triple blind: the test subjects don't know which drink they are getting, I don't know either, and even during the data analysis, I don't know who got what.

This is a new experience for me, and I am very positive about it. Normally, as you do the analysis you unconsciously check whether the outcome is what you expect. Hopefully I can present the results at a conference later this year: *'After you've not fooled yourself, it's easy not to fool other scientists. You just have to be honest in a conventional way after that.'* **CS**

Guido Camps (34) is a vet, and will soon graduate with a PhD for MRI research on stomach emptying in humans. His hobbies are baking, beekeeping and unusual animals.



in brief

>> **ICONIC PROFESSOR** **Ies Zonneveld has died**

He always attended the foundation day event and the opening of the academic year – a small, bent professor with decorations on his gown. Isaac ('Ies') Zonneveld (1924-2017) was professor by special appointment in Wageningen. He passed away at the end of December, aged 93, in a nursing home in Enschede. The Biesbosch nature area was the constant theme in the life of the landscape ecologist. From 1944 to 1998 he would climb up a pylon every year to take aerial photos of the nature area. He used those photos to develop a method for researching the vegetation and landscape. Zonneveld studied Tropical Forestry in Wageningen and became a leading figure in Dutch nature conservation.

>> **KNAW ADVICE** **'Replicate experiments'**

Researchers should replicate other scientists' experiments much more often in the fight against sloppy and fraudulent science, even if they are not keen on doing so. This advice comes from the Royal Netherlands Academy of Arts and Sciences (KNAW). According to the advisory committee headed by Professor John Mackenbach, irreproducible research is holding back scientific progress. What is more, scientific errors can cause damage. Therefore studies should be replicated more often and money earmarked for this, says the committee. Scientists should also reveal more details about their research methods to facilitate replication. **HOP**



PHOTO: GUIT ACKERMANS

>> **OLD COMPUTERS** **New lease of life**

Nine old WUR computers have been given a new lease of life in Amsterdam's K neighbourhood. Land Use Planning professor Leonie Jansen-Jansen came up with the idea. She heads the R-LINK project, which looks at how bottom-up initiatives in area development can help tackle social issues. One of the subprojects is 'Heart for the K neighbourhood' in south-east Amsterdam, where local residents are working on additional facilities for the locality. She heard they didn't have any computers to produce a newssheet and immediately thought of the discarded computers from her chair group in Wageningen. With permission from WUR, the computers are now being used in Amsterdam. **RK**

'WE MUST STAND UP TO ELSEVIER'

In the battle for open access, Dutch scientists should heed the example of their German colleagues, who have taken a stand against Elsevier publishing house. Bram Büscher, professor of the Sociology of Development and Change, proposes this in an editorial response in *Geoforum*.

More than 200 German academic institutions have taken a stand against Elsevier under the flag of 'Projekt Deal'. Their aim is to force Elsevier to adapt its business model and do more to promote open access. Early this year, the conflict almost led to the researchers in question being excluded from academic journals published by Elsevier.

Büscher fiercely condemns the practices of publishers such as Elsevier, who refuse to give up their business model. 'They have a fantastic business model at present. Elsevier's profit is often between 35 and 40 per cent. That is simply scandalous. That profit

is made from research conducted with public funding. That money should flow back into science. And that is not happening at the moment.'

Geoforum is published by Elsevier and is not open access. That means that German readers could be deprived of the journal if negotiations with Elsevier break down. Büscher proposes to the *Geoforum* editors that they should show solidarity with the Germans and consider turning their backs on the journal if Elsevier does not drastically adapt its business model. He wants to bring things to a head.

The issue concerns *Geoforum* in the first instance, but the appeal is intended for a wider audience, says Büscher. 'This is our way of showing our German colleagues that their battle is important. That is why I am also appealing to my Dutch colleagues. Maybe we should join forces and create our own 'Projekt Deal'. I think it is time to take a stand.'

The Universities' Association VSNU negotiates about open access with the major publishers on behalf of the Dutch universities. Progress has been made with some of them. 'A few big steps have been taken,' acknowledges Büscher, 'but that is only half the work.' He cites the 'green open access formula', a form of open access in which the subscription system remains intact. 'Those are phoney constructions in which the unfair business model remains in place.'

Maybe we should set up an organization which will help journals to switch completely to open access, suggests Büscher, allowing profits to flow back into publicly funded science. 'Say the Dutch universities put five per cent of the budget they currently spend on journals and books into an independent body of that sort.' That would fill a fair-sized fund. Between them, Dutch universities pay out 42 million a year to publishers. Elsevier is by far the biggest supplier of journals. **✪ RK**

RIKILT DESIGNATED EU REFERENCE LAB

As of 1 March, Rikilt will get a new task within the EU. The institute will become the new European Reference Laboratory (EURL) for research on toxic plant materials and mycotoxins in food products.

Each EU country has its own reference lab where food products are analysed. As an EU Reference Laboratory, Rikilt has to make sure that all the national reference labs use the correct analysis methods for the legally required checks on toxic substances in food and animal fodder.

Some food products naturally contain toxins. An example is the hydrogen cyanide in almonds. This does not usually cause any problems but if a plant becomes stressed, for example due to drought or a plague of insects, it will produce more toxins. Toxic plants can also end up in food because weeds

get caught up in the harvest by mistake. In the past there was no legislation for this, says Rikilt researcher Monique de Nijs. 'We didn't know much about it but now more research has been done.' Legislation has now been introduced based on those research results and it needs to be enforced.

A key task for Rikilt as a reference laboratory is to develop measurement methods and make them available, explains De Nijs. 'If there is already a test for apples, for instance, but pears have to be measured too, we will modify that test or develop a new one.' Rikilt will also be setting up tests that national reference labs in Europe can use for comparing their analysis results against one another.

Rikilt has over 20 years of experience as an EU reference lab, including for growth hormones in animal products. **✪ TL**



PHOTO: GUY ACKERMAN

FORUM ATTACKER HAD PSYCHOSIS

The Wageningen student who injured two people in front of the WUR shop in Forum on Thursday 18 January was in a psychotic state at the time. He has been admitted to a special ward in the Gelderse Vallei hospital in Ede. That Thursday, the student stabbed a fellow student with a comb handle and hit a WUR employee who came between them. The other student suffered minor injuries and was discharged from hospital one day later. The employee, *Resource* journalist Roelof Kleis, had a cut and a black eye. The incident received a surprising amount of media attention. The photo shows police officers guarding the 'crime scene', with paper covering a pool of blood. **✪ AS**

SHELL CHILDREN'S PROJECT COMES TO CAMPUS

Inspiring children to think about the future. That is the aim of Shell's Bright Ideas Hub, which was officially opened on Monday 22 January on the lawn in front of Zodiac. Around 30 students protested against the hub.

The bright yellow 'igloo', which will also be visiting other towns, will stay in the amphitheatre next to Zodiac for two weeks. A total of 35 classes from local schools will be visiting to prepare for Shell's Bright Ideas Challenge. The aim of this competition is to bring children into contact with science and technology in a playful manner, thereby investing in the future, says Shell Social Investment manager Anne Schreuder. The jury includes Nobel Prize winner Ben Feringa and Wageningen food expert and cultured meat designer Atze Jan van der Goot.

The challenge focuses on three topics: clean drinking water, sufficient food and clean energy. 'The world won't change by sticking to the old ways,' an animated computer voice says to the children. 'Dare to think and do things differently. Perhaps your smart idea will transform the world.'

Shell is collaborating in the hub with Wageningen University's science centre for schools. It already organizes its own annual design competition for schools. This year, it decided to link up with the Shell initiative. The collaboration means



that after children have visited the tent, they move on to Phenomena, where Wageningen inventions and research projects are on display. They include Meteorology's measuring tricycle, a blue energy generator and a 3D food printer. Schoolchildren have to use the principle of reverse engineering to figure out what the devices do and how they work.

On Monday afternoon, around 30 students protested in front of the Bright Ideas Hub. They think Shell does not belong at a sustainable uni-

versity and can't understand why WUR wants to collaborate with the oil company in this way. 'We realize that Shell wants to use this event to teach primary school children about global problems, but we feel it is wrong to let a company do this that is responsible for so many of these problems,' says student Emiel Spanier of Fossil Free Wageningen.

Incidentally, the Bright Ideas Hub is not just for children: anyone else who is interested can take a look on any day after 15:15. **📍 RK, LvdN**

VISIT BY PRONK

There is something weird about this photo. It has '1980s' written all over it: the shoulder pads, the listener's amazing The Cure-style hair, the microphone in front of Jan Pronk. Except that didn't the Dutch Labour Party politician, born in 1940, look younger in the 1980s? And aren't those glasses frames a bit too modern? The date on the back of the photo solves the mystery. Despite the New Wave atmosphere, this Wageningen visit by Pronk was in 1995. Were you there? Or do you know who that is sitting next to the politician? If so, pop into the *Resource* office in Atlas or send an email to edwin.vanlaar@wur.nl. WUR is celebrating its centenary in 2018, so the *Resource* journalists have been digging up interesting photos in the archives.

**Look up the 100 years...
of visiting dignitaries
on resource-online.nl**



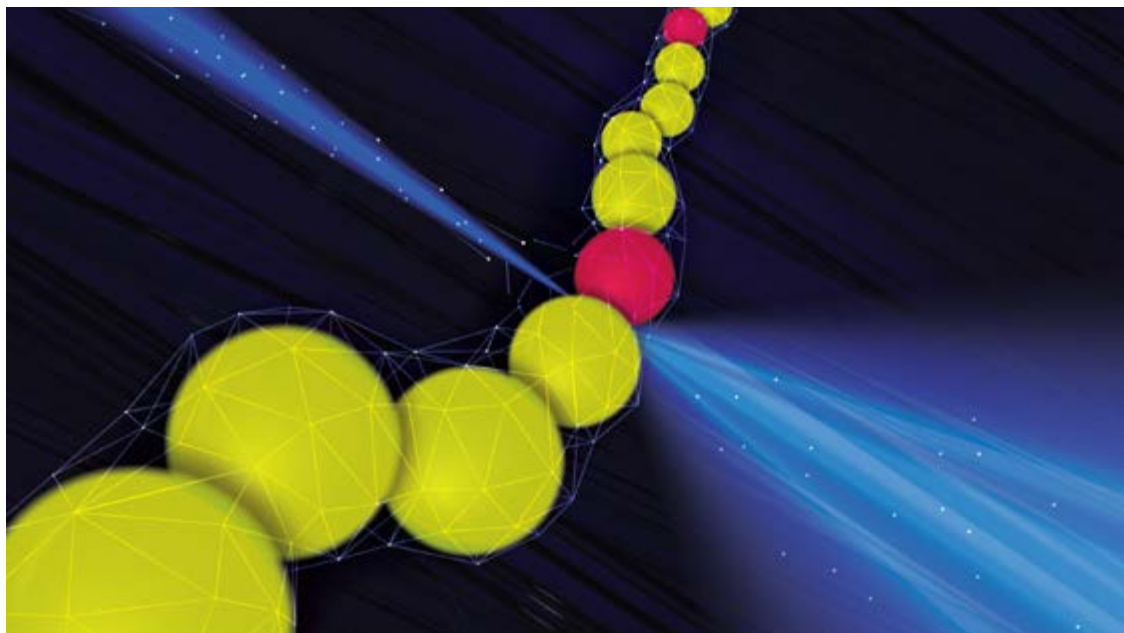
PHOTO: GUY ACKERMANS

CHEMISTS MEASURE SMALLEST FORCE EVER

Researchers in the Physical Chemistry and Soft Matter chair group have developed a method for measuring the ultra-small forces in a single molecule. This is the smallest force that has ever been measured.

In the past, it was only possible to measure whether forces were or were not present in a molecule. 'This new method lets mechanical forces be measured not just in black and white, but in fifty shades of grey,' explains Joris Sprakel of Physical Chemistry and Soft Matter. 'Imagine a molecule the size of a human being. This is comparable to me standing at a distance from you and being able to measure not only whether there is a grain of sand on your shoulder but also how big that grain is.'

Sprakel says developing the method was a real challenge. That is because the forces are measured with the aid of special molecules that the researchers have designed in such a way that they emit light when subjected to a force. This light is then measured and the researchers can use that to say exactly how much force has been exerted.



The measurements are performed with special molecules that emit light when force is exerted on them.

ed. 'It was extremely difficult to build a setup that lets us measure this for a single molecule because that produces very little light,' says Sprakel. What is more, he only had a small budget to work with as no one saw any potential in the research proposal. That is why his team cobbled together a DIY structure that MacGyver would have

been proud of.

The technique makes new research possible, says Sprakel. 'Scientists know that these forces play a role in many processes but were unable to investigate that further because they couldn't measure the forces. This technique can literally shed light on these processes.'

There are already plans for fol-

low-up research. Together with biochemistry professor Dolf Weijers, Sprakel and his team want to study how these forces influence the development of a plant embryo. Sprakel is also collaborating with Delft University of Technology on the further development of self-repairing materials for spaceships. **TL**

NATURAL ANTIBODIES MAKE HENS ROBUST

Laying hens with more natural antibodies in their blood are better protected against disease. This result comes from PhD research by Tom Berghof in the chair groups Adaptation Physiology and Animal Breeding and Genetics. He thinks this will let businesses breed chickens with more natural resistance.

Natural antibodies are part of a chicken's immune system. These proteins recognize pathogens that the bird has never come across. Berghof thinks they recognize and inhibit all bacterial diseases. He has demonstrated their effect for

one type of bacterium.

Berghof was given a female breeding line by the breeding company Hendrix Genetics. He measured the number of natural antibodies in the blood of the chickens when they were 16 weeks old. He used that data to select two lines, one with a lot of natural antibodies and one with very few. After four and six generations, he exposed these 'high' and 'low' lines to a pathogenic *E. coli* bacterium. In the high line, which had over four times as many natural antibodies, far fewer birds became infected and significantly fewer died.

He made another important finding. Earlier research on robust chickens had suggested a trade-off between production and health: hens that invested more in resistance produce less. But Berghof's experiments did not show this at all. 'The chicks with more antibodies probably invest more in resistance when young, before they start laying eggs, but benefit from this once they begin laying.'

Berghof advises Hendrix Genetics to start selecting for natural antibodies when breeding chickens. 'Then you use the chickens' natural potential. The genetic

route also delivers a lasting improvement as the greater resistance is embedded permanently.'

The benefits to society are considerable, says Berghof. 'Disease will not spread so quickly in a barn of laying hens with a lot of natural antibodies. That will reduce the number of losses, improve welfare and drive down the use of antibiotics. But there will always be animal diseases that are too powerful for the antibodies. You will need vaccination or farm management measures to tackle them.' **AS**

See also Proposition on page 11.

CHICKS CAN SURVIVE 36 HOURS WITHOUT FOOD

When they have hatched, chickens can survive for up to one-and-a-half days without food or drink. If they spend longer without food, they lose weight, more chicks die and growth is slower. These findings come from a study by Wageningen Livestock Research and the Adaptation Physiology group that was carried out in response to protests by animal rights group Wakker Dier.

In poultry farming, eggs are hatched in a machine in a hatchery. Only once most of the eggs have hatched are the chicks collected, sorted, vaccinated and transported to the farm where they will stay until they are slaughtered. 'If they are transported over a great distance, it can take three days before the chicks that hatched first get anything to eat or drink,' says Ingrid de Jong, animal welfare researcher at Wageningen Livestock Research. She says this is rare in the Netherlands because most chicks reach a farm within 36 hours of being hatched.

Wakker Dier finds it unacceptable that the chicks do not get food and water immediately. The organization filed

a lawsuit against the Ministry of Economic Affairs, claiming this was damaging animal welfare. The ministry asked WUR if this is indeed the case. De Jong and her colleagues analysed the available scientific literature. It showed that chicks that are given no food and drink for 36 to 60 hours lose weight. There are adverse effects in the long term as well: there are more deaths and the chicks do not grow so well up to the age of six weeks, which is when broiler chickens are usually slaughtered.

However, the researchers cannot conclude that animal welfare is affected on the basis of their analysis. De Jong: 'The higher mortality figures show that welfare is an issue. But welfare is much broader. Other indicators such as stress, susceptibility to diseases and behaviour observations are also important and they still need to be researched.'

According to De Jong, hatcheries don't give the chicks food and drink because of the risk of infection. 'The main argument is that the chicks still have a bit of the yolk in their stomachs that keeps them going. However, our results show this is not enough.' **TL**



VISION

'Pulse trawlers have few options'



The European Parliament has voted in favour of a ban on pulse trawling. If this goes through, there will be tough times ahead for Dutch fishing businesses, says Arie Mol of Wageningen Economic Research. A return to inefficient beam trawling is hardly a realistic option. 'It is debatable whether banks would want to provide the finance.'

Why is pulse trawling important for the Netherlands?

'Pulse trawling is forbidden in Europe but an exemption was made for part of the fleet. Around 30 percent of Dutch trawlers — over 80 ships — use pulse trawls. One benefit is the saving in fuel consumption. In traditional beam trawling, a large ship uses 30,000 to 40,000 litres of diesel a week, but only half that in pulse trawling. When oil prices are high, this can make the difference between profit and loss. In recent years, Dutch fishing businesses have invested 25 to 30 million euros in the new technology. That investment is now in danger of becoming worthless.'

What is the alternative?

'In the years prior to the introduction of pulse trawling, the trawler sector recorded losses or only marginal profits. Pulse trawling saved the day for the businesses that were allowed to use it. If the ban goes ahead, fishers will have to stop using an efficient method and invest in less efficient technology. A return to beam trawling seems to be one of the few options but it is debatable whether banks will want to finance this given its poor image and revenue model. What is more, the beam trawl is a lot heavier than the pulse trawl and that is more wearing on the ships, so the cost of maintenance and repairs will rise.'

The French are adamantly opposed to pulse trawling. They say it damages the environment and pulse trawlers are emptying the sea of fish.

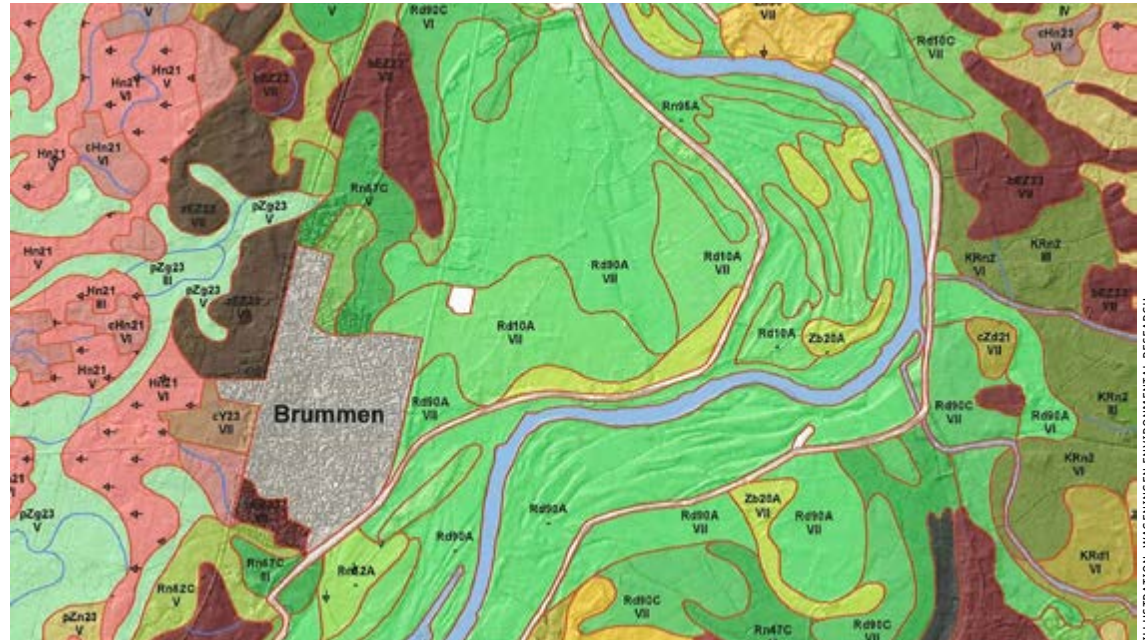
'Wageningen Marine Research is conducting research on the long-term effects of pulse trawling. The provisional conclusions are positive. Opponents want evidence first that there are no adverse effects but it is always difficult to prove that something is *not* happening. The claim that they are emptying the sea is not correct. Dutch pulse trawlers have to stick to their quota too. It is a pity that innovation is being halted in this way.' **TL**

WAGENINGEN SOIL DATA ALL ONLINE

No other country in the world has had its soil surveyed in such detail as the Netherlands. Now everyone can access all that soil data online.

Last year, the soil map and geomorphological map of the Netherlands were put online with free access. Now Wageningen Environmental Research has added the soil profiles as well. That means all Wageningen's soil data has been made available. This puts into effect the Subsurface Key Register Act (BRO) from 2015.

The database contains a total of around 330,000 soil profiles obtained from drilling. This collection has been built up over decades, explains soil scientist Joop Okx. 'The programme started in 1960. The Netherlands' first soil map was completed 30 years later.' Drilling was (and still is) a manual task, using the Edelman drill named after former Wageningen professor Cees Edelman. Drills have now been sunk up to 1.5 metres into the ground over 330,000 times. That is more than 400 kilo-



A section of the soil map of the Netherlands.

metres of soil profiles, according to Okx's calculations.

Measuring started again in 2009. The soil is not a static entity, says Okx. 'The drilling programme focuses on areas where we expect changes. Peatland, for example. Peat shrinks due to oxidation. And

soil levels in the polders can sometimes fall considerably due to draining. We are currently working on the Flevopolder, where ground levels have fallen by as much as 1.6 metres in extreme parts of Almere.'

A couple of thousand holes are drilled every year. Models are used

to combine that drilling data with satellite information and current heights to create up-to-date soil maps. The maps and data are available on the BRO site and that of PDOK (the Dutch national spatial data infrastructure). **© RK**

CAR TYRES BIG SOURCE OF MICROPLASTIC

Car tyres are the main source of the microplastics that end up in the sea via the sewer system and clothing is a good second. These results come from a Wageningen model study by the Water Systems and Global Change group and the Aquatic Ecology and Water Quality group.

The first group is making good progress in global models of the contamination of surface water. One of those models was used by Master's student Max Siegfried to look at the pollution of European seas by microplastics from waste water.

Purification plants play a key role in the calculations. Professor Carolien Kroeze says it is possible to estimate what microplastics go in and come out of those 'point sources'. When that is linked to the efficiency of the purification, it gives a picture of how much plastic ends up in the rivers. Some of the plastic stays behind in the rivers as they flow towards the sea.

Siegfried calculates that 14.4 kilotons of mi-

croplastic are discharged into the five seas surrounding Europe every year. Well over a third (5.6 kilotons) ends up in the Mediterranean, followed by the Black Sea (4.1), the Atlantic Ocean (2.7), the North Sea (1.1) and the Baltic Sea (0.9). These figures are an initial estimate, says Kroeze.

The big surprise according to Kroeze is the composition of the microplastic that ends up in the sea through this route. '42 percent consists of particles from car tyres. We had initially expected personal care products such as creams and toothpaste to be the biggest sources, as there has been so much discussion about them. But that is not the case: they are the fourth and final category, accounting for 10 percent. The tyres are followed by textiles at 29 percent and household particles at 19 percent. A lot of synthetic material has been incorporated in textiles in recent decades.'

The overall picture is still not complete. In addition to the route via the sewer system, PhD candidate Jikke van Wijnen is also looking at the spread of microplastics that end up in the water



42 percent of the microplastic that ends up in European seas via the sewer system consists of particles from car tyres.

via the air or the soil. 'This shows that their contribution is much greater than that from car tyres.' But that publication has not appeared yet. More wear-resistant tyres can still help reduce the contamination of surface water with microplastics, as can better waste water purification. **© RK**

Resource-online.nl gives you the latest news online every day. Here is a small sample from the online items in recent weeks.

DOG BITES MAN



Amsterdam will improve its recording of biting incidents, in which aggressive dogs bite humans or other dogs, so that it can take effective

measures. The municipality was advised on this by Wageningen Livestock Research. The researchers say the severity of the injury in particular gives an indication of how aggressive the dog is and the risk of a repeat. They also recommend setting up a puppy advisory centre.

BINDING STUDY ADVICE



Education minister Van Engelshoven will not be scrapping the binding study advice from the legislation but she does want to review the conditions. She

made this promise to the Dutch Parliament. MPs are worried about the consequences of the binding study advice, admission restrictions at technical universities and selective admissions.

WAGENINGEN VACCINE



The company BunyaVax will be using WUR technology to develop a new type of vaccine for swine flu. Dutch scientific

funding organization NWO is giving 40,000 euros for a feasibility study. Wageningen Bioveterinary Research, which has a patent for the technology, has given BunyaVax a licence to use the technology. The new WUR professor of Veterinary Arbovirology Jeroen Kortekaas is the scientific director at BunyaVax.

CENTENARY PR TEAM



Students are also doing their bit for WUR's centennial celebrations. They have their own office in Forum on the first floor, where people can

pop in during lunch breaks if they have any questions about the celebrations in 2018. The team consists of ten enthusiastic students from different countries.

MEANWHILE ONLINE

COLOURINGS FROM YEAST



PHOTO: SHUTTERSTOCK

The Wageningen spin-off N-CHROMA has been given a Take-off grant of 40,000 euros. The company uses genetically modified yeast to develop natural

colourings in a sustainable manner. The food industry has to replace all artificial food colourings by natural ones by 2020. These are currently extracted from plants such as purple carrots or cabbages, but that is rather inefficient.

Check them all out at resource-online.nl

PROPOSITION


'No one need ponder this any longer'

His suit is ready, the speech is drafted and the party venue has been booked. Postdoc researcher Tom Berghof is nearly ready for his PhD graduation. He is happy to make time to explain – with a wink – how he solved an age-old dilemma in his sixth proposition.

'Yes indeed, I've solved it. It's simple. That is, as long as you are talking about a *chicken's* egg – that addition is crucial. An animal belongs to a certain species from the moments its DNA sequence sufficiently resembles the DNA of that species. If you go back in evolution and look at the genome of chickens, you can point out a moment at which

we say; before this, there was no *Gallus gallus*, and after this there was. Of course it took thousands of mutations before the ancestors of the

chicken became a chicken, but one mutation has to be the last, decisive one. Mutations take place in the cells of sperm and eggs. Between them, gametes with that particular mutation resulted in a chicken embryo, but that was in an ancestor's egg, not in a chicken's egg.

In this way you can reason backwards: even the earliest ancestor of the chicken came from the egg of its ancestor, and so on. At some point there must have been an animal that laid the very first egg. The argument has a weakness, though. Because mutations are random, an animal can de-evolve as well as evolve. Then you can get a non-chicken coming out of a chicken's egg. But the main point is as clear as day to me: no one need ponder this anymore!' 

The chicken came before the chicken egg.



Tom Berghof received his PhD on 19 January for a study on breeding chickens with strong natural resistance to disease. (see page 8)

On the Wageningen trail in Indonesia

Cradle of a global brand



In its centenary year, Wageningen University has a good reputation in the world. So how did Wageningen acquire its image? Albert Sikkema travelled to Indonesia, the cradle of the Wageningen global brand.

Text and photos Albert Sikkema

In the middle of the Javanese city of Bogor – one million residents – lies a green lung of 87 hectares. As hair-raising traffic passes on the ring road around these botanical gardens, groups of Indonesian schoolchildren are having biology lessons in a peaceful oasis. Bogor Botanical Gardens house 14,000 tropical plants and trees, from giants of the forest to many

varieties of palm tree. The garden also boasts an old laboratory and a zoological museum that date back to the time when Bogor was called Buitenzorg and was part of the Dutch East Indies. The garden was established in 1817 by Dutchman Reinwaldt, who wanted to create a place that would ‘satisfy people’s curiosity.’

Research, but these were not part of Wageningen Agricultural College. In the early twentieth century, it was botanists, agronomists, chemists and soil scientists from Leiden, Utrecht and Amsterdam who called the tune in Bogor.

SIGN

Next door to the Botanical Gardens is the original compound of Indonesia’s main agricultural university, Bogor Agricultural University (IPB). The somewhat dilapidated old campus still has buildings with Dutch tiled roofs, but IPB is now a large university with nine faculties and over 25,000 students. Its main campus these days is in Bogor Bramaga, about 15 kilometres and three quarters of an hour in heavy traffic from the city centre. Here I meet Nanik Purwanti.

Purwanti works as a food technologist in the faculty of Agricultural Engineering and Technology, and got her PhD in Wageningen in 2012. She tells me about her research and then takes me to see an old building on the extensive campus. Here a sign commemorates ‘Wisma Wageningen’, a long-running WUR-IPB project. The building must be 40 or 50 years old and is almost empty now. Only the shed is still in use, because that is where Purwanti’s former professor conducts irrigation trials in the evenings. But neither Purwanti nor



▲ A colonial laboratory in Bogor (left). Elsewhere on the campus, Nanik Purwanti points out a sign mentioning Wageningen.

1925

Wageningen scientists start to build up expertise and a reputation in the Dutch East Indies

the International Office at IPB can tell me anything more about this little piece of Wageningen in Bogor.

PLANTATIONS

The emergence of Wageningen on the global stage started in Indonesia, but no one in Bogor has any further information about it. Luckily there is some Dutch literature and knowledge about that period. The Wageningen researcher Harro Maat of the Knowledge, Technology and Innovation chair group even wrote a thesis about it, for which he got his PhD in 2001. In a nutshell, then: when the brand-new Agricultural College produced its first graduates in Plant Breeding, Forestry and Soil Science after its establishment in 1918, more than half of them went to the Dutch East Indies. Not many of them came to work in the Buitenzorg laboratories and research facilities in what is now Bogor, because the Leiden, Amsterdam and Utrecht professors who held sway there did not consider the Wageningen graduates good enough. Instead, they were employed at private research facilities owned by Dutch plantation owners, or in the agricultural extension service. They worked on improving yields and production conditions for key crops such as rice, coffee, rubber, cinchona and sugar cane.

PRACTICALLY MINDED

In spite of the scepticism of the academics from the big cities, the practically minded Wageningen graduates gained ground in the Dutch East Indies over the following decades. The colonial planters proved to benefit greatly from their practical knowledge. It also helped that good researchers with practical experience in Indonesia opted for jobs in Wageningen and started teaching new students there. One example was Jacob Jeswiet, an Amsterdam-educated botanist who worked at the sugar research station in Pasoeroean from 1912 to 1925, and became professor in Wageningen in 1925. Jeswiet increased the sugar content of sugar cane, but his greatest achievement was to cross-breed cane varieties for resistance to disease, thereby actually saving sugar production on East Java. Out of gratitude, the planters gave him a spacious stately home near Wageningen.

You won't find any monuments to Jeswiet in either Indonesia or the Netherlands, however. This is because during World War II he joined the Dutch Nazi party and collaborated with the



▲ A hundred years ago, Bogor Botanical Gardens were a hub of agricultural research in the Dutch East Indies.



PHOTO: WUR LIBRARY

▲ A sugar plantation on Java in the early 20th century.

1942

Japanese occupation of the Dutch East Indies

1945

End of World War II and the start of the struggle for Independence in Indonesia

1949

Indonesian Independence, everyone with links to the Netherlands has to leave the country



German occupation, leading to his disgrace and dismissal from the Agricultural College in 1946. But his POJ sugar cane variety is still used today.

PHOTO GALLERY

So off I go to POJ, the East Java research station where Jeswiet worked. It has since been renamed the Indonesian Sugar Research Institute, and is located in the friendly coastal town of Pasoeroean. An old-fashioned bicycle taxi brings me to the door. There, a worker from the research institute takes me to the 'museum', the former main building of the research station which is now used as the institute's badminton court. So where is the museum?

There is a photo gallery on the wall. Jeswiet is not represented, but another 'Wageningen' is: Johan Ewald van der Stok, the director who launched rice research at the research station in Pasoeroean. When Van der Stok became professor of Tropical Plant Breeding in Wageningen in 1925, his work on Java was taken over by the Wageningen-educated J.G.J. van der Meulen. And he gave rice breeding a big push, says Harro Maat, by crossing the Japonica variety grown on Java with the Indica variety from China, and then developing the highly productive Peta rice variety.

This Peta variety is the basis of the Green Revolution in Asia, says Maat. Because years later, the international rice institute IRRRI in the Philippines crossed Peta with another variety to get a variety with even bigger yields.

POSITIVE IMAGE

Wageningen's positive image in the world grew up in this period, says Maat. After Indonesia became independent in 1949 – when everyone with links to the Netherlands had to get out of the country – most Wageningen alumni had no trouble finding a job in business and development projects elsewhere in the world, mainly in Africa. They were helped in this by the ministry of Foreign Affairs' assistant experts programme, through which recent Wageningen graduates could gain work experience in the tropics. As the Wageningen experts went off to long-term projects in Africa, Indonesia looked for new international partners. Only after 1965, when Suharto carried out a military coup, did Wageningen get its foot in the door in Indonesia again. Thanks to many personal links between Wageningen and the ex-colony, Indonesia soon became our main development partner once again. An example is the long-lasting collaboration started in 1979 with the universities of Jogjakarta and Malang, in which 11 Wageningen staff were stationed there, tasked with improving the standard of education. Elsewhere, in 1984, the Wageningen plant breeder Gerard Grubben was allowed to establish a research station to develop new vegetables for the fast-growing urban population on Java. At this research station in Lembang, five Wageningen experts worked together with about 50 Indonesian researchers on vegetables such as tomatoes, cucumbers and beans. They set up laboratories, created trial plots and developed new cross-breeds. But then it was 1992 and Wageningen people were kicked out again.



▲ Brawijaya University in Malang.

▼ The 'museum' of the Indonesian Sugar Research Institute in Pasoeroean – formerly East Java Research Station (POJ).



JAN PRONK

The new rift between the Netherlands and Indonesia came about when the Indonesian army violently suppressed demonstrations in favour of independence on East Timor. The Dutch minister of Development Cooperation protested. Pronk was highly respected because he chaired an international committee which allocated development funding. His protest was seen by the Indonesian president, Suharto, as colonial interference. In retaliation, he decided on 25 March 1992 that all Dutch people had to leave the country.

1965

Resumption of links between Wageningen and Indonesia

I head for Malang, where the close collaboration between Wageningen and Brawijaya University was abruptly curtailed in 1992. On the compact and attractive campus, I meet Professor Ifar Subagiyo, the director of Brawijaya University's International Office. He vividly remembers the rift, because in 1992 he was doing his PhD in Wageningen. When Suharto announced the rift, Subagiyo was confused. Was he allowed to finish his PhD in Wageningen? And what about funding? Luckily he got a grant in Wageningen and was able to finish off his research in 1996.

In Malang they refer to the 1992 rift with one word: 'Pronk'. As in, 'Before Pronk we had a project with Wageningen.' The rift spelled the end of the Wageningen Office for long-term capacity building and of a large farming systems project. Only after 1996 did formal joint projects between Brawijaya and Wageningen start emerging again.

NEW TREND

But plant breeder Grubben was already back in Indonesia one year after 'Pronk'. He went back to coordinate an ornamental plant project which had come about through the Dutch and Indonesian ministries of Agriculture. But he did not go to live in Indonesia for the project; he was allowed to fly in now and then for a training course or mission.

So 'Pronk' led to the model for a whole new trend in global development cooperation. In the new situation, Wageningen no longer established trial plots and faculties around the world, but concentrated on training students and PhD researchers. Among the latter is Nanik Purwanti, the woman who showed me the 'Wageningen' sign on the university campus in Bogor.

Purwanti started the MSc in Food Technology in Wageningen in 2006, went on to a PhD in Wageningen followed by a year as postdoc in Japan, and is now teaching at the faculty of Agricultural Engineering and Technology in Bogor. She has just had a visit from Karin Schroen and Johan Sanders from Wageningen. She is working with them and three Indonesian WUR alumni on a proposal for a protein consortium in Indonesia. What it comes down to is that the Wageningen alumni – two from Bogor, two from Bandung – want to do research on how they could reuse the waste flows from the production of palm oil and cane

sugar to create more value in the food chain. The involvement of an expert like Sanders is necessary to draw research financiers and Indonesian companies into the consortium.

CATALYST

In the new form of development cooperation, Wageningen PhD researchers are catalysts in market and policy processes in Indonesia. This is true of Ni'ma Khasanah, who I meet on the campus of the international research institute ICRAF in Bogor. She is doing PhD research under Meine van Noordwijk, who works at ICRAF and is also part-time professor of Plant Production Systems in Wageningen. Khasanah is doing research on the CO₂ footprint of palm oil production in Indonesia and the agricultural options for reducing it.

Her research is highly relevant to society today. The EU only wants to import sustainably produced palm oil, or palm oil which generates much less CO₂ than fossil fuels. In order to determine whether that is the case, policymakers need a method of measuring CO₂ production. And that is what Ni'ma is working on for the Indonesian Palm Oil Committee. She hopes to get her PhD in Wageningen in a few years. At that point it should have become clear which palm oil companies in Indonesia merit a certificate for sustainable palm oil production.

NEW COLLABORATION

Wageningen currently has about 20 research projects in Indonesia. For example, the faculty of Animal Science in Bogor has had assistance from Wageningen since 2015 in setting up an Animal Logistics degree programme. According to vice dean Rudy Afnan, that is the first project together with Wageningen: previously his faculty worked mainly with German and Japanese universities. But links have been forged with Wageningen researchers such as Bas Kemp, Ivo Claassen and Imke de Boer, and a growing number of students from the faculty are now doing their PhDs in Wageningen. The collaboration between Wageningen and Brawijaya University in Malang has been growing in recent years too, says Didik Suprayogo of the International Office. An alumnus who studied Soil and Water in Wageningen about 25 years ago, he is now developing joint research projects in the fields of agronomy, forestry and livestock. The university in Malang was also keen to send Master's students to Wageningen



◀ Ifar Subagiyo of the International Office at Brawijaya University.



◀ PhD candidate Ni'ma Khasanah.

for six months on internships. The collaboration is vulnerable, though, says Suprayogo, because it is dependent on grants.

TOKO OEN

Malang has its own museum piece which goes back to that bygone era when Wageningen was making a name for itself in the world. A few days later, in the middle of Malang, I walk into Toko Oen, a café with an old colonial atmosphere from the 1930s. There are vintage easy chairs and the walls are hung with black-and-white photos from the period. On the Dutch-language menu are dishes such as *nasi goreng* special, but you can also order an *uitsmijter*, a typical Dutch open sandwich. The world of the colonial planters has become fashionably retro. 📍



▲ Toko Oen in Malang.

1992

Minister Jan Pronk protests against Indonesian action in East Timor; all Dutch residents have to leave the country again

1996

Resumption of links between Wageningen and Indonesia

NOT TOO CLOSE

'I took this photo in Wageningen's Binnenveld. I had got on my bike to look for a muck spreader to illustrate an article on the smelly job of spraying dung. I came across this spreader by accident but soon discovered I couldn't get close. Luckily I was able to borrow a telephoto lens from a colleague. I like the simplicity of the photo: the landscape, the machine and the job.'





Guy Ackermans has been photographer for *Resource* and WUR for 35 years now. Capturing special moments through all those years. In this celebration year for WUR he shows us one of his most special 'pics'.



Plant power

They say a potted plant on your desk is healthy. All that green allegedly does wonders for the indoor climate and your industriousness, but there is virtually no evidence for it. Now an experiment is planned in offices and healthcare institutions to resolve the issue.

text Roelof Kleis photo Marel Stork Poultry BV

You rarely see anywhere with so much greenery as Marel Stork's office. Take your average workroom on campus. The *Resource* editors' office for example. The author of this article has a pathetic *Asparagus falcatus* on his desk that is dying a lingering death due to a lack of water and an excess of coffee. Marel Stork's place was not that green either until recently. Plants were put everywhere to turn the office into a trial location for research on the positive effects of plants on the indoor environment.

The alleged positive effects, because the evidence for this is slight despite all the claims and assumptions. 'Greenery outdoors has a proven positive effect on people's well-being,' says project manager Tia Hermans of Wageningen Environmental Research. 'But people aren't outdoors much. They spend most of the

time sitting inside. And there is little scientific evidence for the effects of greenery on the indoor climate. There are not many studies and some of the results are contradictory.'

ASTRONAUTS

You can find numerous lists on the internet of plants that are said to improve the air quality in your home or office. They invariably refer to research by NASA as proof. The US space organization investigated whether plants on space stations could purify the air. They looked at the effect on compounds such as formaldehyde, benzene and trichloroethane.

Hermans' study is not about space stations and astronauts; it focuses on the working environment of mere earthlings. Do we benefit from greenery in the office? Do plants make us healthier and harder working? That is the issue at stake in this project, which Hermans is car-

rying out for the Horticulture and Propagation Materials Top Sector. The project is with eight other partners, including the garden and indoor plant company Donkergroen and nature organization IVN. 'We are investigating the effects of greenery on people's well-being, air quality and the interaction between the two. The ultimate aim is to develop revenue models for companies for recouping the costs. If a firm invests in greenery, what does it get in return in terms of less sickness absence, increased productivity or lower energy consumption? Horticultural companies can use that knowledge to market their products and services.'

GNATS

For the past six months, Marel Stork's office, Amsterdam Basel and seven care institutions spread across the Netherlands have been stuffed full of plants. Coca Cola was also a par-



‘Coca Cola wanted the *Anthurium* because the red in the flowers matches their logo’

Tia Hermans of Wageningen Environmental Research

participant but the trial there had to stop after six months. ‘Because of the dark-winged fungus gnats,’ says Hermans. ‘The gnats were a real problem. It seems the soil around the plants was full of the eggs of these gnats. Apparently they’re a major pest in greenhouse cultivation.’

Setbacks such as the Coca Cola episode are inherent in studies on location like this. It was a real challenge finding participants for the experiment anyway, says Hermans. ‘Companies find it too expensive or too much of a hassle, or they think the plants are unattractive or don’t like the beasts. Some want to see the revenue model first, whereas that’s precisely what the research is for!’ WUR’s own Facilities & Services also decided not to take part.

RED FLOWERS

The three companies and seven care institutions that are taking part all have a collection of plants that has been carefully chosen to suit the conditions. The expertise of the Leiden company Fytagoras was used for this. They can calculate how much leaf surface is needed for a required increase in the air humidity based on the dimensions of the room and the tempera-

ture. This was used to make a selection of plants from a range of 85 species for which the effects are known. The participants have a say in the selection too. Hermans: ‘For example, Coca Cola wanted the *Anthurium* because the red in the flowers matches their logo. That plant is popular in care institutions too. Older people remember the plant from days gone by.’

The experiment also involves employees completing a detailed online questionnaire every three months, with questions about their well-being, health and ‘emotional status’. And loads of measurements are carried out too. Sensitive sensors continuously measure the temperature, air humidity and concentrations of CO₂ and volatile organic hydrocarbons in the air. The data is sent directly to a central computer at Fytagoras. Baseline measurements were made prior to the intervention, of course, and there is a control in the form of a similar office without plants.

GREEN OFFICES EVERYWHERE

The question is whether there is a quantifiable effect. The first results do suggest this, says Hermans. ‘These are the measurements at

Coca Cola. Plants appear to increase the air humidity. And that is good news. People in offices and care institutions often complain about dry eyes and low humidity. But we still need to analyse everything and relate it to the conditions outdoors.’

So it is possible that all offices will be full of greenery soon. Hermans would be fine with that. ‘I would be really happy if our study showed that plants have such a big effect that an employer would be a fool not to make that investment. To have a green working environment as the new norm.’ **B**

CHAMPION IN AIR PURIFICATION

Plants can extract volatile compounds from the air through their stomata. The plant basically inhales pollutants. But only water-soluble (hydrophilic) substances, such as formaldehyde, are taken up by the leaf cells. Fat-soluble (lipophilic) substances such as xylene settle in the plant’s wax layer where they may or may not be broken down by microorganisms. Pieter de Visser of Wageningen Plant Research is researching the filtering properties of a number of plants for both classes of compound. The idea is that the study will reveal which indoor plants are the air purification champions. Or the lab champions, at any rate, because how plants perform in the office is a different story.

How can teachers reduce their work pressure?

Ten tips for beating stress

WUR teachers are groaning under the high work pressure arising from growing numbers of students. And they are not alone in this; it is a feature of higher education everywhere. Thijs Brilleman, who teaches industrial robotics at The Hague University of Applied Sciences, trains teachers and was nominated as national teacher of the year in 2017, has given a lot of thought to stress. He has 10 tips.

text HOP, Irene Schoenmacker illustration Shutterstock



1. TEACH LESS

'When I tell teachers that, they look at me in astonishment. But of course your aim as a teacher is not to teach but for your students to reach their full potential. You certainly don't have to spend all your time in front of the class. You've got to be there when students get stuck. In the robotics minor at The Hague University of Applied Sciences, we revise the programme every year because the technological developments go so fast. I can't keep up with that so I put students in groups and give them an assignment. Three days later, they know more than I do. They I ask them to write a manual or teach a lesson. The group in the next period gets a kick-start from the previous group. That is less time-consuming, and the education is much better for it. So you need to set up a smart system.'

2. LIMIT LECTURES

'A lecture for more than 30 students is not efficient. You can hardly answer any questions and what is more, it is deadly dull for students. Let them watch a video about the material instead, and then take an hour or an hour and half for questions. That way you make yourself much more useful.'

3. DON'T DO 10 THINGS AT A TIME

'You should cluster tasks. People can't easily do several things at once. Yet you see them every day doing a little bit of this and a little bit of that, and switching tasks all the time. That gobbles up energy. I prefer, for example, to plan one whole day on which students present their projects in groups, rather than spreading out all those presentations. Then I only have to reserve a room once, and I don't have to keep thinking about what I have to do next. Cluster your grading and feedback too. Assess group reports together with your students. Reserve a room, make sure they can see what you are doing on a screen and assess the work out loud. It saves you time and students learn a lot from it.'

4. DON'T DO ANYTHING YOU ARE NOT GOOD AT

'I don't teach programming anymore. There are open online courses that are 10 times better, so I get students to watch those. That leaves me more time for answering questions. And a teacher's time is expensive, so make sure you only do things that make good use of your capacities. For some of the work, the degree programme would be better off hiring students. They are cheap, enthusiastic and often get a lot out of it too.'

5. MAKE USE OF DIFFERENCES

'Following on from that: you don't have to everything by yourself. Teachers grumble about having to teach students of varying abilities, but that is fantastic. Form groups and put one strong student in each group. Then they teach each other and that is 10 times more effective.'

6. FORESTALL EMAIL CONTACT

'The email is the curse of our society. Email is generally not a suitable means of communication between students and teachers. I have an online appointments system, with which students can plan a meeting. And I have a couple of open drop-in moments every week. That means I am very accessible, but only at particular times. Which saves a lot of time. And the delay also works as a shit filter: it's not quite so easy to call for help and eight times out of 10 students solve their own problems.'

7. ORGANIZE YOUR INBOX

'Don't let cc's come into your standard inbox. They are just for your information; otherwise you would be the main addressee. Of course you should read them, but do so once a week. The same goes for newsletters.'


8. DON'T TAKE RESPONSIBILITY FOR EVERYTHING

'When it comes to tests or assignments, the burden of proof lies with the student. And make sure you don't get made co-responsible for final projects. Students are always asking: what is still lacking? If you tell them, you take away all their autonomy and you can't fail them anymore because you have become co-responsible for the input. The same goes for colleagues. You might go through a test but never make changes yourself. Create a separate document containing what needs changing, and let them make the changes themselves.'

9. BE SELECTIVE

'This sounds obvious but it is important. As a teacher you have to select very precisely what you do and what you don't do. Before you agree to something, remember that it will mean not being able to do other things. A lot of teachers don't make that connection.'

10. THINK ABOUT WHAT PEOPLE REALLY WANT

'People often come to you with a request: can you do this or that? But there is always a higher goal behind this. The real point is the output of the task: helping a student progress, for instance, or getting through the accreditation process as a programme. I have stopped automatically doing what people ask me to. Because often, what they ask won't lead towards the higher goal. This is quite common in bureaucratic organizations like educational institutions: they are not results-driven. That mindset is much more present in businesses, because without it they would not be competitive. But in education we often lack the reflex to think about outcomes. Whereas doing so can save a lot of work.' 

PETITION ON WORK PRESSURE

On 5 December 2017, campaigners from #woinactie submitted a petition to Minister Van Engelshoven, following the example of their primary school colleagues. The petition states that work pressure in the universities is too high, and that staff are getting exhausted. There are more and more students, partly thanks to growing numbers of international students. Logically, the number of teachers should grow too, but that isn't happening. The revenue from the loan system should be used to appoint more teachers, but at present only the applied sciences universities are on course with this.

**Enough is
enough in
Higher
Education**



How can we keep WUR VISIBLE?

In his New Year Speech, the mayor of Wageningen Geert van Rumund said WUR should remain a visible presence in the city. Teaching has already been concentrated on campus; it worries him that the ceremonies are going to follow suit. WUR has Wageningen in its name, so live up to it, says the mayor. Good point?

text Yvonne de Hilster illustration Henk van Ruitenbeek

Geert van Rumund



Mayor of Wageningen

'I raised the subject of the Aula in my New Year speech because it means something to a lot of people. Nijmegen faced the same situation back in the late 1980s, and the university's departure from the Aula in the city centre there was traumatic. The idea of WUR moving out of the Aula doesn't feel good. Even just the signboard in front of it has symbolic importance. **And I see the city as one big campus. We belong together.** Students enrich the city, and WUR's research and education on issues such as climate, food and conflict management relates to Wageningen as the Liberation City. Also, a physical presence in the city challenges WUR to do things there all year round. I'd say, combine it with a meeting place for contact with and between international students. And the real world is more diverse than the campus. It would be a great boon for both the university and for the city if that physical connection remained.'

Sjaak Driessen



Director of bblthk

'We do a great deal to make WUR visible in the city centre. Take the Sunday University and the children's lectures we run, for instance. And WUR is also on the board for the Wednesday Debate Day, together with the *Gelderlander* newspaper. We don't let the grass grow under our feet. As part of the centenary celebrations, too,

we'll be running a nice project in town. And all this comes about because over the years we have built up good relations. **Nor have I noticed that you have to twist anyone's arm at WUR if you want to organize something. Quite the opposite, in fact.** It never takes me long to find speakers for the Sunday University series. I can only advise others to invest in relationships with WUR. Apart from that, students come to my library too, and they tell me they like to get off campus now and then. I sense a social need for the city. It's not about hardware, a building, but about software, people.'

Piet-Hein van Spanje



Secretary of the Wageningen business network Wagening's Ondernemers Contact (WOC) and chair of Business and Science Park Wageningen

'We are hearing from businesses that it would be a pity for them if WUR moved out of the Aula. They appreciate the PhD graduations especially. A Dialogue Centre goes with the times, apparently, what with Unilever and FrieslandCampina being on campus too. But for WUR's visibility in the city it would be a good idea for WUR to keep one building in the city centre. **Visibility is not just a matter of a festival like Food4you, it's a matter of hardware too.** We would also like to see WUR becoming a visible presence at the Business and Science Park. With a teaching or a research building, for example. That would boost the park's appeal for companies. Now they are leaving here for the campus.'



Nicolien Pieterse



Programme leader at Impulse

'The main purpose of Impulse is to build a campus community. It's very nice to collaborate with organizations and initiatives from the town, so Impulse is always open to that. And we regularly have Wageningen bands at our lunch hour concerts. **WUR has become much more accessible in recent years.** When we were spread out around the town, there were fewer events at which everyone was welcome, like the public lectures we run now. That only started after the move to the campus. Everyone can find our activities using the campus app, which can be downloaded free.'

Elianne Rookmaaker



Works on a town centre development project: *Aan de slag met de binnenstad*

'Links between WUR and the city centre are one of the seven themes in *Aan de slag met de binnenstad*. Part of that is that the city centre will more often be the subject of study. **We want to make students aware that they can do their applied research just around the corner on their own home territory.** One group of students is working in our city centre shop now on profiles for the city centre. And we are also involved in organiz-

ing activities that will make the WUR centenary visible in the city. For me, visibility and connection is about people, above all: a building doesn't mean much in itself. What will be more important in future is flexible workplaces, meeting places and places to eat out in the centre.'

Eric Langendoen



Waterlanders art collective, Wageningen

'How to make WUR more visible in the city centre? Move the city centre. If you look at traffic flows, the crossroads between the Boomgaarden, the Pomona and the cycle path behind the Pomona is the middle of the city. There is an old map of Wageningen, too, which locates the city right there. We'll be talking about that in our next neighbourhood safari. But seriously now: set up a WUR shop in the city centre. **A shop with the best ideas for the future, so you can see what WUR is working on and residents can be proud of it.** A kind of gallery with the options that are open to us that have come out of research. A place you can pop in to and dream, a place that inspires you. This would bring the academic institution out of its ivory tower. So yes, it is a matter of a location, because that makes and keeps you visible.' ®

Farmer's son shows students around the cowshed

Visiting the cows with Toon

BSc student Toon te Poele invited his fellow students to have a look around his father's dairy farm so they could get a realistic picture of how this kind of farm works. Because consumers ask the world of farmers, but don't want to pay for it.

text Albert Sikkema *photo* Guy Ackermans

In the countryside around Lievelede, in the Achterhoek region of the eastern Netherlands, lies the farm where Toon te Poele grew up. He is keen to explain how his father runs the dairy farm.

Around the kitchen table are gathered five students who have accepted the invitation to take a look around. They are Wageningen students of Plant Sciences, Food Technology, Forest and Nature Management, and Nutrition and Health, and a Nijmegen student of Political Science.

Since 2008, Te Poele senior has had a free-stall barn in which the cows are free to move around, and with cubicles where they can lie down. They decide for themselves when they want to be milked by the milking robot. The robot accepts the cows for milking twice a day, and rewards them with feed pellets. In the spring of 2009, Te Poele opened the barn door, but not all the cows wanted to go outside. Since then they have stayed indoors, even in the summer.

FLUCTUATING MILK YIELD

In the summer, the cows would rather be in the well-ventilated, cool barn than in the hot meadow, says Te Poele. 'Don't they want to move around?' asks a student. They can do that in the barn too, says Te Poele, who is a student of Plant Sciences himself. They only

'We can't maintain hedgerows for the current milk price'

run in the meadow when they come out for the first time in the spring. Normally they just graze, and they lie chewing the cud for at least eight hours a day.

But there are financial advantages to keeping cows in a barn too. Due to changes in temperature and amounts of sunlight, the quality of grass in the meadow is variable through the year. The yield from cows that graze therefore fluctuates. Te Poele's indoor cows get a precise mix of grass and maize silage, causing them to produce a little more milk year-round. And letting the cows out is time-consuming for the farmer – an investment that doesn't pay off, says Te Poele. The FrieslandCampina premium for grazing cows is too low to cover it.

CHEAP MILK

This point keeps coming back: the consumer demands everything from the farmer – more animal welfare, less pollution, more grazing, more field birds – but goes on buying a litre of semi-skimmed milk at the supermarket for 75 cents. 'Of that 75 cents, about 35 cents goes to the farmer, FrieslandCampina get something for processing the milk, and then the transporters and supermarket workers have to be paid as well.'

Yet farmers still go on investing, and they all have to make their own decisions about how to do so. Toon's father chooses to hire someone to mow his grass. That costs money but saves on time and machinery. His cows are quite a bit smaller and sturdier than the familiar

Holstein-Frisians, as we see on our guided tour. They are a cross-breed of the highly productive Holstein cow and the robust German Fleckvieh breed. They produce less milk but are healthier, so Te Poele also saves on veterinary bills.

Antibiotic use on the farm has gone down. Te Poele: 'You want to minimize antibiotics use, because the milk of a cow that is being treated goes down the drain, so every sick cow costs you twice as much.' Meanwhile the cows stand peacefully chewing the cud and gazing at their audience. A quiet barn with little lowing is a sign of wellbeing, says the farmer's son.

NOT NATURE CONSERVATIONISTS

In 2000 the farm gave up some land to the State Forest Service Staatsbosbeheer for the creation of a nature reserve, in exchange for a larger housing plot. Many rare orchid species now grow in the large nature reserve. On the farm itself, there are no hedgerows or trees. 'We are farmers, not nature conservationists,' says Toon. 'We can't afford to maintain hedgerows for the current milk price. What is more, a hedgerow reduces the grass yield. We think consumers will have to pay the farmer if they want hedgerows and more trees.'


Nor is the farm participating in the special field bird programme aiming to boost lapwing and godwit populations. Delaying mowing the meadows is not an option. 'We want to mow early in the year because that is when the nutritional value of the grass is highest.'

COW PASSPORT

It is not the field birds but the cows that are the centre of attention on the farm. Te Poele senior keeps a close eye on their welfare, both in the barn and on his computer. Each cow has a passport containing records of its daily milk yield, the quality of the milk, dates of drying off and calving, and the cell count. The latter gives an indication of the number of bacteria in the milk. If it is too high, there is something wrong with the cow's health.

Economic considerations are a constant factor. Last year the farm had to get rid of a number of cows due to government regulations for reducing phosphate production in the dairy industry. In such a situation you get rid of the least productive cows. In the corner of the barn lies a handicapped bull calf that cannot walk. It will be put to sleep soon because there is no place for it in this production system. You always have to bear in mind that the supermarket wants bargain prices like 75 cents a litre for milk, says Toon te Poele.

EYE-OPENER

So what do the Wageningen students think of what they have seen? 'I have seen that the farm has the animals' welfare at heart,' says one of them over coffee at the end of the visit. Another says: 'I thought cows should be outside in the meadow, but now I have seen that there are other ways of doing it.' For a third, Te Poele's robust cows were an eye-opener. What Te Poele wants to emphasize above all is the importance of a fair milk price. In his view, consumers and supermarkets have got to change. 

MARS WEED

Vegetables do well in Mars soil. And tests by students at Villanova University, Philadelphia show that hops grow well in this soil too so Mars beer is an option. The students actually wanted to grow hemp but weren't allowed to. Mars weed — an idea for Wieger Wamelink, WUR's own Mars gardener? We Dutch are more relaxed about that kind of thing...

FLOWERS

Why did flowering plants become so successful and dominant in evolution? Because they have smaller cells, say researchers at Yale and San Francisco State University. These cells were able to become smaller, and therefore more efficient, because the genome shrank. The shrinkage did not damage their chances of survival. Quite the opposite, in fact. Although there's still the question of why not all plants are flowering plants.

FLU

Researchers at the University of Maryland have shown that you can also catch flu via the air. Until now it had been assumed that the virus could only be spread through coughing or direct contact. The scientists advise people to go home as soon as you feel the flu coming — before you infect others!

GREEN SEA TURTLE

Things are getting too hot to handle for the green sea turtle. Or rather, its eggs. This conclusion comes from research by US institute NOAA Fisheries on the impact that climate change is having on the species. The Great Barrier Reef beach sand is warming up and as a result the eggs all hatch as female turtles. The scientists warn that this will eventually cause big problems.



Caribbean islands want their 'brains' back

How can Antillean and Aruban students and young professionals help further sustainability in the Caribbean territories of the Netherlands? This was the key question addressed in Impulse on Friday 12 January. Over 50 Caribbean students and alumni discussed ideas.

It is bitterly cold outside but temperatures are tropical inside Impulse. Perhaps because the heating is turned up high, or perhaps because the room is packed. 'We're pleased with the big turnout,' says Tanya Fraai, manager of the WeConnect Foundation. She joined forces with WUR to organize the 'Sustainable Caribbean' event.

Every year, around 600 students leave Aruba, Curaçao, Sint Maarten, Saba, Sint Eustatius and Bonaire to study in the Netherlands (and the US). Few return after graduating. That is resulting in a shortage of graduates on the islands, explains Fraai. 'We want to turn that brain drain into a brain gain, boosting the local labour market with home-grown talent.' The aim is to inspire the students and young professionals and to bring them into contact with organizations working on sustainable initiatives on the islands.

The sustainability event was prompted by AlgaePARC Bonaire, a new WUR algae project in which scientists are investigating how microalgae can be used as a raw material for food, animal feed, fuel and chemicals. The climate on Bonaire is ideal for growing microalgae. 'Tourism is virtually the only source of income on Bonaire,' says project manager René Wijffels, professor of Bioprocess Technology. Almost all the food and energy has to be imported. 'We want to work with the people of Bonaire in exploring the sustainable development of new eco-



Students and alumni from the Dutch Caribbean territories exchange ideas and experiences in Impulse.

PHOTO: WECONNECT

nommic activities that can make the island less dependent on imports.'

The Caribbean students and alumni also get presentations on ocean thermal energy, a major programme for coral and the establishment of a sustainable start-up.

The participants are enthusiastic. PhD candidate Tatiana Becker is researching marine resource management in the Aquaculture and Fisheries group. After she gets her PhD, she would like to return to Aruba, where she was born, to help set up a marine park. 'Aruba lags behind other Caribbean islands in terms of research and there is a real lack of expertise. The focus is mainly on tourism but not on what that tourism is based on. Which is to say the coral and sea life.'

Milicent Sof also feels inspired. She was born on Curaçao and is doing a degree in the Built Environment at HU University of Applied Sciences Utrecht. 'I found the Blue Rise presentation very interesting. They are working on a project in which seawater is used to keep buildings cool. I think it would be great to do an internship there, or perhaps my graduation project. I'd like to work on projects for sustainable construction and a circular economy.'

Fraai is pleased with how the occasion went: 'It was a successful event that will definitely get a follow-up. Various organizations on the islands have shown enthusiasm for using our platform as a way of tracking down the local "brains" who are studying in the Netherlands.' **TL**

Big room shortage among Dutch students

Very few Dutch students have been able to rent a room from Idealis this academic year, concludes Ingrid Hijman, head of the Student Service Centre. Almost no rooms have become available from Idealis in the past six months and the student accommodation provider has already reserved all the rooms due to become free in the next few months for international students starting next September.

International students are essentially guaranteed a room. The university will once again be reserving 1000 rooms for them with Idealis. This means Idealis can offer hardly any rooms for current and prospective students from the Netherlands for the time being. To ease the pressure a bit, Idealis is letting the reserved rooms for international students temporarily to Dutch

students for the next few months.

The university and Idealis had foreseen the room shortage, which is why Idealis wanted to build temporary accommodation fast on Kortenoord. But Wageningen municipality got in the way of this by starting a lengthy objection procedure. Hijman thinks the worst of the shortage will be over once the new Idealis accommodation on the Diedenoort site and on Kortenoord is completed at the end of 2018 or start of 2019. 'It's a temporary problem.'

But still a major problem for the hundreds of students who want a room in Wageningen and now often have lengthy journeys commuting from home. That is why the university and Idealis are looking for emergency housing that is available in the short term. 'Idealis is doing its best but we still don't have any concrete options,' says Hijman.



ILLUSTRATION: IDEALIS

Idealis wanted to open this temporary student accommodation on Kortenoord in late 2017 but the municipality was not willing to shorten the objection procedure.

This means that Idealis will not achieve its target of having accommodation by 1 May for all students actively looking for a room, says Idealis spokesperson Hellen Albers. 'We find it very frustrating that we have to say no to Dutch students but we don't have a choice.'

There are more Dutch students looking for a room via Idealis this year than last year.

Idealis is already referring new first-years to other accommodation providers such as DUWO and private individuals. **AS, LvdN**

MEANWHILE IN... VENEZUELA

'We need humanitarian aid and fair elections'

Over the past 18 years the regime in Venezuela has gradually undermined democracy and established autocratic structures. People are suffering from a severe political and economic crisis. The popular opposition leader Oscar Pérez was killed by government forces last week. Alessandra Moncho hopes for more support from the international community.

'The news that Pérez was killed by order of the regime scared me deeply. Through this act the government made clear that they are ready to destroy any opposition. Pérez was a pilot from the police who rose up against the injustices of the regime and encouraged protests. Last week, armed forces surrounded the house where he was hiding with members of his anti-government cell.

I follow the news from Venezuela through social media since the government controls the official sources. I was shocked by what I saw. Video material reveals that Pérez completely surrendered to the police. According to the law, a surrender grants you the right to stay unharmed in

order to be taken to court. Yet the house was attacked and Pérez and several others were killed. The regime committed a crime in front of everyone's eyes and nobody could do anything



The murdered Venezuelan opposition leader Oscar Pérez.

about it.

I feel helpless and I am frustrated that the government is succeeding in spreading fear. My family has doubts about joining any more protests. Most of my friends have left the country. The economic situation in Venezuela is horrible. Hyperinflation is taking place due to economic mismanagement. People are dying due to shortages of medication since the government limits imports and is not accepting humanitarian aid. Food prices are ridiculously high. Many inhabitants cannot feed themselves and their families. Riots occur regularly these days and the crime rate is increasing.

I am constantly worried that something will happen to my family. In my view, Venezuela has become a dictatorship with people suffering the consequences. I think the international community should pay more attention to the critical situation there. I do not believe we can solve the problems on our own. We need humanitarian aid, fair elections, and negotiations that are not controlled by the regime.' **JS**



Alessandra Moncho, an MSc student of Food Biotechnology from Venezuela, talks about the crisis in her country.

YOU ON CAMPUS

He graduated two months ago, actually, but Otto van der Linden (26) is still having a great time on campus. With his guitar at his side, he is preparing his class for this afternoon. A biologist, he has a job for six months as a teaching assistant. 'That is ideal for me now.'

'I finished my internship in New Zealand two months ago and I am not sure yet what I want to do next,' says Van der Linden. 'I could have stayed there to do a PhD but the overall scenario wasn't right. Content-wise, it was a nice challenge but the social scene wasn't a good enough fit for me, not for four years.'

So he came back to the Netherlands where, having given up his room, he was forced to couch-surf for a while. He couldn't get a permanent job. 'Normally you go and live where you work, but I didn't want to rush into a job just so as to be able to live there.' So the temporary job as a teaching assistant was a perfect solution. 'This means I can figure out what I want to do exactly, while I do have the

security of an income. So I am now setting up a little project at a company, looking at whether composting machines can be made more sustainable. Nice to do, and who knows, something may come of it.' Until then, the university world suits him just fine. 'It

'Nice to be among people with the same passion for plants'

is very nice to be among people with the same passion for and knowledge about plants.'

Van der Linden plays guitar in two bands, and likes brewing beer. 'I get a kick out of doing that. We're working on setting up a beer-brewing committee now, together with the Wageningen Student Farm. The commit-

tee will help groups of students to brew their own beer.' Another hobby he pursued for a while was breeding tropical fish: 'Even before I started on my degree in Biology, I thought it was very interesting to study how they reproduce.' **LvK**



PHOTO: LIZA VAN KAPEL

PARTIES

In the party mood? Wageningen Party Promotion (WUP) tells you where to find one. See too www.wageningenup.nl.



CAFÉ LOBURG - LOBURGLIVE ROCKS: MORRÈS

Friday 26 January from 23:00 to 02:00

The Arnhem-Nijmegen rock trio Morrès is coming to Wageningen. Their music is a mix of The Police and Muse. Admission free.

ARBORETUM CHURCH - CANZONE! ANNIVERSARY CONCERT

Saturday 27 January from 15:00 to 18:00

Canzone! is a choir and band that plays pop and light classical music. The group, which started up five years ago, will play its best numbers from the past five years in this anniversary concert.

WILDE WERELD - SHOUT: MAD SCIENTIST

Saturday 3 February 22:00-03:00

SHOUT promises an unforgettable night out with enchanting drinks. Put on your lab coat and play the mad scientist for an evening. Perhaps you can cast a spell on someone with your love potion... **L**



The Underdogs played the blues in Café Loburg last Friday as part of the Affligem Blues Route.

PHOTO: SVEN MENSCHER

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.

Cycling through the savannah

'Guinea-Bissau has several conservation areas where chimpanzees live. I went to find out which forested areas outside the national parks are home to lots of chimpanzees; they might be suitable conservation areas. Most of them were located further away from villages, where there was not much human impact. That was what I expected, at least, and luckily I had enough data to demonstrate that it was the case.

I lived in a large village and travelled from there to smaller villages. A local village resident helped with my research and always accompanied me, which was a very good feeling. Our visit to a village was announced by radio, and then we cycled through the savannah.

VERY SICK


My supervisor helped with communication, although I managed to make myself clear and explain my research with the help of drawings and my Portuguese. Later I learned a bit of Creole, which is a mix of Portuguese and the local language Fulah. I lived in Portugal until I was 12 so I had a bit of a basis to start off with.

I had to be very self-reliant: I had no internet or phone and could only write letters home now and then. It was tough physically too: I often ate plain white rice, I got very sick and I nearly ran out of clean drinking water a couple of times. That was quite scary. I hadn't realized beforehand that it would be so primitive.

Because of the primitive conditions I became very close to everyone there. Precisely because I was so outside my comfort zone, was

the only westerner at first and didn't know anybody, I bonded strongly with the only people who could look after me.

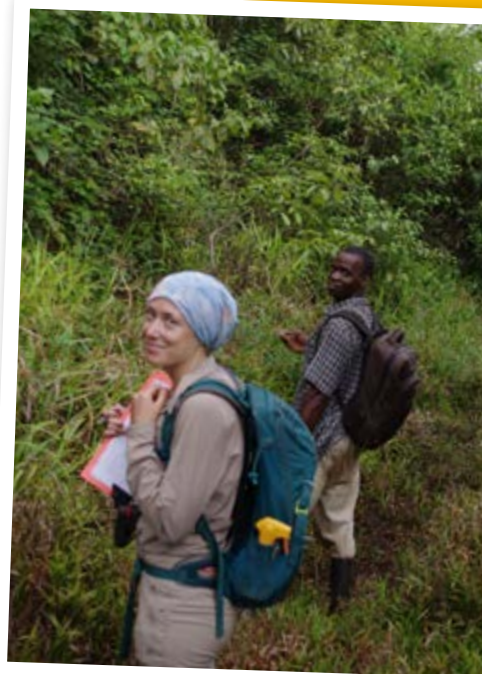
IN LOVE

I completely fell in love with those people: the life they live is so pure. Where they live is so remote and they have so little, yet they share everything, whether it's a bowl of rice or the pleasure of dancing and music. When I left I threw a party. We danced beneath the stars until deep in the night; that was so amazing. And there was so much I could learn from them: they were incredibly wise and so calm. That simple life close to nature really is my thing, and I certainly miss it here.  LvK

THE WORKS



Who: Anna Nunes van den Hoven, MSc student of Biology
What: Thesis research on chimpanzee habitats, in collaboration with the Chimbo Foundation
Where: Boe region, Guinea-Bissau



Read all interviews on
on resource-online.nl

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In memoriam

SJOERD DE VRIES



On 29 December, Sjoerd de Vries passed away in his sleep. He would have turned 66 and retired on 15 June 2018. Preparations were already underway for his farewell, but his departure was more abrupt.

Sjoerd worked on the experimental farms in Lelystad for over 41.5 years. Tractors and machinery were his hobby. In early 2004 he moved to Waiboerhoeve. It was around then that he got MS, a huge blow for Sjoerd but he didn't simply give up. He was still able to carry out his tasks with the help of various aids — a modified car, wheelchairs in various places and a John Deere tricycle. He never complained and was always positive.

The plots that were not needed for the cultivation of feed crops were rented by arable farmers. Sjoerd invested a lot of time and energy on this. He contacted potential tenants and worked with Pier Bosma and Noor Neeskens to

draw up the contracts. A lot of land was involved (250–300 ha), which meant a lot of money too. The payment entitlements that DLO was no longer able to collect (because DLO is a service and not a private entity) were included in the contracts. A construction was set up for this in agreement with the Netherlands Enterprise Agency (RVO). Sjoerd helped the organization a great deal here.

He also coordinated the contracting work that Applied Plant Research (PPO) carried out for Waiboerhoeve. His great passion were the wind turbines. Sjoerd kept a daily record of the kWh produced per turbine. He also inspected the wind turbines every day in his John Deere and he gave guided tours.

Sjoerd had large numbers of contacts among agricultural contract workers, arable farmers and other business relations. He was always friendly, but businesslike when necessary. He was someone everyone respected. He was very committed to the organization and we will miss him.

*MT van Manen MSc,
Director of Operations, ASG*

100 years Wageningen University & Research

A sneak peek

Life

March – May

- Grand opening event
- Dies Natalis Unravelling Life: Wisdom & Wonder
- Artists in residence – by Beelden op de Berg
- Science week 'What is Life?'
- Month of education:

Food

May – August

- Science at the local market
- Symposium 'Food for Future'
- World Wide Wageningen
- Green Student Challenge
- SDG Conference: Towards Zero Hunger – Partnerships for Impact

Earth

September – November

- WUR on Wheels
- Festival Wageningen Wisdom & Wonder
- Company day: Future Perspective
- Campus safari
- Science week 'System Earth'

On 9 March 2018, we will celebrate our 100th Dies Natalis. This will be the festive start of our centenary and we are looking forward to seeing you. We proudly present a diverse and inspiring programme. This is just a small selection.

See for the full programme: www.wur.eu/100years

announcements

FABLAB OPEN AFTERNOONS, SATURDAYS 14:00-18:00

FabLab Wageningen is a workspace for everyone, with high-tech machinery such as a laser cutter, a cutting plotter and 3D printers. With this equipment you can make things that were impossible or unaffordable until recently. Fancy having a go? You can! There is an open afternoon every Saturday and you are welcome to come and use our machines under supervision. Location: Starthub, Triton (building 119), De Vijfde Polder 1, Wageningen.

FABLABWAG.NL

INTRODUCTION TO RUGBY

Always wanted to try a new sport? Wageningen Rugby Club will be running introduction training for those who want to try rugby from Tuesday 20 February to Tuesday 27 March! In six weeks, every Tuesday, you will learn everything there is to know about rugby and you can join the activities at the club. We start on 20 February at 19:45 at 'de Zoom' Sports Park. See you there! Info: intro@rcwageningen.nl.

SIGN UP FOR THE 2018 TFF CHALLENGE

Are you 18-35 years old and do you have a great idea for changing the world of food and agriculture? Join the 2018 TFF Challenge to form teams and develop breakthrough solutions that address the global challenge of feeding 9+ billion people by the year 2050. By participating in the TFF Challenge, you are joining a movement of young innovators from 130 different countries who are reshaping our glob-

al food system. The Challenge offers you training programmes and mentors who will help turn your idea into a reality. Participants have the chance to receive up to \$25,000 in cash prizes, and you may be selected to participate in the TFF Startup Bootcamp, an intensive, 12-week startup training programme which culminates in the TFF Global Summit.

TFFCHALLENGE.COM/CHALLENGE

agenda

Thursday 25 January to Wednesday 7 February

FILMS FOR STUDENTS

Visages Villages: from (urban) landscape to portrait museum. *Le Mépris*: the tragic love between a screenplay writer and his wife. *IFFR-Premièreweekend*: six new films live from the International Filmfestival Rotterdam. *Winst met Kringlooplandbouw*: farmers and the nitrogen balance. *The Match Factory Girl*: a tragicomic fable about a girl who takes revenge with matchsticks. *On Body and Soul*: a romantic fairy tale about two abattoir workers with the same dreams. *Wonderstruck*: a family mystery in which two boys from the present and a girl from the past in New York go in search of the same secret. €6.50/€5. Venue: Wilhelmijnaweg 3A, Wageningen.

MOVIE-W.NL

Sunday 28 January, 15:00
SUNDAY UNIVERSITY IN THE BBLTHK

Toine Timmermans (Fresh Food & Chains) will give a lecture on 'Together against Food Waste'. Roughly 40-45 percent of food waste takes place in the home: to the tune of an average of €450 per year per household. The lecture will go into activities that can help to turn the tide: activities which will be launched in 2018 with collaboration from climate partners, businesses, Wageningen residents and the municipality. 'Wageningen as a living lab against food waste'. Venue: bblthk, Stationsstraat 2.

BBLTHK.NL

Tuesday 30 January, 16:00
WEES SEMINAR: 'HONEYDEW AS FOOD SOURCE FOR INSECTS: A SWEET THAT CAN BECOME TOXIC'
Dr Alejandro Tena will give a seminar

on the role of honeydew consumers, such as ants, in the larger context of agroecosystems, with a particular focus on the exposure of beneficial insects to insecticides. Drinks and discussion at The Spot afterwards. More information on the seminar and a special workshop earlier that day can be found at www.weeswageningen.nl. Venue: Orion C2051.

Thursday 1 February, 12:30-13:20
LUNCH WORKSHOP WAGENINGEN WRITING LAB / WUR LIBRARY 'REVISING OF TEXTS'

It's a myth that a well-written text is written in one go; revising is crucial! At first you fully concentrate on the content of your text and only in the second stage do you concentrate on all the other aspects of academic writing. Wageningen Writing Lab will offer you practical strategies for revising your text. Do bring the draft version of your text with you! Be on time, as participant numbers are limited to 20. Admission: free. Venue: CO106 Forum. Info: info.wageningen-writinglab@wur.nl.

Tuesday 6 February
WUR CAREER DAY

Student Career Services is organizing the 3rd Career Day. This day is a good opportunity for orientation, to meet companies and you might even have an interview or lunch with an employer. About 64 organizations are joining the Career Day, which includes a fair, workshops, and presentations. Registration is open at www.wur.nl/careerday. Deadline is 28 January. Free of charge. Location: Orion building.

colophon

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>>TYPICAL DUTCH



ILLUSTRATION: HENK VAN RUITENBEEK

The Dutch and freebies

Last autumn I was working at a Dutch event over the weekend. We supplied our guests with free coffee, tea, cookies and fruit. The event organizers did not announce that all the snacks were free, so at first most guests did not touch them because they thought they had to pay. However, after realising that all the snacks were on the house, people started packing them in their backpacks, handbags and even jackets.

It was still early and the event was not nearly over. Where I come from it is weird to carry off food in the middle of an event or party. In fact, most people don't like to be seen taking food and snacks home at all. Food is usually left behind and if you do want to take something home, you secretly and politely ask the kitchen staff after the event if it is OK to do so. But here it seems to be the norm to put food in your pocket or bag in the middle of an event without considering that other people who come later might miss out.

On the same day I invited my friends to dinner. I made a typical meal from my country and they offered to bring desserts and drinks. But after dinner I was perplexed when everyone packed up the leftovers of what they had brought and left. In my country it is considered courteous to leave the leftovers for the host just in case another guest walks in. **Monica Mbuthia, a Master's student of Development Studies, from Kenya**

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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 euro and Dutch candy.