

Sterksel closes

Last experimental farm for pig research bites the dust | **p.5** |

Manual labour

'Five times more people will work on the land in 2040 than now' | **p.8** |

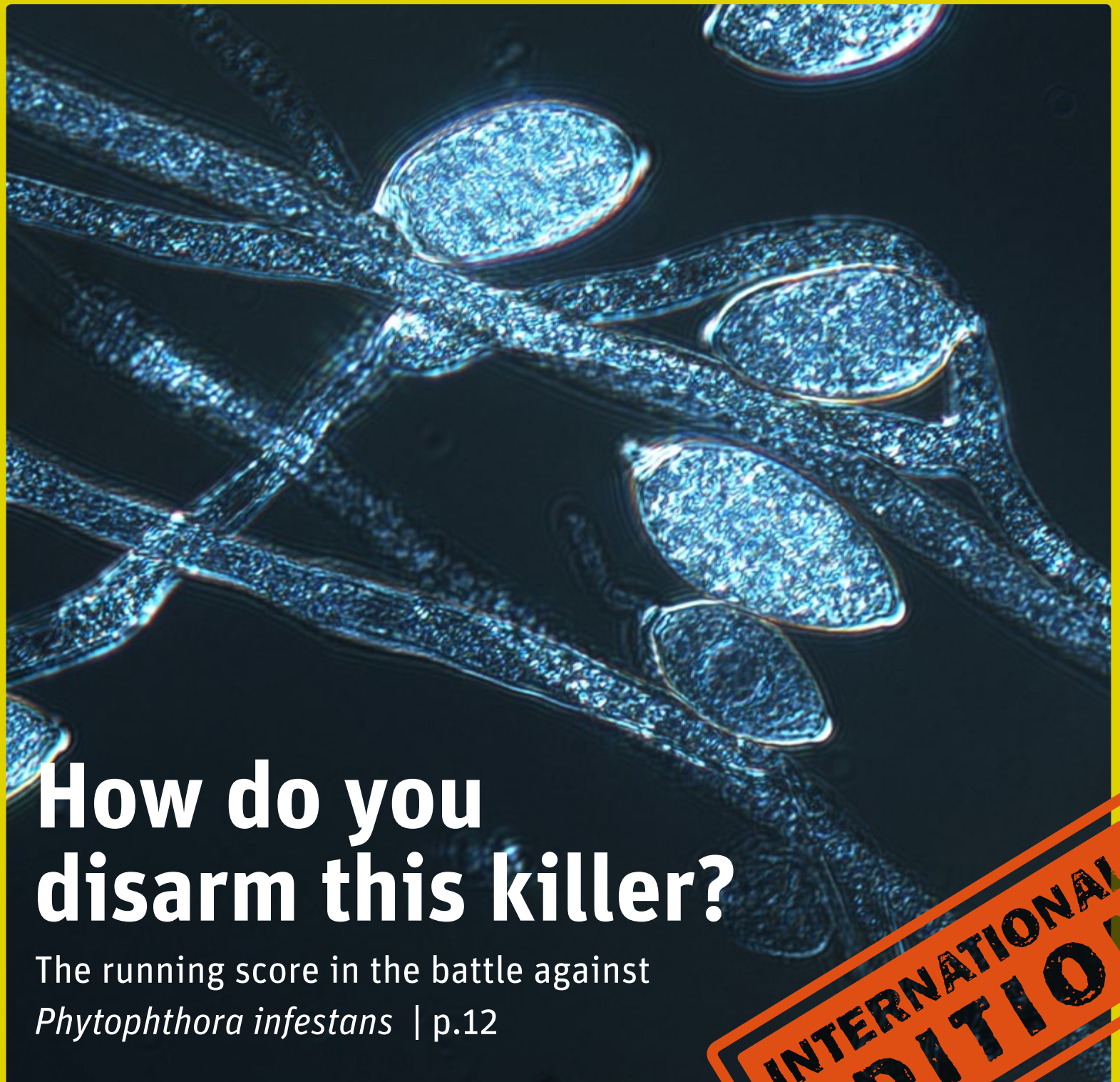
Student writes book

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RESOURCE [EN]

For everyone at Wageningen University & Research

no 3 – 20 September 2018 – 13th Volume



How do you disarm this killer?

The running score in the battle against *Phytophthora infestans* | **p.12**

**INTERNATIONAL
EDITION**

Thijs + Dried Blood Spot Autosampler

Thijs Meijer, veterinary drugs researcher at Rikilt



QUICK BLOOD CHECK

The blood sampler is the latest gadget in the battle with the hormone mafia. It makes quick ten-minute analyses of drops of blood possible, explains Thijs Meijer. Which enables him to track down foreign testosterone in bovine blood, as he is doing here. The sampler takes the blood off the sample paper and prepares the actual detection process. This saves a lot of (manual) work. State of the art stuff, because it is still at the trial stage. Detection ultimately takes place in the fluid chromatograph/ mass spectrometer in the background. © RK, photo Sven Menschel

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EXPLORING

Over 150 people – most of them students – showed up for a debate about circular agriculture organized by *Resource* last Monday (see p.4). That just goes to show that Agriculture minister Carola Schouten's new vision for a circular food system has struck a chord. But the debate also made it clear that we are all still exploring the territory. Does circular agriculture spell the end of the Mansholt doctrine – a lot of food at low cost – and is it the turning point towards a new, sustainable food system? Or is it just old wine in new caskets, served by false prophets who want to saddle farmers and horticulturalists with more rules and requirements on the world market?

These questions are not answered clearly in Schouten's agricultural vision. It most resembles the standpoints of the Christian Union and D66 parties, which want to have their cake and eat it when it comes to changing the agriculture sector. And the rest of parliament is still hopelessly divided on the issue. So Schouten will need to drum up support from both right and left during this cabinet's term before she can make choices and go into action. And for that, she could really use some policy support research from WUR.

Albert Sikkema, editor



>> [Two 'addicted' students buy pool table for in The Spot | p.26](#)

Budget Day: more cash for education and applied research

WUR TO GET 22 MILLION EXTRA

Budget Day had some good news for WUR. Wageningen University will get an additional 5 million euros in 2019, Wageningen Research over 17 million euros more. These extras were already in the Rutte III cabinet's coalition agreement but they have now been made more specific.

As of 2018, the university is the responsibility of the Education ministry rather than the ministry of Agriculture. The university has gained from this change as the ministry of Education has scrapped the former two-percent rule. That rule set a maximum of two percent on the annual in-

crease in direct government funding for Wageningen education, even when student numbers grew much faster.

The two-percent rule no longer applied for current growth in 2018, but as of 2019 the university will also get partial compensation for past increases. As a result, Wageningen University will get a structural 5 to 6 million extra per year. The cabinet will find about half of this extra cash by reversing cuts in agricultural and nature education while the other half will come from a reallocation of funds to the different universities.

There will be some deductions from the extra 5 to 6 million for

Wageningen University. That is because the cabinet is implementing an additional general cut of 12 million euros for all universities, on top of the previously announced efficiency cut of 13 million for 2019. Wageningen University will bear a proportionate share of that cut. On balance, the university is expected to get around 5 million extra next year, says Finance and Control director Bas Wessels.

After years of cutbacks, the government also has good news for Wageningen Research. Firstly, the Wageningen institutes will get a structural increase of 13.2 million euros from 2019 to strengthen their knowledge base. The cabinet

had already promised that amount. In addition, there will be 4.6 million euros for 'mission-driven programmes' next year, rising to 12.2 million in 2020, according to the cabinet's agriculture budget. So in two years' time Wageningen Research will get additional government assignments worth more than 25 million euros.

The Executive Board had already allowed for the structural extra cash for the university. In anticipation, the board announced in July that all chair groups would get an additional 40,000 euros in structural funding as of next year to accommodate the growth in teaching work. **AS**

'USING SUSTAINABLE FEED LIMITS LIVESTOCK NUMBERS'

If the Netherlands switches to circular agriculture, farmers will only be allowed to import livestock feed from countries which are considerate of nature, the environment and the climate. And that limits livestock numbers, said director of the Animal Sciences Group Martin Scholten on 17 September at a debate about circular agriculture organized by Resource.

Scholten is an advisor to Agriculture minister Carola Schouten, who presented a vision of the future on 8 September to which circular agriculture is key. He thinks Dutch livestock farmers can start by sourcing more feed in their own country, such as sugar beet leaves, which currently get ploughed under. They could also import some feed from other sustainable food systems. But the sum of these two sources would limit livestock numbers, states Scholten. 'And I hope that we would then no longer have a manure surplus in the Netherlands.'

Anne van Doorn, a researcher in the Environmental Sciences Group, stated in the debate that Dutch agriculture must learn from the pioneers in nature-inclusive agriculture. The new agriculture must be based on the Earth's carrying capacity and produce biodiversity as well as food, for the sake of the climate. For this reason, imports of livestock feed must be minimized, and so must the export of manure. This will create a circular



▲ At the well-attended *Resource* debate in Impulse, Martin Scholten, Jan Broeze and Anne van Doorn (from left to right on the stools) discussed the possible introduction of circular food systems in the Netherlands.

agriculture system with fewer animals, Van Doorn explained.

Circular economy expert Jan Broeze of Wageningen Food & Biobased Research thought this an over-optimistic take on things. 'As long as the economic system doesn't change, our food production will continue to be a race to the bottom, with low prices and food waste. Consumers know too little about how our food is produced and what it costs, so farmers go on getting low prices. Maybe the government should tax

the CO₂ emissions from our food, just as it does in the car industry. Let the market pay for the climate impact of agriculture.'

The new circular vision has implications for WUR too. The speakers agreed that switching to circular agriculture calls for an integral plan that addresses livestock farming, arable farming, nature development, environmental impact, economic impact and business models. And that calls for more collaboration between WUR researchers. **AS**

PHOTO: LUIJK ZEGERS

WUR PIG FARM STERKSEL TO CLOSE

The Swine Innovation Centre (VIC) in Sterksel will close in 2020. The experimental farm has too few permanent partners and long-term research projects, and as a result not enough structural funding.

VIC Sterksel already got into difficulty three years ago. Back then, the director Annie de Veer of Wageningen Livestock Research carried out a cost-cutting exercise, which led to the loss of half the 18 staff. She then went in search of research

partners who could give the centre a future. She talked to pig farming producers' organization POV, businesses in the pig farming sector, the province of Noord-Brabant and the University of Applied Sciences HAS Den Bosch. But that did not deliver the results she had wanted. So now WUR is pulling the plug.

Livestock Research won't stop its work on pigs as there are still important research questions for the pig farming sector concerning circular agriculture, health and animal

welfare. The sector also wants to develop new barn systems to reduce emissions of ammonia and fine particles. Some of those studies were already being done on privately owned pig farms and it is possible this approach to applied research can be extended. De Veer is also still talking to farming and research organizations about setting up joint studies. **AS**

See also the IMO section on page 22: 'Why is Sterksel closing?'

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Higher education

The theme of the falling vaccination rate has been simmering in the Dutch media all summer. And the blame is laid at the feet of those with higher education: 'The modern "anti-vaccinator" enjoyed higher education, is well-read and self-confident,' announced the *Volkskrant* newspaper in August.

Now I am a vet myself, so vaccinations may have slightly different connotations for me than for other people. But I also have two children, and they were called up for all the vaccinations. I've lost count on the number of times I've sat with a daughter on my lap at the infant health clinic: waiting, listening to the cries of children before us, seeing the plasters on their fat little thighs... There are nicer things in life.

And yet I go along with total conviction. If you make the slightest effort to look through the scientific research, there is only one logical conclusion you can come to: we all benefit from a high rate of vaccination, and your child benefits from the protection it affords. So as the parent of a healthy child, you should just go along for those jabs. No, it's not nice for your dear little baby, and yes, there are always minuscule risks in life and therefore also for vaccinations. But weighing that up against the positive consequences is exactly what you should be capable of, with your highly educated brain. Of course people with higher education are critical about vaccinations, but just take the trouble to use your critical mind to do a literature study. Perhaps in the way they taught you in the first year of your 'higher education' course. So please, *Volkskrant*, be a bit more precise next time: 'The modern "anti-vaccinator" is well-read on the internet, self-confident and in possession of a diploma, but doesn't bother much with the Evidence Pyramid, literature studies and science.' **B**

Guido Camps (35) is a vet and a postdoc at the Human Nutrition department. He enjoys baking, beekeeping and unusual animals.



in brief

>> KATRIEN TERMEER Crown member of SER

PHOTO: GUY ACKERMANS



▲ Katrien Termeer

Professor of Public Administration and Policy Group Katrien Termeer has been made a Crown-appointed member of the Social and Economic Council (SER), an important advisory body to the cabinet and lower house of parliament. Termeer researches innovative forms of governance related to sustainability, climate change and food systems. 'Recently I've been on an SER committee on the circular economy, to the satisfaction of both parties. So when they asked me if I'd like to do more, I thought that would be very nice and interesting.' As an SER member, Termeer will focus on international corporate responsibility issues. 'The SER is very active in drawing up covenants, in the textiles and gold sectors for example. The SER advises, as well as taking the lead in bringing players together to tackle problems such as environmental pollution or exploitation.' **LvdN**

>> WAGENINGEN SPRING Exhibition about occupation

The Wageningen Spring was hot. The Spring of 1980, that is. The year that hundreds of students occupied the main building of the then Agricultural College for weeks in protest against cuts to education and the 'one-sidedness' of Wageningen education. There is an exhibition about the student protest in De Casteelse Poort museum in Wageningen from 23 September to 21 October. The main exhibits are photos, newspaper cuttings and cartoons. On 9 October, cultural historian Jobbe Wijnen will give a talk in the town library about student protests in the 1970s and 80s, including the Wageningen Spring. Wijnen took the initiative to create a website called The Wageningen Barricades about student protests through the years. You can read the story of the Wageningen Spring, one of the 100 years of WUR series, on pages 18-21 of this magazine. **RK**



▶ Wageningen students demonstrate for better education in the spring of 1980. See too the story on page 18.

EXTENSION TO SCIENTIFIC CODE OF CONDUCT

The new code of conduct for researchers and students has twice as many rules as the old one. A newly appointed Integrity Officer will roll out the new code within WUR.

The new *Netherlands Code of Conduct for Research Integrity*, drawn up at the behest of the Association of Universities VSNU and similar organizations, is much more specific and wide-ranging than the old code from 2004. The new code has 61 standards that define ethical scientific practice. That is almost twice as many as in the old code.

The 61 standards elaborate on the five basic principles for integrity in research: honesty, scrupulousness, transparency, independence and responsibility. An example of a new element in the standards is 'citation pushing',

which is mentioned as unacceptable behaviour that should be punished. Citation pushing is the use of inappropriate means to boost your own or someone else's citation score. The old code did not cover that. This rule was included partly at the insistence of WUR, confirms rector magnificus Arthur Mol. The reason was a citation pushing incident that occurred two years ago in Wageningen.

Mol is enthusiastic about the new code. 'The code has been written to fit very closely with everyday research practice. It also explicitly takes applied research into account. The TO2 federation – the collaborative group of organizations working in applied research that Wageningen Research belongs to – will also be using the code.'

A new aspect is the distinction it makes in the severity of the research offence. 'Research misconduct' is the worst kind of offence. The categories 'questionable research practices' and 'minor shortcomings' were thought up for less serious offences.

About one third of the 61 standards fall into the worst category. The weight given to different standards can be quite curious. Citation pushing is seen as a more minor offence than the publication of research results that are not yet sufficiently certain. Not giving an honest list of co-authors in the right order is a more severe offence than misusing research funds.

Under the new code of conduct, academic and applied universities must make sure their staff and students are familiar



with the code and apply it properly. WUR will be appointing a new Integrity Officer for this task. Mol: 'That person will need to make sure this code is rolled out and becomes ingrained.' **© RK**

SPINOZA WINNER WANTS TO GET GMO DEBATE GOING

Microbiologist John van der Oost will be using his Spinoza award worth 2.5 million euros to develop more tools for cutting DNA. But he also wants to use the money to get a debate on genetic technology going in secondary schools. 'We are all genetically modified organisms.'

On 12 September, Van der Oost received the Spinoza Prize from research funding organization NWO for his research on CRISPR-Cas, a bacterial antiviral system that you can use to modify the genomes of plants and animals. The prize, the highest distinction in Dutch science, lets him extend his research. He wants for example to study other, less well-known CRISPR variants in bacteria and the so-called Argonaut protein, a possible alternative to CRISPR-Cas.

Van der Oost also wants to spend the money on building a synthetic cell. 'I'm in a large con-

sortium that got 18 million euros from the NWO's Gravitation programme to develop a synthetic cell. That's an awful lot of money, but it's not enough.'

Finally, Van der Oost wants to breathe new life into the debate on genetically modified organisms (GMOs). 'Terrorism expert Beatrice de Graaf, who received a Stevin award this year from NWO, has developed a module that lets secondary school teachers respond to the news. The plan is that we will now develop a module together for a GMO debate in schools.' Van der Oost wants to focus on getting the facts on the table. 'Life on Earth develops through cell division and duplication of DNA. Copying errors are made in that duplication process and pieces of DNA are swapped. That means genetic modification is very common in nature. It's the source of natural variation. In that sense we are all GMOs.' **© AS**



▲ On 12 September, microbiologist John van der Oost was handed the Spinoza Prize worth 2.5 million euros and the accompanying figurine of the seventeenth-century thinker Baruch Spinoza.

PHOTO: NWO, BRAM SAEYS

Sneak preview of new nature documentary WAD on campus

A FILM ODYSSEY WITH HUNTING STARFISH

This film that reads like a good novel. No fairy tales but the raw, pure beauty of Dutch nature. That is what film director Ruben Smit, known for *The New Wilderness*, had in mind with his latest film *WAD – Surviving where water meets land*. There is a sneak preview of the film on Wednesday 26 September on campus.

The film portrays the entire ecosystem of the Wadden region. From microscopically small plankton - mini-organisms that float in front of the lens like extraterrestrial beings – to the top predators such as grey seals. The film crew also managed to capture images never seen before, such as the birth of a common seal and a pair of peregrine falcons hunting together.

A 15-person crew shot the film in over 300 production days. By way of comparison: the average film takes 30 production days. They collected a total of nearly 500 hours of film. ‘Sometimes we had to go back three times for that one beautiful shot that we knew was there,’ says Smit. ‘But once you’ve got it... That is so terrific.’

Before Smit could start filming, he spent nearly two years doing research. This involved a lot of talking to scientists, including some at Wageningen Marine Research. ‘You can’t do without that scientific knowledge because you can only film nature well if you understand exactly how it works.’ Although he is an ecologist himself, he still gets surprises. ‘I knew for instance that starfish hunt mussels, but I didn’t know they did that in such large numbers at a time. I only realized that when I went out on a research vessel and we fished out huge numbers of starfish along with the mussels. I immediately started looking into how we could film that under water.’



▲ Ruben Smit during shooting for the new nature film *WAD*.

Sound plays an important role in the film, explains Smit. ‘We recorded 40 different sounds of sand and 70 different sounds of the sea. The audiences unconsciously absorbs them and that draws you into the film more.’ It certainly does work, because as you watch you feel as though you are under the creaking ice with the seal or in the crunchy sand with the newborn shelduck ducklings. And you can’t help smiling at the oystercatchers’ dance-off to decide who gets the best nesting place. Sometimes it is hard to believe that it was all filmed in the Netherlands, especially the shots of the Northern Lights.

There is very little commentary in the film. Only at the end is the viewer told that the Wadden region is seriously threatened by humans. Smit: ‘Above all, we wanted to let the images speak for themselves. If you start explaining a lot, it diminishes that sense of wonder and fascination.’

TL

The premiere of WAD will be in Leeuwarden on 1 October. The film will be released in Dutch cinemas from 4 October. On 26 September, there is a sneak preview in the Waaiersaal in Orion, with a talk by director Ruben Smit.

Earth

26 Sep	Creative Innovation: Charlie Williams presents his final work
26 Sep	Preview movie Ruben Smit: The Wadden Sea, living on the Edge
26 Sep	Wisdom & Wonder Movie Talk by Louise Fresco (in English): Chungking Express
3 Oct	Children’s University

You’ll find everything about 100 years of WUR on www.wur.eu/100years

PhD candidate outlines radically different sustainable agriculture

WILL WE GO BACK TO FARM LABOUR?

Truly sustainable agriculture demands radical measures. In his PhD thesis, Meino Smit sketches a picture of such agriculture in which human beings are central, rather than machines. His account can be read as the specifics of the general vision of circular agriculture recently presented by minister of Agriculture, Nature and Food Quality Carola Schouten.

Agriculture has never been as unsustainable as it is now. Smit demonstrates this in his thesis, *The sustainability of Dutch agriculture*, for which he received his PhD last week from emeritus professor of Rural Sociology Jan Douwe van der Ploeg. Smit shows how the ecological footprint of agriculture developed between 1950 and 2015, zooming in on the direct and indirect consumption of energy, land and labour. The results of this calculation exercise are telling. Direct land use for farming itself has gone down by one fifth since 1950, to 1.8 million hectares. On the other hand, the indirect use of land elsewhere in the Netherlands or the world has gone up by nearly three million hectares. So we use much more land to make agriculture possible than is used by farming itself.

MUCH MORE ENERGY

The same picture emerges for the consumption of energy and labour. Due to mechanization and upscaling, the number of people working on the land is now only one fifth of what it was in 1950. Indirect labour, however, has more than doubled, to more than the direct labour. Yields from the land are somewhat bigger (in both kilos of products and caloric value) but that requires six times as much energy as in the past.

Smit's thesis also outlines a vision for agriculture in 2040



▲ Eastern European workers harvest pumpkins. In Meino Smit's vision of the future, there will be five times as many people working on the land in 2040 as now.

which meets the climate goals in the Paris agreement. The scenario he describes sounds revolutionary. There is no place in it for large-scale import and export. Agriculture produces solely for the local population. And that population must halve its meat consumption. Intensive livestock farming disappears, resources are reused as much as possible, and five times as many people work on the land, with manual labour predominant.

How realistic is this?

'Let me turn it around: how realistic is it to do nothing? If you do nothing, you let the whole thing crash. I am trying to prevent a crash and fulfil Paris. That *is* realistic, while what some people are doing is unrealistic, because it is just business as usual.'

Sustainable agriculture in 2040 will be rather like the agriculture

of 1950, you say in your thesis. Is that the goal?

'No, I don't want to go back to the 1950s at all. But the agriculture of that time contained very valuable elements, which we can learn from. There were a lot more mixed farms then, with livestock and plant production combined. The fields were smaller and the landscape had more natural features. The agriculture system was much more stable in terms of cultivation techniques, biodiversity was greater and the pressure of disease was smaller.'

How can you get five times more people working on the land? Agriculture in the Netherlands is already heavily dependent on Eastern Europeans because no one else wants to do that work.

'Working on the land isn't that bad. There are lots of people who would like to be farmers. And the work itself is changing too. In my



PHOTO: HOLLANDE HOOGTE/ KOEN VERHEIJDEN

scenario, big companies are not necessary for sustainable agriculture. It's a very different way of working on a small farm. New technology will have to be developed that is geared to making it as pleasant as possible to work on the land.'

How does your sketch of agriculture in 2040 relate to Minister Schouten's new agriculture vision?

'The minister writes in general terms that we shall have to move towards sustainable circular agriculture but she avoids hard choices. To me, that is unrealistic. I see my scenario as a filling out of Schouten's vision. I show what it means if you do make choices.' **© RK**

SOLAR ENERGY NEEDS BETTER SUNSHINE FORECASTING

More and more people have solar panels. That poses problems for energy network managers because the networks are not designed to cope with big peaks and dips in the electricity supply. In a project called 'Every ray counts', energy supplier Alliander and WUR are now working to improve sunshine forecasting.

At present, solar energy forecasting is mainly based on what is being generating at the moment, and what historical data might lead you to expect for the rest of the day, says project leader Chiel van Heerwaarden of the Meteorology and Air Quality chair group. This can be improved on by using meteorological data to anticipate the peaks and dips to come. Clouds and cloud formation are essential to this. That may seem obvious but it is not entirely so. A cloud that hides the sun does of course cause a dip in the production of solar energy. But when the same cloud is not in front of the sun, it can cause over-production, explains Van Heerwaarden. 'That happens because clouds reflect some of the sunshine that falls on them onto the solar panels. This makes the production level higher than it is when the sky is cloudless.' This effect has not yet been integrated into the models for forecasting solar energy production.

MSc student Esther Peerlings is figuring out the relation between solar radiation and clouds. To this end, she is analysing the fluctuations in solar radiation 'on a minute scale' at WUR's Veenkampen weather station near Wageningen. Linking this data to information from Alliander should provide a better understanding of the effects of particular weather types on the grid. But there is more to it than that. The sunshine forecasts themselves could be a lot more precise. 'We are working with the KNMI (Royal Netherlands Meteorological Institute) to look at how we can get better solar energy forecasts using the data from Harmonie, the weather model used in the Netherlands,' explains Van Heerwaarden. In the long term there are even models in the pipeline that can predict individual clouds. 'But that will not be for another 10 years. What we are going to do now is simulate clouds and see whether that produces better forecasts of solar energy.'

The project with Alliander will last four years and is funded by the Netherlands Organization for Scientific Research NWO. Alliander is contributing funding, as well as PhD candidate Frank Kreuwel, who comes from its ranks. **✎ RK**



▲ Now the number of solar panels in the Netherlands is increasing, there are big peaks and dips in the electricity supply.

VISION

'We can't do much against African swine fever'



African swine fever is spreading with alarming speed and has now reached Belgium. There are no drugs or vaccinations against this disease. And culling wild boar won't help either, thinks Mart de Jong, professor of Quantitative Veterinary Epidemiology.

Should we be worried?

'We certainly should. Up to now, only infected wild boar have been found dead in Belgium, but if the disease breaks out among farmed pigs, we can't do much about it. There is no treatment and, unlike classical swine fever, no vaccine either. For now there is not much chance of the virus being passed from wild boar to pigs on farms, because pigs are generally kept indoors in the Netherlands. That makes the risk of contact with wild boar smaller than it is in eastern European countries, where there are more small farms on which pigs are outdoors more often. On the other hand, we do have an awful lot of wild boar here. If the virus manages to survive in that population, sooner or later it will reach pigs on farms.'

What would be the consequences of an outbreak of the disease here?

'If it is suspected that an infectious animal disease has entered a particular area, there is a three-day transportation ban. If a farm turns out to be infected with the virus, the animals are culled. If the virus is only found in wild animals, steps are taken to prevent it spreading any further, such as closing off the area.'

Should the measures be tightened up?

'At the moment, trucks that transport pigs from countries where there is African swine fever are cleaned and disinfected at the Dutch border. But the virus also spreads among wild boar. To shoot wild boar is shutting the stable door after the horse has bolted, because you would have to kill an awful lot of them to reduce the population enough to stop the virus in its tracks. Anyway, by culling you create empty areas which new boar then move into.' **✎ TL**



ROUTINE IS GOOD FOR COWS

Cows with a regular diurnal rhythm and set times for eating and rest stay healthy for longer than cows that don't have this. This finding comes from a study of indicators for resilience in cows by Ingrid van Dixhoorn.

Van Dixhoorn, a researcher at Wageningen Livestock Research, used sensors to look for signs of increased vulnerability in cows that had just calved. At that point a lot changes for the cow: her hormone balance changes, she starts to give milk, she is moved to another part of the barn with more cows, and her feed regime is changed. All those changes have an impact on the cow's immune system, which can show up in a low energy balance, or an infected udder or uterus.

'In that phase, many cows battle with minor ailments but only a few fall really ill,' explains Van Dixhoorn. She wanted to know what the tipping point was from healthy to diseased, and whether you can see it coming. 'So I looked for signs of increased vulnerability.' In doing so, she was testing



PHOTO: SHUTTERSTOCK

the theory of Wageningen ecologist Marten Scheffer, who discovered 'tipping points' between healthy and diseased nature.

Cows that have a good diet and a set feeding routine before they calve are the healthiest after calving, discovered Van Dixhoorn. The same goes for cows with a

fixed circadian rhythm. Restless cows that have a variable rhythm before they calve often suffer health problems after calving. Van Dixhoorn is going to check these indicators at several dairy farms.

Earlier research that Van Dixhoorn did in 2016 showed that pigs in spacious, enriched sheds

recovered from diseases faster than pigs in standard sheds. The 'enriched' animals had more white blood cells before they were infected than the 'standard' ones. She will research when the pigs build up the extra immunity and which management factors are responsible for that. **AS**

A STEP NEARER TO MEASURING RAIN WITH GSM MASTS

The GSM Association (GSMA) is going to encourage providers to make mobile data available for use for rain measurements. This has been agreed with the Wageningen pioneers in this field.

The GSM rain measurement technique is based on the fact that precipitation suppresses the signal with which transmitter masts communicate with each other. The strength of that signal is recorded by providers. The suppression of the signal by precipitation turns out to be a useful measure of the intensity of the rain between two transmitter masts.

Access to the signal exchanged by these masts has been problematic up to now, says professor of Hydrology and Quantitative Water

Management Remko Uijlenhoet. 'We would have to consult every provider in every country to get that access.' The GSMA has now taken the initiative to look for a less time-consuming alternative in consultation with Uijlenhoet and a colleague at the Royal Netherlands Meteorological Institute, KNMI. 'We are an interesting party for them,' says Uijlenhoet. 'We reveal how their infrastructure can be made use of.' It would also be possible to make some money from rain measurements via mobile transmitter masts. 'In large areas of the world, such as Africa, Asia and South America, there is little or no infrastructure for measuring rain, but there are GSM masts. You can make use of this technique there.'

The exact connection between precipitation and suppression is complicated too, as an experiment in Wageningen showed. For over a year, precipitation was measured with signals from microwave links between masts on the roof of the Biotechnion at the Dreijen and the Forum on campus. The results of that trial, carried out with the KNMI, were published last month in the online journal of the European Geosciences Union.

The experiment showed that mist, dew and sleet have a big impact on the results of the measurement. They deposit moisture on the antennae, therefore suppressing the signal.'

Uijlenhoet: 'You have to correct for that because it is not rain.' What is more, each brand of an-

tenna seems to react in its own way to the disruptive influences.

But this is not enough to cast doubt on the usefulness of GSM masts for measuring precipitation, says Uijlenhoet. Especially in parts of the world which do not have a standard system for measuring rain. **RK**



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PROPOSITION

‘More stuff doesn’t make us happy’

Sam van Es researches plant growth. But he also likes to philosophize about the endless economic growth in the western world and the constant wish for more. It must be possible to change that, he thinks. Buying a book instead of the latest smartphone strikes him as a good start.

‘Our society revolves around the incorrect assumption that more stuff makes us happier. That pursuit of happiness is what life is all about. Now of course books are things too, so in that sense my proposition might seem contradictory. But what I think is that when you buy a book, you are not just buying a thing but also the knowledge, the ideas, the dreams and the fantasies it contains. So if you have to buy something,

books bring you closer to happiness than the latest smartphone. I am not arguing for a super-minimalist lifestyle, but I

don’t believe that new things are better by definition. My motorbike, for example, is 25 years old, but I wouldn’t get any more pleasure out of a new one. So I am materialistic too.

That constant wish for more is fed by marketing. The economy is sacred, and for it to shrink would be disastrous. So to realize that constant growth, more and more stuff must be produced and bought. Advertising shows us images of happy people with their new car. Coca-Cola is even advertised as “happiness in a bottle.” Whether consciously or not, you go along with that.

I am more in favour of a different economic model, such as the doughnut economy. In that model you have to stay inside the ring of an imaginary doughnut in order to make sure there is enough to provide for people’s basic needs. But for sustainable production, you don’t go beyond the outer ring either. So it is based on limits instead of the endless economic growth that we currently aim at.’ TL

*Buying books is
the closest a person
can get to buying
happiness*



Sam van Es got his PhD in Molecular Biology on 18 September. He studied how TCP proteins regulate the growth and development of plants.

Francine Govers: 'We are looking for its weak spots'

How do you disarm *Phytophthora*?

The cause of potato late blight, *Phytophthora infestans*, is a very sneaky and stubborn micro-organism. But thanks to a new approach, scientists are getting a steadily clearer picture of its weak points. Here's the current score in the arms race between pathogen and potato.

text Albert Sikkema illustration Steffie Padmos

Plant breeders regularly claim to have developed a new potato variety that is resistant to the harmful micro-organism *Phytophthora infestans* (see inset). By cross-breeding they have introduced a resistance gene that they think will keep the little fungus-like pathogen out. But Francine Govers, personal professor in Phytopathology and a leading expert on *Phytophthora*, never makes these kinds of claims. She knows that the stubborn pathogen cannot be stopped with a single resistance gene and will get around this new defence barrier sooner or later.

So WUR is looking for heavier weaponry with which to protect potatoes from *Phytophthora* infection. Firstly, Govers and colleagues at the Laboratory of Plant Breeding are looking into how they can bolster the potato's defences using new techniques. Secondly, they are looking at how they can deactivate *Phytophthora*'s weapons, the so-called effectors. These proteins force their way into the potato plant's cells while suppressing the plant's immune system. And thirdly, the group looks at how you can 'blind' *Phytophthora* so that it can no longer find its way to the potato.

SCORCHED EARTH

Phytophthora has to get past two defence barriers to damage the plant. The first is the cell membrane, where receptors recognize invaders. About three years ago, Plant Breeding found a receptor that recognized all *Phytophthora infestans* strains. PhD candidate Manos Domazakis did further research on this, but could not find any leads for strengthening resistance.

'Phytophthora mutates easily and can make hundreds of different attacker proteins'

The second line of defence lies inside the plant cell. Cells of potato varieties with resistance genes that have been introduced through cross-breeding make proteins that cause local cell death around the locus of infection. This scorched earth policy works well, but there is a problem. 'Because *Phytophthora* mutates easily or throws away pieces of DNA, and can make about 300 different effectors, there are always strains that are not recognized by the new vari-

eties. For a watertight defence system you need multiple resistance genes, each of which recognizes a different effector,' says Govers.

GUNPOWDER

So it turns out to be no easy matter to hermetically seal the potato's defence barriers against *Phytophthora*. So Govers' group wants to find out more about the attacker's weaponry. There are very many species of *Phytophthora* and each species makes its own arsenal of effectors. The only thing these different effectors have in common is a small motif of four amino acids. But this is a crucial detail, because all effectors need that motif in order to be able to penetrate the plant cell. By way of analogy: if gunpowder is used in all attacks, you only need to make gunpowder harmless. So the researchers are hoping to find something that can disrupt the activity of this motif of four amino acids.

Govers' PhD candidate Chara Schoina found three genes in *Phytophthora* that code for enzymes that may contribute to the functioning of the motif. Let's call them the 'gunpowder genes'. Further research on two of these genes revealed that they make an enzyme that cuts effectors into pieces, and this cutting could be essential for getting the effectors into the plant cell. Govers: 'If you can put the brakes on this enzyme, *Phytophthora* finds it more difficult or even impossible to penetrate the plant cell.' Further research is needed, but this may be the beginnings of a form of biological pest control.

SWITCHING OFF ANTENNAE

Meanwhile, Govers' group is digging deeper into the secrets of *Phytophthora*, taking a leaf out of the medical sciences' book. 'Medical

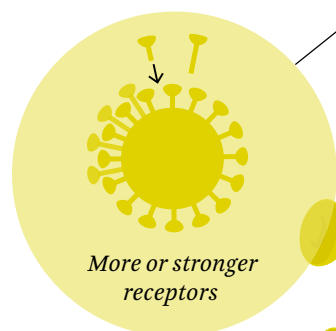
FOUR POSSIBLE STRATEGIES FOR FIGHTING *PHYTOPHTHORA INFESTANS*

THE POTATO PLANT CELL

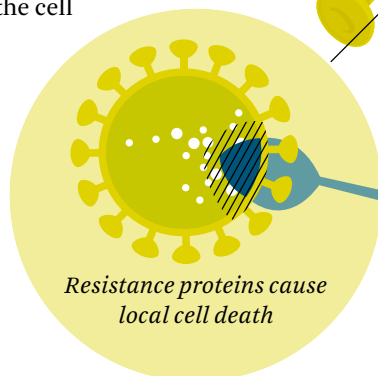
VERSUS

PHYTOPHTHORA

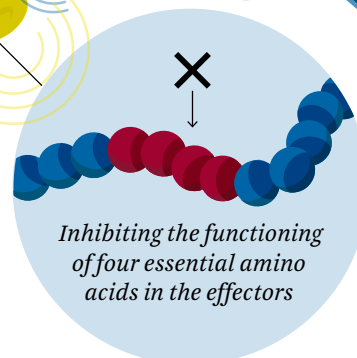
1 Improving defences in the cell membrane



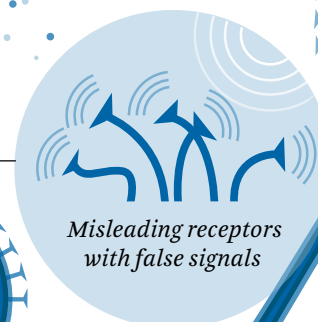
2 Improving defences in the cell



3 Sabotaging the 'assault weapons'



4 'Blinding' the attacker



scientists look at very specific processes in pathogens, for example a unique biochemical reaction,' says Govers. 'If you bring a process like that to a standstill, you've conquered the disease – that's how a lot of medicines work.' PhD candidate Johan van der Hoogen looked at the GPCRs, a group of receptors in cells that signal what is going on outside the cell, such as the presence of pheromones or a physical barrier. Humans have about 1000 GPCRs, *Phytophthora* has 132. Among the pathogen's GPCRs some probably 'feel' the proximity of a potato plant and then activate the attacker proteins. If you switch off these antennae, *Phytophthora* loses its capacity to locate potential victims.


ALTERNATIVE DISEASE CONTROL

'In one case we already knew that without a particular GPCR, *Phytophthora* loses all its sense of its surroundings,' says Govers. But Van der Hoogen discovered that this receptor was present in 21 species of watery microbes that live in

the same habitat as *Phytophthora*. It remains to be seen whether he can deactivate this GPCR without damaging an entire ecosystem. Four other types of GPCRs are unique to *Phytophthora*, Van de Hoogen discovered. Such unique receptors offer starting points for the development of alternative pesticides that do not affect other organisms. One possible ingredient in such a pesticide is a ligand, a molecule that specifically activates a GPCR. So you can use it to overwhelm and disable a receptor, in just the same way as a DDOS attack disables a computer with a barrage of messages. Research is ongoing on whether a flavonoid could serve as a ligand and could disable *Phytophthora's* antenna for its environment.

WEAK POINTS

'We are looking for *Phytophthora's* weak points,' is Govers' summary of the research strategy. And although the search is far from over, slowly but surely the contours of an alter-

native approach are beginning to emerge. One which will hopefully make the chemical pesticides currently in use superfluous in the long term, and which can limit the economic damage caused by potato late blight. 

MACRO DAMAGE BY MICRO-ORGANISM

Phytophthora infestans is the cause of the potato late blight disease. The oomycete (water mould or pseudo fungus) damages the leaves and stems of potato plants. Currently, the disease is mainly controlled by spraying the crop with chemicals, which costs Dutch arable farmers between 80 and 120 million euros per year, according to a WUR estimate. The farmers also lose about 11 million euros a year in harvest losses caused by the disease. Worldwide, the costs mount up to billions. The pesticides also cause serious environmental harm.



Adriaan Rijnsdorp looks back on 38 years of applied research

A fisheries biologist without sea legs

Adriaan Rijnsdorp said goodbye last week as professor of Sustainable Fisheries Management at Wageningen Marine Research. It was pretty much by chance nearly 40 years ago that he ended up in marine research. ‘My first day on board was ghastly.’

text and photo Tessa Louwerens

Adriaan Rijnsdorp’s father and grandfather both worked in the shipping industry in Rotterdam but he went to Groningen University to study animal ecology, and got particularly interested in the lives of ground beetles and birds. But there weren’t many jobs going in those areas and as

chance would have it, in 1980 Rijnsdorp landed a job in Fisheries Biology at the Netherlands Institute for Fisheries Management (RIVO), now merged into Wageningen Marine Research, in IJmuiden.’ ‘It wasn’t a conscious choice; I think I could have done something else with equal passion. But I haven’t regretted it for a moment.’

The world of marine ecology was totally new to Rijnsdorp. At first he missed direct experience of the animals in their habitats. ‘You sit on a boat and after half an hour of fishing, everything that has been scraped off the seabed is hauled aboard. But you have no idea how those creatures have lived.’ He learned a lot about this from the fishers. ‘They work with the sea day in day out and have an incredible amount of knowledge. Their observations prompted me to ask new research questions.’

WIND FORCE NINE

Rijnsdorp has vivid memories of his first trip. ‘I think they wanted to test what this land biologist was made of.’ Off he went towards Irish waters on board the *Katwijk 34*. ‘The first day was ghastly. We had wind force nine and I

‘Just when you think you’ve got some idea about plaice, you turn out to be wrong’

term effects of fisheries. I think it’s important as an applied scientist to publish your results in academic journals too.’

PLAICE BOX

He ended up concentrating on plaice. ‘This really is a fascinating topic. Just when you think you’ve got some idea about it, you turn out to be wrong.’ The example he gives is the ‘plaice playpen’ that he came up with: a protected area of 40,000 square kilometres in the North Sea where young plaice can grow up in safety. The idea was that, ultimately, fishers would be able to catch more adult plaice. Everyone was wildly enthusiastic and there were even plans for a statue of Rijnsdorp in the fishing village of Urk. But things didn’t go to plan.

‘We were expecting to improve plaice fishing even more, but then stocks of plaice totally collapsed. We were naïve and overconfident and we thought we knew everything, with our models. Because we hadn’t set it up as an experiment with control groups, it was impossible to evaluate it critically afterwards.’ The statue never went up.

EMOTIONAL POWER PLAY

It was a hard lesson for Rijnsdorp. ‘Something that was introduced with the aim of improving plaice fisheries, got turned into a measure for banning large cotters from certain zones. To me, the main reason it is painful is that it caused the fishers who supported us to lose their fishing grounds. In retrospect, we were not alert enough to the political context.’

This is a context in which fisheries biologists operate which Rijnsdorp has seen change gradually over the past 40 years. ‘In the old days, you only encountered mutinous fishers, who thought our research was nonsense. That relationship has gradually shifted towards one of collaboration. But the world has become much more complex. It is important for a fisheries researcher to understand the political context, to make sure we make decisions on a sound scientific basis and not on the basis of emotional power play.’

He experienced this for himself in January this year, when the European Parliament voted for a total ban on pulse trawler fishing.

In recent years, Dutch fisheries have invested millions in this fishing technique, in which flatfish are nudged off the seabed with electric shocks. The voting had taken place before Rijnsdorp and his colleagues had finished their large-scale study of the long-term effects of this fishing technique. In Rijnsdorp’s view, the decision was based primarily on emotions stirred up by the French environmental activist organization Bloom. Just before the vote, Bloom published a pamphlet portraying pulse trawling as a weapon of mass destruction that would transform the sea into a graveyard, and claiming that the shocks left fish with burns. ‘I was shocked to see that an NGO could obtain political support with lies and utter nonsense.’

POLITICAL STORM

Fisheries biologists need to be very aware of their role and of its limits, says Rijnsdorp. ‘In the 1990s, we knew that fishers were catching more fish than their allotted quotas. But we are not a branch of the fisheries inspectorate, so we didn’t give them away.’ Nevertheless, in order to estimate fish stocks accurately, the researchers did need to know how many fish were really taken from the sea. So in their international reports they collated the data about ‘unreported’ catches from different countries. ‘Everybody knew where it was coming from but the Netherlands was not explicitly named and shamed. As a researcher, you gradually learn from experience how to preserve your scientific integrity, even in the midst of a political storm. And if ministers engage in horse-trading and dish out quotas that are too big, we point out the consequences but we don’t start manning the barricades. We are not the policymakers.’


OWN AGENDA

Rijnsdorp is retiring now but will still be the project leader for the study on the effects of pulse fishing for another year. He also has a personal project. ‘There is a wealth of historical data here. The great thing is that I can now totally set my own research agenda and I no longer have to spend time on all the other stuff that goes with it.’ **📍**

threw up every time I stood up.’ He never developed sea legs, even after all these years, but he did come to enjoy sailing. ‘The fresh wind and all the gannets swooping around you.’

Although it wasn’t love at first sight, Rijnsdorp soon became fascinated by the secrets of the sea. ‘The first fisheries biologists started their voyage of discovery at the end of the 19th century and the archive contained a wealth of historical publications. We used computers – just available then – to analyse this data.’ And that is how this applied science job could give him the scientific depth he was looking for. ‘Some colleagues said: “Don’t go thinking you are here to pursue your research ambitions; you are here for the fisheries and the policymakers.” But I was given a lot of freedom and set up my own line of research on the long-

MUSICAL WUR

Jugglers surprise their audience with light effects during the WUR100FEST. On Saturday 15 September, the campus became the theatre for a big centennial festival for WUR students and staff and their friends, partners and children. There was a feast of lectures, theatre, dance, film and above all, a lot of music. Every group that performed included at least one musician with a WUR connection. This produced a fascinating mix, from the blues of Big Daddy's Breakfast Voodoo to charming covers from the for-esters' band Tante Ans en de Bosduivels, and from DJ Peet to Chinese folk music.  photo Guy Ackermans





Look at the photo series
on resource-online.nl/fotoserie

The occupation that paved the way for the Wageningen education system

The revolution of 1980

Until the late 1980s, Wageningen was a hive of student activism, and the high point was the Wageningen Spring, a week-long occupation of the administration building. It is now but a distant memory, but that protest paved the way for the education system for which WUR is renowned. Protest leader Mona Commandeur explains its success.

text Rik Nijland photos WUR Archives and Guy Ackermans



'This is where the banners were painted,' says Janny van Gijssel during our guided tour of Villa Arion. The door swings open on a basement room with a floor covered in stripes of paint. A witness to half a century of activism. From 1969 to 2012, this stately house on the Niemeijerstraat in Wageningen town centre was the headquarters of the student union WSO. Van Gijssel and her husband bought the run-down premises from WUR six years ago. The walls were still covered in layers of posters proclaiming forgotten political ideals. Arion is now a beautiful home, B&B and cookery studio.

In spite of this metamorphosis, Mona Commandeur can still picture the old setup: 'There was the accommodation office and the job centre, there was the sales point for lecture notes and stationery,' she points out. 'And in the basement was the stencil machine; there were no photocopiers in those days.'

KNITTING

In the spring of 1980, Commandeur, nowadays a freelance consultant and project manager in the agriculture sector, was a student of Animal Husbandry at the then Agricultural College, and chair of the student union WSO. She was famous for the knitting she took along to meetings - 'it helps me to listen well,' she says. But the time for listening

was over on 5 March, when Commandeur stuck her foot in the door of the college headquarters on the Salverdaplein, thereby kicking off the Wageningen Spring, an occupation that would go on for four weeks (see inset: The Wageningen Spring).

To conjure up memories of the protest, we are allowed to use Van Gijssel's living room in Arion, once the meeting room where the WSO's many protests took shape. They followed a fixed pattern in those days: a few dozen students would form a demonstration committee that would set off for the faculty or administration building and block the entrances there. What would follow were demands, negotiations, rhetoric and after some hours, or perhaps a night, the occupation would be over. And if it hadn't achieved enough? Then planning started on the next protest straightaway.



▲ Mona Commandeur in the living room of the renovated Villa Arion, once the headquarters of student union WSO.



◀ 'The knitting chairperson' was Mona Commandeur's nickname when she led the WSO, 1979-1980.



▲ The demonstrators meet with the Executive Board of the Agricultural College on day one of the occupation.

MASSIVE TURNOUT

But at the beginning of March 1980, events took a different turn. The turnout at the meeting to plan the protest against the two-phase degree structure (see inset) was not the usual few tens but 800 to 900 students. The night before, in Kafé Troost, the old guard of the union had agreed to cancel the occupation if there were less than 60 people. The massive turnout took them completely by surprise.

The vast majority of those present voted for an occupation, after which 400 students marched to the Salverdaplein and took over the central wing of the building. 'It was a complete surprise there too,' says Commandeur. 'Staff walked outside as if it was a fire drill. Personal effects and dossiers were lying open and exposed on the desks. Quick as a flash, my fellow board member Theun Vellinga stuffed everything into drawers and cupboards, and locked them.' The reason why so many students were prepared to take to the barricades, says Commandeur, was the cultural shift that had taken place in the WSO in the previous years. In 1979, she found a union with the knowledge, experience and infrastructure to organize protests, but also one with a dwindling support base. Only one in

three students belonged to the union, half the proportion at the beginning of the 1970s. 'There was no life in Arion; the spark was gone,' says the former union president.

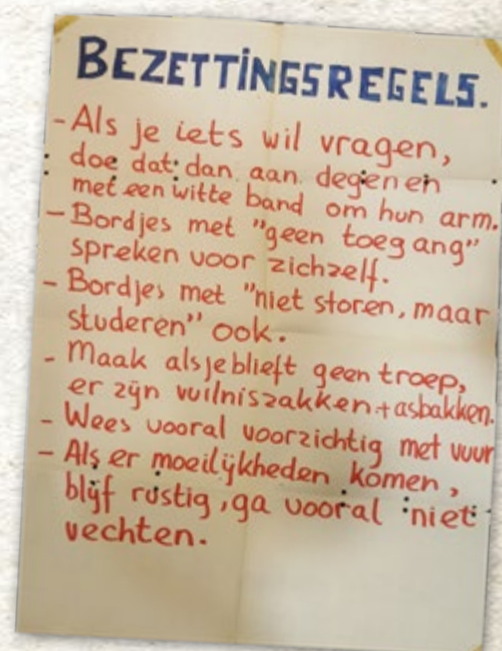
LEFTWING GOINGS-ON

The trilogy *History of the Agricultural College* paints a picture of the WSO as a sectarian, Marxist bastion where mainly older male students – diehard union members – called the tune. They maintained close links with far left political parties such as the communist CPN, the socialist PSP and the then still Maoist SP. Taking the political union approach, the WSO focused mainly on lobbying on material issues of funding and housing, solidarity with future students (against recruitment caps) and support for developing countries. Concern about the environment was starting to play a role too. Democracy was nowhere to be seen in the WSO, says Commandeur. In the highest consultative body, the Policy Council, sat representatives of the 22 subject groups: students who were active in the degree programmes. 'They were trained by the older WSO members to form a new cadre. In practice, the WSO saw these delegates less as representatives than as the union's

THE WAGENINGEN SPRING

In 5 March 1980, 400 students occupied the administrative headquarters of the Agricultural College on the Salverdaplein, to express their dissatisfaction with the cutbacks planned by the minister of Education, as well as with Wageningen education. Minister Païs wanted to introduce the two-phase structure into higher education and limit the time you could spend in higher education – at that point unlimited – to six years. Students all over the Netherlands were up in arms about this, but in Wageningen there was mass resistance. This was because the students at the Agricultural College had long been campaigning for educational innovation, and they were afraid it would now come to nothing. They wanted their education to be more relevant to professional practice and societal issues. That would require more project-based education, more interdisciplinary integration and more attention to the social sciences.

When the riot police ended the occupation after four weeks, the protesters had not actually achieved anything. Nevertheless, the Wageningen Spring – a reference to the Prague Spring of 1968 – gained a sort of cult status. That respect was due to its unusual length and its impact: the occupation was the prelude to the creation of the typical Wageningen education system, with a lot of freedom of choice and project-based education.



▲ This list of occupation rules was filed away in the WSO archive.

5
March
1980

400 students occupy
the administration building
of Wageningen Agricultural College



▲ Mona Commandeur with Peter van der Schans, who was chair of the Board at the time of the occupation.



▲ Mona Commandeur (left, with papers) attends a meeting together with other demonstrators.



▲ Sleeping occupiers in the administration building.



▲ A handwritten notice announces the end of the occupation.

advanced guard,' says Commandeur. 'That led to friction and mistrust among the subject groups, not least because the WSO took very little interest in the content of the education. In Livestock, for instance, we had a very active subject group, critical about the education but pragmatic too. The people there didn't think much of all the leftwing goings-on at the WSO.'

BLACK AND WHITE BOOK

Commandeur first moved into Arion in 1979. 'When Theun Vellinga and I were asked to be on the board – they couldn't find anyone else – we went to a squat in Amsterdam to figure out a new setup. We wanted a union that listened. Then we visited all the subject groups to hear what their concerns were. And we heard a litany of complaints about the lack of educational innovation. Then I said to the old guard: "Guys, we are going to put that lobbying on material issues on hold for the time being. Start studying again please, we don't need you for now; we need to build up a new support base." We got no thanks for that. We even dropped the traditional, annual disruption of the opening of the academic year, where the police lined up ready beforehand.'

Commandeur and Vellinga (now a researcher at Wageningen Livestock Research) succeeded in mobilizing new allies: students who were actively involved in the college and faculty boards, departmental education committees and subject groups, as well as in organizations such as Agromisa and the Boerengroep. That collaboration resulted in a 'Black and White Book' opposing the proposed two-phase system and offering criticisms and suggestions for more 'problem-centred, socially relevant education'. Commandeur: 'All the signatories to the wishes expressed in the Black and White Book got a copy, but they had to pay a guilder for it because we were very short of money. In the end 1000 were sold, many of them to members of staff. That boosted our conviction that we were on the right track.'

EDUCATION FAIR

That spring, the occupied administration building was the melting pot in which the occupiers – stressing that there were now women among their numbers – developed the ideas in the Black and White Book. They came up with 70 specific proposals for project-based education. These were presented at the end of

March during a sun-drenched education fair on the square outside the occupied building. On the front of the building hung a banner proclaiming 'The Wageningen Spring'. And that has been the protest's nickname ever since, although the reference to the Prague Spring proved provocative. Commandeur: 'That was sensitive in the Executive Board. Board member Wouter Douma was sorely offended that the college board appeared to be equated with Russian aggression against freedom fighters in Czechoslovakia.'

Of the 70 education projects presented at the fair, 50 were actually implemented, says Commandeur. 'That also means that many members of staff felt involved too, otherwise no supervision would have been possible.' According to Commandeur, there was a lot of passive support in Wageningen. 'Even students who

'WE SOLD 1000 COPIES OF OUR BOOK, WHICH CONVINCED US WE WERE ON THE RIGHT TRACK'

were against occupations as a means of protest mostly supported the call for educational innovation. What contributed to that was the worry that the two-phase structure would put an end to the element of practical experience in the education programmes. The protest stimulated Wageningen-wide discussion. By the time the building was cleared, innovation was inevitable.'

DIVISIONS

One thing the Wageningen Spring lacked was a happy ending. Peter van der Schans, then chair of the Executive Board, adhered to the motto: no police on campus. He therefore negotiated with 'his' students for weeks. The board understood the wish for educational innovation and the opposition to the budget cuts planned by minister of Education Païs (see inset The Wageningen Spring), but could not undertake to ignore decisions taken in The Hague. Despite the efforts of several mediators, it was impossible to reach a compromise. According to Commandeur, this was because students were divided amongst themselves. 'On one side there were the education people

1 April 1980

The riot police put an end to the occupation

▶ On behalf of the occupiers, Theun Vellinga hands over the Black and White Book with suggestions for educational improvements.



who wanted to give up the occupation after the success of the education fair. On the other side were the radical members who focused mainly on fighting the cabinet plans. Much to their disappointment, they could not prevail in the biggest student protest Wageningen has ever seen. Nor had they achieved any results yet, either. Due to these divisions, the decision was taken not to leave the building of their own accord.'

HEADSTART

Eventually, enough was enough. Salaries needed paying, staff were grumbling and some of the students said they were fed up with the occupation. The end came at 7:30 in the morning on Monday 1 April. The police forced their way into the building and the 200 occupiers – specially drummed up, as the night before there were only 20 students left – left without resistance. They hadn't achieved much: minister Pais pushed through his budget cuts and dismissed the occupation as an 'outdated ritual'. But even on the day the occupation ended, the far from bitter Executive Board wanted to talk about education, which led to a broader discussion on the topic. 'Wageningen got a headstart on other academic institutions,' says Commandeur. 'A later rector, Cees Oosterlee, went so far as to say: 'Wageningen had thoroughly overhauled its education, with freedom of choice, social relevance and a range of teaching methods, while elsewhere in the Netherlands that process was still in its infancy.' ®



▶ In the months following the occupation, students push for educational innovation with the motto 'The Wageningen Spring is still coming!'

WHY IS STERKSEL CLOSING?

WUR's Swine Innovation Centre Sterksel is closing in 2020 due to lack of funding. And so the Netherlands' last experimental farm for the pig sector will bite the dust, just when society most needs research on an animal-friendly farming system. Why is this? And what impact will the closure have?

text Albert Sikkema illustration Henk van Ruitenbeek



Han Swinkels



Consultant and former interim manager at Sterksel Swine Innovation Centre (VIC)

'To keep applied research going you need both public and private funding, otherwise it won't work. We can learn that from the successful launch

of the Dairy Campus in Leeuwarden, for the dairy sector. It means livestock farmers have to be willing to invest jointly in research on new farming systems, and that provinces must be willing to invest in maintaining the centre itself. WUR has done its level best to roll out this concept at Sterksel too, but apparently not enough parties wanted to join in. That's a great pity, because you need an innovation centre like that so as to put knowledge into practice.

Now it will be harder to do risky applied research. Take the study on tail-biting at Sterksel, in which we left tails in-

tact. You could do such research on the farms of innovative pig farmers too. But if they run too many risks, they cancel the research, because the experiment is not their first priority. At Sterksel it is, and it doesn't matter if something goes wrong. My concern is that if an experiment is disappointing or fails, companies will become wary of innovations.'

Mart Smolders



Division manager at livestock sector supplier MS Schippers and former manager at VIC Sterksel

'This closure is a great pity. In the 10 years I was manager at VIC Sterksel from 2003 to 2012, foreign delegations often used to say to me: "if only we had a system of experiment farms like this". We are going to regret this, because there really is a future for



'Anything that doesn't make money immediately gets cut'

applied research, I think. So what went wrong? There weren't enough parties who had faith in the centre. **WUR concentrates on students and applied research is an ugly duckling, and not WUR's core business.** The pig sector itself was still regrouping after the product boards were scrapped. The suppliers were sorting themselves out in that period. And the province of Brabant sees pig-farming as undesirable and doesn't dare release funding for an experimental farm. There wasn't enough team spirit. Whereas there are loads of challenges, and investing in them is particularly crucial at this stage.'

Ineke Eijck



Freelance specialist in pig health

'In the past I set up WUR's Waiboerhoeve experimental pig farm in Lelystad, which has already bitten the dust. The applied research we did there – on how to keep a pig shed disease-free – was transferred to the pig-breeding company Topigs. A recurring issue is that this kind of experimental farm is quite expensive and that you stop being a trailblazer soon after starting up. **I have more faith in a model in which researchers support innovative companies that see a market for a new concept.** One example is pig farmer Hans Verhoeven's company Hoeve BV, which is continually testing new systems: first on his own farm and then on other farms that produce meat according to the Hoeve approach. I see more in those kinds of market-driven innovations. I think Sterksel has had its day. But it is a pity that there isn't more funding for research which the market isn't ready for. Anything that doesn't make money immediately gets cut.'

Marion Kluivers



Researcher at Wageningen Livestock Research

'The scrapping of the product boards had a big impact on the research for the pig sector. That gap has partially been filled by projects for other parties. **Many of my projects were implemented at VIC Sterksel, including research on keeping pigs with long tails.** That had the ad-

vantage that you could set up a good experiment with meticulous supervision and data collection. An alternative is to do research on commercial pig farms. That's possible – it's what they do in Denmark – but it does mean intensive project supervision. You need to make very clear arrangements with the pig farmers prior to the study. In this respect, we can learn a lot from poultry research, because that sector hasn't had its own experimental farm since Spelderholt was closed six years ago. The closure of Sterksel will therefore lead to a new way of setting up and implementing pig research.'

Bert van den Berg



Programme Manager for Livestock at animal welfare organization Dierenbescherming

'WUR used to have a lot of experimental farms, like the pig farm in Raalte, where *Dierenbescherming* and the Dutch Federation of Agriculture and Horticulture built the animal-friendly Comfort Class shed in 2006. I helped oversee a pig shed for a couple of years at that time. But the number of experimental farms has gone down drastically in the past few years. **I worry about that. If we have a research question, what I often hear in Wageningen is: "Let's get a PhD student working on this for four years". But what you want is often to put knowledge into practice, and VIC Sterksel was the obvious place for that.** And I don't see other options yet. Instead of WUR's experimental farm for poultry, we now have the Poultry Expertise Centre in Barneveld, which does research on topics such as reducing fine particles. Great, but it's got to be cheap, which means not much research is done on animal welfare, and it's doubtful whether the government accepts the results. And if you want to do the research on commercial pig farms, you run up against other problems. We would very much like to do follow-up research on tail-biting on pig farms, but the farmers are not keen to sign up for it. If a couple of pigs bite each other badly, the meat can be rejected in the abattoir. Who will cover the cost of that? We don't yet know how to manage the risks in this kind of research.' ®

How a Bachelor's student got himself a publishing contract

'AUDACES FORTUNA IUVAT'

('FORTUNE FAVOURS
THE BOLD')



At the start of the year, Geert van Zandbrink signed an unusual document for a student in a Wageningen back garden: a contract with Prometheus publishing house. 'Then I knew for sure that I was working on a book that will soon be in the bookshops. An exciting moment.'

text Luuk Zegers photo Sven Menschel

Writing a book about the roots of Dutch words in classical languages: not quite what you expect from a first-year student of Economics and Policy at WUR. But that is what Geert van Zandbrink has done (see inset). 'It started during everyday conversations. I would hear a word and think: that's where that comes from. And so I started to trace more and more Dutch words back to their Greek or Latin origins.' He decided to keep records of his linguistic discoveries in an ever-expanding text file.

Van Zandbrink's love of the classical languages started at Bernrode *gymnasium*, (an academic high school) in Heeswijk-Dinther. 'I had the time of my life there: I was on the school council, I acted in school musicals and did things for charity. That the way to make your school your own.' He got good grades, especially in Greek and Latin, and continued with both languages to exam level. 'It just so happened that I was taught both subjects by the same teacher, who was also my mentor. I got 10 out of my 30 lessons a week from him. That creates a bond.'

RADIO SCHOOL

In spite of having felt so at home in high school, Van Zandbrink couldn't settle at all at University College Maastricht when he started there in 2017. His studies took up a lot of time, whereas he wanted to do other nice things as well, and there wasn't much of a click with his fellow students. After two months he decided to drop out and see the year as a gap year. 'I did all sorts of things: I worked in a supermarket, helped out on a farm, did exam coaching and gave extra lessons in Greek and Latin. Through a friend I also got involved in the Radio School, a broadcasting course run by the broadcaster KRO-NCRV.'

Van Zandbrink learned the art of broadcasting in a group of young enthusiasts. 'The main thing I learned there was to be cheeky. If you really want to talk to someone and you only have his emergency telephone number, you

just ring that number, even if it's not an emergency. It pays to be bold.'

MARATHON

It was at the Radio School, too, that Van Zandbrink was inspired to write a book based on his file full of linguistic information. 'When we were doing an item about the marathon in New York, I talked about where the word marathon comes from. During the First Persian War, the Greeks defeated the Persians in the Battle of Marathon. A Greek messenger ran all the way from the battlefield to Athens to report that the Persians had been defeated. That was just over 42 kilometres. As soon as he had delivered his message, he dropped dead.'

The editors were so enthusiastic that Van Zandbrink grabbed his laptop and started reading aloud from his word list. 'Afterwards my supervisor took me aside and said: "Geert, you really should do something with this. You have a good story that you can tell very nicely, and you have media experience, which interests publishers. You've just got to be bold and approach people."

STUDIES ON HOLD

The message did not fall on deaf ears. Van Zandbrink got in touch with Prometheus pub-

lishing house and with Paulien Cornelisse, author of an entertaining book about language trends, *Taal is zeg maar echt mijn ding*. Cornelisse sent him some tips about how to write a book, and Prometheus asked him to turn his pitch into sample chapters. Van Zandbrink wrote five chapters and was promptly invited for a discussion. 'That was really cool. Prometheus is in a gorgeous building on the Herengracht in Amsterdam. We had a chat about the book in a very posh room.' A successful talk, too, because the magical moment in the back garden of Van Zandbrink's student house in Wageningen followed a couple of weeks later: he signed his first publishing contract.

The rest of the book still had to be written, however, and meanwhile Van Zandbrink had just started on a Wageningen degree programme. As soon as he had enough study credits to get into the second year, he decided to put his studies on hold and devote himself entirely to his writing debut. 'I don't feel guilty about that. It's not a bad thing to drop a few courses to do something you love doing. But this academic year I am going to get study credits.'

FORUM

Van Zandbrink eventually wrote all 40 chapters of his book *Linea recta* sitting at his laptop in the Forum. He asked his former high school teacher and mentor to check it for academic accuracy. That was a very nice reunion. 'I write with a pinch of salt: it's got to be fun to read. He sees it the same way. And he thought it was great that I was still working on the classical languages two years after my exams.' **B**

'A BOOK ABOUT EVERYTHING THAT MAKES LATIN AND GREEK SUCH FUN'

The book *Linea recta naar het eind van je Latijn (en een beetje Grieks)*, by WUR student Geert van Zandbrink, will be in the bookshops from 25 September. The light-hearted language book is about the roots of Dutch words in Roman and Greek culture and mythology. 'I wanted to write a book that covers everything that makes Latin and Greek such fun,' says Van Zandbrink, who wrote the book in the Forum. 'The WUR campus has lots of references to mythology: Atlas, Forum, Orion.' Those terms didn't get into the book, but the word 'campus' did. 'That is Latin for open plain or field. The Dutch word *kamperen* (camp) is derived from it: you do that on an open field. And politicians who go on a *campagne* (campaign) go out into the field to win votes.'



BREXIT I

Devon and Cornwall, the counties in the south-west of England, are actually French, claim geologists from the University of Plymouth. The evidence lies in the chemical analysis of deep soil samples. England and France were once joined together. That separation – the first Brexit – has no political repercussions for now, though.

DEPRESSIVE

As many as one in three first-year students go around with the symptoms of depression or an anxiety or panic disorder, shows a study by Columbia University. The study took place in nine countries, including Belgium and Germany. Only a few of those students go to the doctor, and often later than is really desirable.

BIRD MIGRATION

If the weather forecast is accurate, you can predict the migration behaviour of birds, say researchers at Oxford and Cornell. Radar detects not just rain but also flocks of bird, making it possible to see the correlations between the weather and migration behaviour. With an algorithm, it turned out that 80 percent of bird migration movements were predictable using weather forecasts.

CORRUPT

Politicians with broad faces are more often labelled as corrupt than those with thin faces, shows a study by Caltech. The researchers got people to assess the faces of politicians they didn't know. Politicians who had been tried for corruption were picked out more often than chance would dictate, and the broadness of their faces turned out to be a major factor in this evaluation. That doesn't mean that all politicians that resemble Trump are corrupt, warn the scientists.

'Music can bridge the gulf'

Popronde pop festival is coming to Wageningen again this year. Bachelor's student Tijn Bonnemaïjers is involved in organizing it for the third time in a row, WUR staff member Melanie van den Bosch for the first time. They enjoy seeing how the festival brings all Wageningen together.

Popronde is a free, roaming music festival in which the 41 participating towns can choose from a selection of startup bands and rising talent. This year there were 148 acts to choose from, says Bonnemaïjers. 'Hip-hop, rock, indie, singer-songwriter: there are acts from all the musical genres.' Van den Bosch: 'If it was up to us, we would have had another 10 venues. There were a lot of acts we couldn't book because we didn't have enough venues.'

But they did succeed in organizing 29 performances at 18 venues between 4pm and 4am on Thursday 27 September. 'Cafés, restaurants: we asked everyone with a draft tap in the building to join in.' Some shops are joining in too, like the Gelderse



PHOTO: ANNE VAN DER HEIJDEN

▲ Student Tijn Bonnemaïjers and WUR staff member Melanie van den Bosch are helping organize Popronde Wageningen.

IJzerhandel and the HEMA.

Bonnemaïjers and Van den Bosch are actively involved in Popcultuur Wageningen, the foundation which organizes Popronde and other events. 'The aim of Popcultuur is to offer up-and-coming bands a podium. Popronde does precisely that, so it is a good fit with Popcultuur Wageningen,' explains Van den Bosch. 'That means that the bands that come and play could be the big names of the future.'

What they like about Popronde is the way the whole town comes out for it. 'It is lovely that everyone can get together: music is the link. International students and people who've lived in Wageningen for 100 years – everyone comes.' Bonnemaïjers: 'This is a way of bridging the gulf you hear so much about, between people from WUR and born-and-bred Wageningers. Personally, I don't really believe in that gap: the similarities are always bigger than the differences.' 📍 AvdH

Students buy pool table

A pool table was installed in The Spot in Orion last week. It was bought by two students who got hooked on pool during an exchange in the UK.

Monica van Leeuwen and Caroline Majoor met at Reading University. And when in England, you play pool. There is no escaping it, says Van Leeuwen. 'There are tables all over the place and people play in every break.'

The two Dutch students took up pool and got hooked. Majoor: 'The idea came up in the pub: hey, why don't we do

this in Wageningen?'

Back on campus, they first found out whether they would be allowed to place a pool table in one of the buildings. They had the Forum in mind, but it was The Spot they were directed to. Then they had to find a table. A quick Google led them to a billiards shop in Deventer.

The table they chose is second-hand, but looks as good as new. They'd rather not say what they paid for it. They hope to earn it back from their takings: a round of pool costs one euro. 📍 RK



PHOTO: ROELOF KLEIS

▲ Monica van Leeuwen (left) and Caroline Majoor start using the pool table in The Spot.



New schedule divides opinion

The extended daytime schedule, intended to help cope with the growth of WUR, has been in place since the start of this academic year. A survey among students shows that not everyone is happy with the longer teaching days.

'I have a terrible schedule: I start at 8.20 and finish at 17.20 every day. And in between I have nothing for four or six hours,' says a student in one of Resource's Soundbites videos. But another is actually quite happy with all the free time between classes. 'I like it if there's time to do homework or prepare for lectures in between, because I work better at the uni than at home.'

Head of scheduling Fred Jonker knows there is discussion among students about the length

of breaks in the new schedule. 'Before we started making the new schedule students indicated that they need those long lunch-breaks, so we took that into account. But what suits one person might not be suit another because of the long gaps between classes. That is an interesting tension and it should be discussed.'

Jonker has had relatively few criticisms of the new schedule from lecturers, he says. 'We get some comments here and there, but those are start-up problems. You always get those in the first period. Maybe slightly more than usual this time, but then it is also a completely new schedule.'

To get an overview of students' potential scheduling problems, the student council party VeSte



View students' reactions to the new schedule at resource-online.nl/video

has set up a contact point: vestewageningen.nl/edscontactpoint.

So far 11 complaints and ideas have been submitted. VeSte representative Roos Versteegen doesn't want to go into the nature of the submissions at this point. 'At the end of the period we will evaluate

all the comments and discuss the results with the Executive Board.'

Students and lecturers can address urgent complaints to Jonker directly. 'Then we might be able to do something about it immediately', he says. **LZ**

MEANWHILE IN... GREECE

'Supposedly, we have risen from the dead'

After years of austerity measures following the economic crisis, the Greek prime minister Alexis Tsipras recently announced relief measures. These are supposed to cut taxes, raise wages and increase welfare spending. But Eva Katsimpri won't believe it until she sees it.

'The announcements of prime minister Tsipras were widely covered in the news. People are saying things like: "We only ate beans last week, but today we went to the supermarket and even bought meat!" It's just a joke, of course. In reality, nothing has really changed in Greece.'

In 2008, we had the economic crisis. Austerity measures from the Eurozone were tough. Last week, the prime minister announced that the austerity measures were over. We will be able to make a comeback on the market, have a presence in the financial world and get more loans. The cutting of pensions and the healthcare system will stop. People will have a better quality of life, he promised.

But the thing is, just because someone in authority says something, it does not mean that things will change.



PHOTO: ALEXANDROS MICHALIDIS / SHUTTERSTOCK.COM

As I'm in the Netherlands, it is funny to see in the news that we have risen "from the dead". But when I talk to my friends and family, they tell me that they haven't seen any change. Life continues to be the same as it was. If the healthcare system wasn't good yesterday, it's not good today either.

I do follow the news in Greece, but mostly the light things, like who got married. Sometimes it's a bit sad to read everything about your country, including all the things that have not been going well.' **EvK**



Eva Katsimpri, an MSc student of Tourism and Environment from Greece, talks about current events in her home country.

YOU ON CAMPUS

After a long, hot summer, it's not always easy to get up to speed in your studies again. Food Technology student Joost Geerlings (23) found it especially hard this year after having a year off to work on the board of student rowing club Argo. 'Getting started is hard, but it's nice to be back at uni.'

Joost was a competition rower with Argo for two years before he decided to serve on the board. 'Competition rowing was not a great success, although it was really fun,' says Joost. 'You've got to do your best as a whole group. You go through ups and downs together. It requires a lot of perseverance, but it does make for a very close group.'

When Joost started on the board, he dropped rowing. 'You are just too busy on the board. I had a fantastic time. And it was nice to devote

my efforts to something other than university.' Joost feels there has been 'a bit of a hole in terms of hobbies' since he left the board. 'At the start of my degree programme, it was

'I am a beekeeper: I've kept my own bees since I was 15'

rowing, and during my year on the board I didn't have much spare time. Now that I'm studying again, I want to look for something new. Maybe take up a musical instrument. Or join in the pub quiz more often.'

But that doesn't mean Joost now spends all his spare time chilling on the sofa. This afternoon he's playing squash, for example. 'And I'm a beekeeper. I've had my own bees at

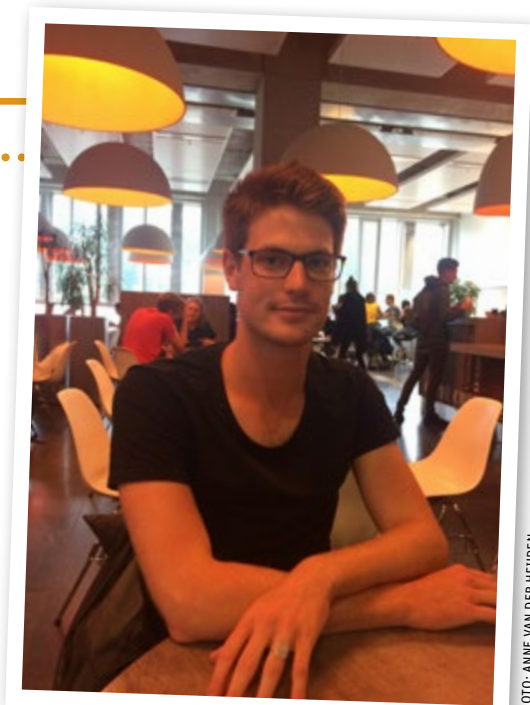


PHOTO: ANNE VAN DER HEIJDEN

home since I was 15. If you do it properly, you only have busy weeks in the spring and autumn, and apart from that they are not very time-consuming. Last year I extracted 10 kilos of honey. I am selling that to be able to buy new stuff for the bees.'

Before Joost came here to study, he was in Wageningen occasionally in connection with his bees. 'The "Bee House" is here and I came there now and then. I learned a lot there from experienced beekeepers.' **AvdH**

'I ranted against the smartphone for years'

Every second spent glued to the screen of a smartphone appals blogger Angelo Braam. Which is why he chose to have an old-fashioned 'flip phone'. Until that could have meant not getting a position on a board.

'I have strong principles and I'm convinced that they are valid for ever. One of those principles concerns smartphones. Every second spent glued to the screen of a smartphone without a clue what's going on around you, is something which has no added value for me. Guys, talk to each other instead of to a screen! Throughout the transition to smartphones in the past decade, I

have always deliberately hung on to my old flip phone, and sung its praises as the best option. Thanks to my primitive telephone, I live in the moment and don't waste any time endlessly scrolling on Facebook, and I'm spared a whole lot of bullshit.

DISGUSTING

Sadly, though, my anti-smartphone principles turned out not to be as strong as I thought they were. Starting from this academic year, I'll be using one of these disgusting little pieces of tech that I've been ranting against about for years. Turned out it was a requirement for a position on the board of my study association.

Without WhatsApp, the others thought it wouldn't be possible to consult each other outside the university. I didn't entirely agree with that, but my wish to take on the role of treasurer and thus improve my skills with money and figures proved stronger than my principles. Especially when a teacher told me that experience as a treasurer is very handy for getting nice jobs with NGOs, something I've been dreaming of for a long time.

To anyone else, it might sound like a small step, but no sooner had I accepted the job than I had second thoughts. Hadn't I abandoned my principles too quickly? But in the end I gave in to the

BLOG



Angelo Braam is a second-year student of International Development Studies

temptation of future career prospects and the fun you can have serving on a board.

IN THE BIN

So I've shed one principle. Luckily I've got quite a few principles left, though. What's more, I shall only use my smartphone for work-related issues, and I'll chuck it in the bin next year. Hopefully I won't have become addicted by then, like all the people around me.' **B**

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.

A ten-minute walk? That's weird in Texas

I ended up in Texas through a teacher who does research on stress in ecosystems due to chemicals. I had asked him about possible thesis placements outside Europe where I could do laboratory work as well. He put me in touch with this lab, where they were enthusiastic right away. And after a couple of Skype conversations, I knew I wanted to go in that direction. My supervisor here is the most driven researcher ever. He really lives for his papers.

PIECE OF THE PUZZLE

I am looking at a particular species of alga that is moving further and further inland due to the salinization of the rivers. This alga gives off toxins that kill fish, so it's problematic for fisheries. We already know that salt has an influence, but we don't know if the nutrient balance in the water plays a role as well. I am looking specifically at the influence of the proportion of nitrogen to phosphorus. They've been studying this alga for 30 years; there are very many factors involved. I hope to solve a little piece of the puzzle.

I only live ten minutes from the university, but Americans think it's weird that I walk to work. They think it's strange to walk more

than five minutes to get somewhere: everyone here goes everywhere by car. Personally, I don't feel I need a car, since there are plenty of bars and typical American eateries on campus.

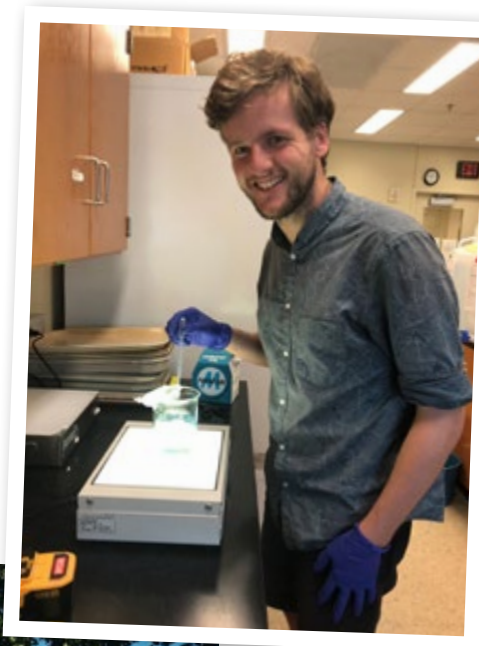
NEW ORLEANS

I went to an American football match last week. Compared with a Dutch football match, it's a lot of entertainment and just a little bit of football. I also have plans to travel. My parents are coming over and then we are going to Houston. Mid-October I'm going to do field work in Utah, near Salt Lake City, and we'll go through the Rocky Mountains, which is really cool.

I've got a month to travel around after I finish. Then I want to go to Nashville and New Orleans – the country, blues and jazz cities. I reckon that will be really cool. I'm not a great fan of those genres, but I like music a lot, including blues and jazz occasionally. But mostly I'm interested in seeing what it's like there. Some friends from Boxtel are coming over and I'll do a two-week road trip with them in a van. So I've got enough to do while I'm here.' **EC**

THE WORKS

Who? Ruud Steenbeek, MSc student of Earth and Environment.
What? Research for his Master's thesis at Baylor University
Where? Waco, Texas, USA



**More interviews
on resource-online.nl**



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Gravity

Prof. Jeroen van Dongen (UvA)
- History and Philosophy of Gravity

Prof. Erik Verlinde (UvA)
- Science of Gravity

Thursday, September 20th
Café Leburg
19:45 - Live Music by Troubagroove
20:15 - Science

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Announcements

TRAINING IN PRESENTATION SKILLS & NERVES

This practical training course is for students who get very nervous about presentations. Marloes Harkema, an experienced skills trainer, teaches you strategies for being more at ease in front of a group. We also work on non-verbal communication, presentation structure and interaction with the group. On three Monday evenings: 1, 8 and 15 October. More dates in period 2. Maximum 8 people per group. Cost: €45.

MARLOESHARKEMA.NL

Agenda

Thursday 21 September to 3 October

FILMS FOR STUDENTS

Beast: a psychological thriller about a young, inexperienced woman and her strange lover on rugged Jersey. *On Chesil Beach*: a tragic love story about a repressed young couple in England in 1962. *Disobedience*: about two strong women when their love clashes with the Jewish tradition. *The Happy Prince*: a biographical ode to the gay writer Oscar Wilde (1854-1900) after he fell from grace. *Den Skyldige*: a crime thriller about an incident room where it is boring until a call comes from a kidnapped woman. Venue: Wilhelminaweg 3A, Wageningen. €6.50/€5.

MOVIE-W.NL

Sunday 23 september, 15:00

LAST POETRY WALK AT BEELDEN OP DE BERG

This edition of the art exhibition *Beelden op de Berg* will finish in style with a poetry walk. A unique experience with poetry, art and music. Ten artists have exhibited their work all summer long. The title of the exhibition, Summer Snow, stands for eternal rejuvenation and life cycles in nature. Eleven poets took inspiration from the art works, the theme and the beautiful park. The walk starts at the information office in Belmonte Arboretum.

Thursday 27 September, 16:00

WEES SEMINAR: WHAT DOES IT TAKE TO BUILD A NEST?

Professor Sue Healy (University of St. Andrews, UK) is visiting Wageningen to give a workshop on cognition research in wild animals and a seminar on nest building in birds. Workshop: 'Cognition in the wild: Foraging hummingbirds and building nests', Orion C0430, 1.30pm, registration required (nina.bircher@wur.nl). Seminar: 'What does it take to build a nest?', Orion C3033, 4pm, open to all! Drinks and discussion afterwards in The Spot.

WEESWAGENINGEN.NL

Wednesday 10 October, 13:30-22:00

INSECTSPACE 2018 SYMPOSIUM

How can we overcome disgust and repulsion in response to insects? Researchers, food scientists, entrepreneurs and food designers will present interesting insights about why and how to use insects in our diet. InsectSpace 2018 will be a meeting point for Food Science, Entrepreneurship, Food Design and Gastronomy. Besides food for thought you will have a chance to taste insect snacks during the event, and after the symposium, you can join the dinner experience with delicious dishes with insects, curated by FoodSpace. Venue: Impulse.

WWW.WUR.EU/INSECTSPACE

Colophon

Resource is the magazine and news website for students and staff at Wageningen University & Research. Resource magazine comes out every fortnight on Thursday.

Address

Droevendaalsesteeg 4,
6708 PB Wageningen
(Atlas, building 104, bode 31).
POBox 409 6700 AK Wageningen.
Secretariat: Thea Kuijpers,
resource@wur.nl, 0317 484020
Website: www.resource-online.nl
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Editorial staff

- Anton van Elburg (acting editor-in-chief)
anton.vanelburg@wur.nl, 06 5429 8594
- Lieke de Kwant (Magazine editor)
lieke.dekwant@wur.nl, 0317 485320
- Linda van der Nat (Website editor)
linda.vandernat@wur.nl, 0317 481725
- Roelof Kleis (ecology, social sciences, economy), roelof.kleis@wur.nl, 0317 481721
- Tessa Louwerens (animals, nutrition),
tessa.louwerens@wur.nl, 0317 481709
- Albert Sikkema (plant, animal, organization)
albert.sikkema@wur.nl, 0317 481724
- Luuk Zegers (students and education)
luukfl.zegers@wur.nl, 0317-481233

Others who work on Resource

Guy Ackermans, Alexandra Branderhorst, Evelien Castrop, Cathy Chen, Susie Day, Corine Feenstra, Teun Fiers, Marijn Flipse, Stijn van Gils, Eva van der Graaf, Berber Hania, Anne van der Heijden, Hoger Onderwijs Persbureau (HOP), Lotje Hogerzeil, Anja Janssen, Femke Janssen, Echica van Kelle, Piotr Kukla, Helena Ligthert, Clare McGregor, Sven Menschel, Rik Nijland, Henk van Ruitenbeek, Julia Schäfer, Eva van Schijndel, Joris Tielens, Pascal Tieman, Clare Wilkinson

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dewit@bureauvanvliet.com
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resource@wur.nl. T 0317 484020

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Marc Lamers, Corporate Communications & Marketing Wageningen University & Research



In memoriam

Alfred Munting



The sad news has reached us that our ex-colleague Alfred Johannes Munting passed away on Saturday 8 September. For many years, Alfred was an assistant professor in the then Plant Cytology and Morphology chair group, which is now the Cell Biology group. He distinguished himself by the commitment with which he supervised the many students on Plant Sciences courses. The skill with which he organized and delivered lectures and practicals will have made a lasting impression on countless first-year students. We remember him as a dedicated member of staff with a strong interest in what went on in the library and in the smooth running of the chair group.

André van Lammeren, on behalf of the CLB chair group

In memoriam

Koos Mobach



We are deeply shocked by the sudden death of Koos Mobach, a first-year student on the BSc in Landscape Architecture and Spatial Planning. He was seriously injured in a car accident last weekend and died a few days later. Koos only started at Wageningen University a few weeks ago. He was going to study Food Technology initially, but on the first day of lectures he talked to a teacher about the fields of landscape architecture and planning, and realized he had chosen the wrong degree subject. He was very enthusiastic about his switch to BLP.

Koos was spontaneous and got on with people easily so he got to know a lot of people in a short time. It is deeply tragic that he did not get the chance to follow his dream. Our hearts go out to Koos's family and friends, and we wish them much strength in this terrible loss.

On behalf of the Landscape Architecture and Spatial Planning programme team, Charlotte Crujisen, study advisor, and Hetty van der Stoep, programme director

>>TYPICAL DUTCH

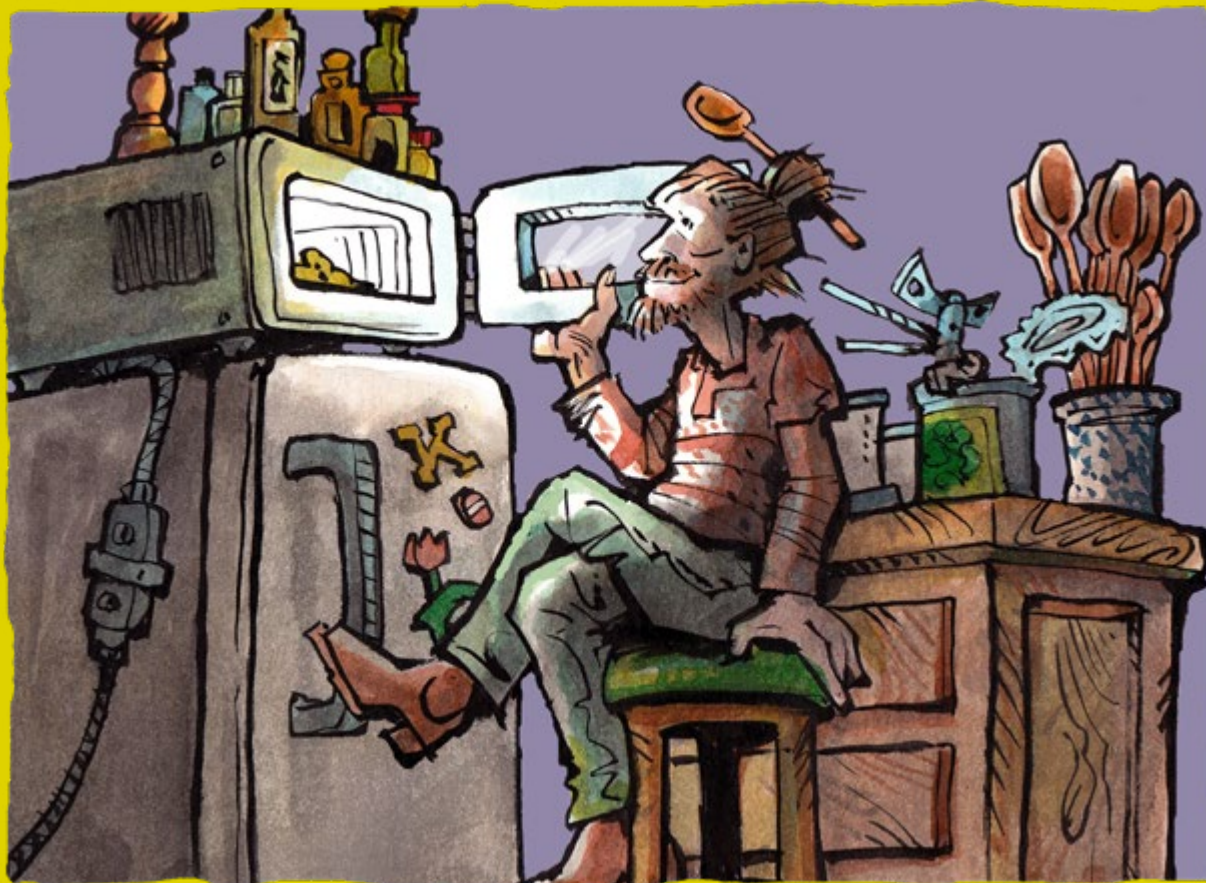



ILLUSTRATION: HENK VAN RUITENBEEK

Small kitchens

They say that culture affects the way we view space. That cannot be truer than for Dutch kitchens. I am consistently amazed by how tiny they are, even when houses are relatively big.

I have yet to see a house where there is a room – yes an entire room – dedicated to the kitchen. Often they are combined with the living room and in some cases, you can even find a washing machine there.

Then there is the way the kitchen seems to be geared towards ‘efficiency’ and spending as little time there as humanly possible. Take the pitiful microwave oven, for instance, apparently so efficient that you do not need two appliances and – God forbid – to spend more money and use more space. I find the result is often poorly microwaved or cooked food. As someone from the Mediterranean, I find this hard to deal with. How can I possibly get my pizza crust just right?

I too am from a tiny, densely populated country, but when it comes to our precious kitchens, we do not cut corners.  **Abigail Muscat, a PhD student with the Animal Production Systems group, from Malta**

A Dutch kitchen seems to be geared towards ‘efficiency’ and spending as little time there as humanly possible

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