

Resource

DECEMBER 2024 VOLUME 19

The journalism platform for all at Wageningen University & Research

Ticks get stuck in

WUR Council agrees to new chair plan

Waga Collective launch second album

Cow urine as substitute fertilizer?

Do the End of Year Quiz

More news avoiders
Not now, thanks!
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FOREWORD

Hopefully

Our work is subject to a permanent peer review. Except we don't get judged by fellow journalists; it's readers who assess us, without mincing their words. 'Quit your job, even AI writes better', 'How long will you be continuing this rubbish' and 'It's a shame that *Resource* journalists write such poorly framed and divisive articles'. Or one of my personal favourites because of the irony: 'Nice article, I can make it even better'. Sometimes we can't do anything with the criticism, but sometimes it makes us think. For example, why did we put critical questions about the clearance of the camp on Wednesday evening last week to Executive Board member Rens Buchwaldt but not to any of the activists, who according to one reader had had plenty of opportunity to leave before the police resorted to violence. Now that the initial furore has died down, we have at any rate come up with a comment on the events of that evening (see page 4).

To be honest, the past year has been rather depressing. Not only were there the wars, but also big cuts in education and the failure of the climate and biodiversity summits. Hopefully this issue of *Resource* will help you keep your spirits up even so. We have optimistic science (page 22), warmth in student societies (page 24) and a laugh at Wurmemes (page 14). Plus of course what you have all been waiting for: the annual quiz (page 18) and the nominations for the PhD thesis cover prize (page 17).

For now, on behalf of the editorial board I wish you happy holidays and a good New Year. *Resource* will be back with a new issue of the magazine on 16 January. Until then, we will be publishing news, opinion pieces and features on our website and social media.

Willem André
Editor-in-chief

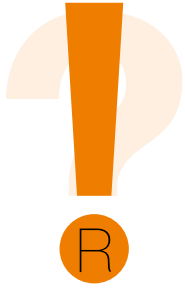




DENOUEMENT

It was always likely the camp on the bridge between Orion and Forum would have to go at some point. And there was also always the possibility it wouldn't happen peacefully. On Wednesday evening last week, the Wageningen for Palestine bridge protest came to a noisy end when the police used force to remove activists from the bridge after they had ignored several demands to leave. That brought an end to the longest pro-Palestine camp of any Dutch university. See page 4 for our comment on this major event in campus history that has caused such a stir. ME

Photo Resource



Comment

Calm after the storm

The pro-Palestine camp on the bridge between Forum and Orion has gone, 196 days after it was set up. After the Executive Board had spent ages deliberating, last week it finally found a reason in Storm Conall to clear the camp. Citing safety reasons, the Board arranged for the tents to be taken down.

That brought an end to an occupation that started on Wednesday 15 May. It was clear the protesters had lost their enthusiasm some time ago. After a burst of activity at the start, the encampment has largely been unoccupied at night since the summer. Other protest events have also seen fewer and fewer demonstrators turning up.

It is no secret that the Executive Board had been looking for a way of ending the camp protest for a while. In early July, the Board called on the activists to leave the bridge after it had confirmed WUR would definitely not be cutting links with Israeli scientific institutions. That meant the activists' most important demand was unattainable. But despite this call to stop the protest, WUR continued to tolerate the camp.

It is remarkable the Board only intervened some 100 days later. After the summer, the camp started getting grubbier and dirtier. Extra security staff were needed on campus and that was costing a lot of money. In addition, a

'Tolerating the encampment was clearly not a long-term solution'

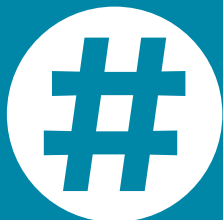
few activists were living permanently on the bridge (which is illegal). So tolerating the encampment was clearly not a long-term solution.

The use of Storm Conall as an excuse to clear the bridge smacks of opportunism. The camp had previously

survived bad weather, cold snaps and a storm. When the clearance started, the storm had passed its peak and the campus was virtually empty. If safety had been the only concern, there were other measures that could have been taken.

In the end both sides lost. The activists got a lot of attention, but not what they were demanding. And the Executive Board's hesitant approach is far from impressive. Meanwhile, the conflict about what course WUR should be taking in its contacts with Israel continues. One thing is clear: the Executive Board will not be tolerating any more occupations.

In the Comment column, the editorial board presents standpoints and analyses formulated in discussion with the editors.



DAILY UPDATES ON STUDENT LIFE AND WORKING AT WUR?

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Resource

2000

Resource leaves X

Resource has stopped using social media platform X after 15 years. The decision is mainly an ethical one. When it took this decision, *Resource* had almost 4000 followers and a total of 7653 posts on X (formerly known as Twitter). But there will be no more posts. *Resource* has decided to leave X for ethical reasons: as an independent university magazine, the editors cherish their role of providing a platform for a wide range of views within WUR, both offline and on social media. But X has moved in a direction that makes this increasingly difficult. The editors will remain active on other platforms. Follow us on BlueSky, as well as on LinkedIn, Facebook, Instagram and TikTok. And readers are welcome to post their comments and join the debate on Resource-online. ^{WA}

Thousands of students, staff and administrators turned up on Monday 25 November to take part in the demo in Malieveld in The Hague protesting against the education cuts. Over 200 people joined the demo from WUR (both staff and students). They included Executive Board President Sjoukje Heimovaara and Rector Carolien Kroeze. Charlotte Koster (Microbiology) was also there. 'Everyone came full of hope and in fighting spirit. We feel proud so many of us turned up. There is a real will to take action.' ^{WA}

WUR Council agrees to new chair plan

The WUR Council has agreed to the new chair plan. Among other things, the plan states that WUR will be reviewing the management structure of chair groups, as it will the appointment policy for professors by special appointment.

The chair plan forms the scientific foundation of Wageningen University. In addition to the research and education tasks of all 95 chair groups, it describes three areas where WUR wants to make improvements 'after broad consultation within the organization'. What exactly will be involved isn't always that clear.

One area for improvement is in the appointment policy for special professors. The aim, advantages and disadvantages, and risks need to be better defined in the policy, according to the chair plan. For example, the independence — both actual

and perceived — of these professors is a relevant issue. Another is how the skill sets and criteria for special professors compare with those for personal professors.

In addition, more of a long-term vision is needed on the portfolios of the chair groups, 'in order to identify promising topics and to phase out obsolete topics, which will improve the succession planning for chair holders and other professors,' according to the plan.

Term of office

The second area for improvement is in the organization of the chair groups. The plan sees 'possibilities for optimizing the management structure and making it more efficient.' Remarkably, the plan doesn't mention the suggestion made by the previous WUR ombudsperson to restrict the term of

office of chair holders — who are currently appointed for life. As she said, 'People aren't keen to give up that position, even if there is good reason for them to do so.' The WUR Council noticed that omission too. The Council therefore advises the Executive Board to 'take the ombudsperson's points concerning the term of office and leadership qualities of chair holders into serious consideration'. Eva Meijer, on behalf of the WUR Council: 'We also recommend having a broad composition for the committee tasked with working out the details of the plan, to include not just professors but also researchers and lecturers.' ^{ME}



No fireworks for some students

Quite a few students won't be able to set off fireworks when seeing in the New Year in Wageningen. That is apparent from the map of the firework-free zones as published by the municipality. The star-shaped flats of Dijkgraaf, Bornsesteeg and Hoevestein and the Campus Plaza complex are all in zones where fireworks will be banned.

The firework-free zones are concentrated around schools, nature areas, large private grounds (which includes the campus) and Wageningen-Hoog. Fireworks *are* permitted in other residential districts and the town centre. According to the municipality's reasoning, that includes the student complexes of Haarweg and Rijnveste. Fireworks are allowed at Droevendaal too. The municipal council decided to introduce firework-free zones in part based on a survey among local inhabitants and talks with the emergency services. Firework-free zones are the first step towards a complete ban on fireworks, which is the municipal council's aim 'in due course'. RK



Photo Marielle van Uitert

The Bennekom wolf

As the number of wolves increases in the Netherlands, so does the number of dead ones that need to be examined – in principle, Wageningen Environmental Research studies every dead wolf found on the road or in a field. Even so, a wolf autopsy still feels special. That is definitely the case for the dissection carried out on Monday last week. Firstly because of the beast itself, which died the previous Friday evening. 'This is clearly the biggest of all the dead wolves I have ever had to transport or examine,' says researcher Nina Villing. Secondly because of the location: the wolf died just a few kilometres from the campus, on the N781 road

to the A12 motorway. That is a route a lot of WUR folk commute along every day, including Villing herself.

The wolf in question is an adult male in good condition, says Villing. By the end of the week she will know which individual wolf it is – and whether forest ranger Frank Theunissen is right in thinking it's the father of the pack of what were originally 11 cubs on the south Veluwe. 'Of course we take DNA samples from the wolves we examine. The DNA analyses that let us determine the individual are performed once a quarter, so we don't get those results immediately,' she explains. ME

Waga Collective launches second album

What started as a bet between student friends grew into a group of musicians, the Waga Collective. On 2 December, the band launched their second album, *Lessen van de Maanvis*.

'We get our inspiration from Wageningen life,' say Steven Aerts, Douwe Klein Swormink and Mees Kleefmann, better known by their stage names Lil Big Steve, Lil Sworm and producer Kleefmeister M. The band's members got to know one another during their Soil, Water and Atmosphere Bachelor's degree. They set

up the Waga Collective about three years ago.

Aerts: 'Our music is typical student stuff. To start with, we wrote numbers linked to our degree, such as the Soil Drill Rap and a song about waders. These days, we draw inspiration from what we see around us, such as the Lower Rhine and the lack of a train station in Wageningen.' DV

To listen to them, go to insta @wagacollective

TICKS

get stuck in



It isn't easy to remove a tick that attaches itself to your skin, because they're soon firmly stuck in place. They do that by creating a conical layer of cement, like mortar to glue themselves on. Siddhart Deshpande (Physical Chemistry and Soft Matter) and his team think they know how the tick does it. Text Roelof Kleis

The tick first attaches itself using mechanical means, explains Deshpande, by biting hold. Then it immediately injects saliva into the skin. That saliva is what creates the cement cone. Certain proteins in the saliva accumulate, stick together to form balls and then harden into a cement-like fixed shape.

Deshpande is not a biologist who specializes in ticks. 'So it might seem strange that our lab is investigating how ticks attach themselves,' he says. 'But I study protein phase separations: when protein molecules stick together to form a separate phase. That's precisely what is happening here. In physical chemistry terms, we're seeing a phase separation of the proteins in an aqueous environment. So this project is actually a really good fit with my research.'

Coffee stains

Glycine-rich proteins — ones that contain a lot of the amino acid glycine — play a key role in this cement formation. Deshpande and his team took one of the tick proteins as a model for studying the cement formation. But phase separations don't just happen: they need triggers to set them off. The concentration of the protein is one well-known trigger. To get that concentration, the researchers used

a smart trick: the coffee ring effect. Coffee stains are always darkest at the edge, as that is where the coffee accumulates. The researchers used that fact:

If phase separation plays a decisive role in the attachment of ticks, that could open up applications such as an anti-tick vaccine

they put a drop of the protein solution on a glass plate, and the result was amazing. In addition to phase separation occurring around the edge, the resulting clusters of proteins also hardened after a while. It is not yet clear how the hardening comes about. 'We still need to clarify that.'

Anti-tick vaccine

It is not entirely clear whether the phase separation takes place in nature. 'Various things happen when a tick bites someone,' says Deshpande. 'One is that the con-

centration of the substances in the saliva increases due to the loss of moisture. But changes in the acidity, temperature or salinity are also important physiological triggers. And it's a biological system, so all kinds of molecules can play a role, including substances belonging to the host.'

If phase separation does play a decisive role in the attachment of ticks, that could open up some interesting applications. 'You could use it to make an anti-tick vaccine,' suggests Deshpande. 'Molecules from the cement cone could be used to make antibodies. If you get bitten by a tick, that will then trigger a protective immune response.'

An understanding of the basic principles of the cement formation will also make it possible to disrupt or even prevent the process. Deshpande: 'There are chemical substances that prevent phase separation. You could apply them to your skin as a way of preventing ticks from being able to attach themselves.'

[Live & Learn]

A failed experiment, a rejected article: in academia such things tend to be labelled failures. As for talking about it? Not done! But in this feature, WUR co-workers do just that. Because failure can be useful. This time we hear from Sam Hoogaars, a PhD researcher in Systems and Synthetic Biology.

Text Nicole van 't Wout Hofland • Illustration Stijn Schreven

'I started on my PhD research just under a year ago. In the first few months I delved into the literature to find my own approach to the project. I decided to set up a system in which two bacteria support each other: one of them captures oxygen, which is toxic for the other one. Four months later, my project proposal was ready and I was invited to present it to my 10 colleagues. 'No problem,' I thought.

'The feeling "this isn't going well" changed into "I've failed"'

I started with an introduction about sustainability and the circular economy. Everyone looked interested. When I switched to my research question about bacteria, I saw people's eyebrows slowly furrowing. I began to doubt myself: wasn't I making myself clear? But I just carried on. The brows dropped into deep frowns. It seemed I had skipped stages in my thinking process and was talking about

things I hadn't introduced. I felt terrible. These were people I looked up to and I wanted to enthuse them about my subject. One person began to fiddle with his phone. The feeling 'this isn't going well' turned into 'I've failed, please let this be over.' I rushed through the rest of my story, therefore skipping important parts of it and only making matters worse.

My supervisor had offered beforehand to go through the slides together, but I hadn't thought that was necessary. After this fiasco, I did do so with a teacher from the group. She gave me some useful tips and advised me to use the main message as the heading in the slides. Last month I got a second chance to present my proposal, this time for a bigger group. Thanks to the tips, it went a lot better. There were still a few frowns, but I tried not to let myself be distracted by them. Not everyone will understand everything. Since this experience I try to keep as many people as possible with me in the time I've got.'



Measuring antibiotics in meat rapidly

Researchers at Wageningen Food Safety Research (WFSR) have developed a new method for detecting the presence and type of antibiotic in the kidneys of slaughtered cattle.

'We use blades,' explains researcher Josha Jager (WFSR). These are metal strips about five centimetres long with a coating on the surface. 'We insert the blade in the kidney of a slaughtered cow and then immediately put the blade in a mass spectrometer. That instrument can tell us within one minute whether the kidney tissue contains antibiotics and if so, what kind.' That could be useful for the Netherlands Food Safety Authority, which checks whether meat complies with EU rules. However, Jager says further research is needed before the method can be used in these checks in practice. 'Mainly to be able to determine how much of each substance is in the tissue. You need that information in practical applications to be able to enforce the rules.'

Accurate

The mass spectrometer Jager is talking about uses electricity to sort molecules based on their mass and charge. This produces a graph with peaks. The researchers then compare the peaks with reference values for known compounds, which lets them determine what compounds are present in the sample.

'It takes five minutes from sampling the animal tissue to getting the result'

'This technique lets us distinguish the substances in the kidney better. It is not as specific as the current measurement methods using

chromatography linked to mass spectrometry, but it's much more specific than inserting milk or meat directly in the mass spectrometer. That just gives you one peak with everything combined. This blade method is incredibly fast too: it takes five minutes from sampling the animal tissue to getting the result.' DV

Cow urine as a substitute artificial fertilizer?

Can cow urine be a substitute for artificial fertilizer, and what does that mean for circular agriculture and the profitability of dairy farms? Wageningen Livestock Research will be studying this in the PPP project *Reinventing Circular Dairy Farming*. Text Marieke Enter

The four-year project will be carried out on various dairy farms equipped with a LelySphere (from the Lely company) or a CowToilet (from the Hanskamp company). 'These are modern, low-emission barn systems that produce new manure products such as urine,' explains project manager Harm Smit. The dairy farmers don't necessarily have to be fans of scientific research to want to take part in this project. That is because there is another important incentive for participants: a four-year exemption from the Fertilizers Act, whereby the cow urine that is collected separately is designated a substitute artificial fertilizer, and can therefore be used over and above the limit for livestock manure. Now that the end of the derogation is in sight (see inset), that could save them tens of thousands of euros a year.

Barn versus field

The results should show whether urine can be given the status of artificial fertilizer and whether it should be designated RENURE (recovered nitrogen from manure) under the Nitrate Directive. The Ministry of Agriculture is prepared to offer up to 100 exemptions to enable this study, to be divided equally between clients of Lely and Hanskamp. This is on condition that the farms cooperate fully with the research. WUR scientists ('from both the animal side and the plant side,' says Smit) will monitor the participating farms in various field and greenhouse trials.

'Initially, we will mainly be looking at the quality of the manure products generated by the various farms: what do they



Project manager Harm Smit at a dairy farm with a CowToilet (the contraption in the centre of the barn) • Photo Resource

contain in terms of nitrogen, phosphate and potassium, and how much organic matter do they have? And how does that compare to the RENURE criteria?' says Smit. Later on, the scope of the project will widen. 'We want to find out how the new manure products can be put to best use. In other words, how can they be

spread on the land at the right moment, in the right quantity and using the right application method?'

The deadline for dairy farmers to register for the first enrolment period was last week. Seventy-two farms applied in total (30 via Hanskamp, 42 via Lely). The Netherlands Enterprise Agency (RVO) expects to reach a decision on the participants in mid-February, just before the start of the new manure season.

Derogation

Given that Dutch water quality is still substandard, Brussels is set to stop making an exception for Dutch farmers in the amount of livestock manure they are allowed to spread on their land. This exception (or 'derogation') is being phased out and will end altogether in 2026. Farmers will then only be able to spread up to 170 kilograms of nitrogen per hectare in animal manure, compared with 230 to 250 kilos in the past. This means farmers will have to use artificial fertilizer to improve the mineral content of the soil and will need to have far more manure collected than at present. The costs could be up to tens of thousands of euros per farm.

PhD theses **in a nutshell**

Fermented raw milk

Mabisi is a traditional Zambian milk product that results from the spontaneous fermentation of raw milk. Thelma Sikombe studied the taste and production of this local product with a view to larger-scale production than at the household level. There is potential, is her conclusion. She isolated the main flavour substances and microbes involved in the fermentation. A big advantage of mabisi is that it keeps for two weeks without refrigeration. That can help with food security in Zambia. ^{RK}

Traditional mabisi production. **Thelma W. Sikombe** ◀ Supervisors **Eddy Smit and Sijmen Schoustra**

Dry diversity

There is a surprising amount of biodiversity in deserts. And it is surprisingly badly documented. Zakaria Hatim, from Egypt, has developed a new system of classification for vegetation groups and plant communities, for the deserts of North Africa and the Arabian Peninsula. Climate change is a threat to desert plants like many others, especially those in low-lying and salt deserts. Mountainous deserts, on the other hand, seem to be a relatively safe refuge for threatened vegetation. ^{RK}

Deserts unveiled. **Mohamed Zakaria Hatim** ◀ Supervisor **Joop Schaminée**

Flowering time

How plants react to light and temperature is partly determined by genes. But so-called epigenetic factors, which determine whether a gene gets switched on, are involved as well. One of the things Suze Blom studied was the role of non-coding RNA. These are transcripts of DNA that do not code for proteins. She identified seven long fragments of that RNA, which play a role in regulating flowering when the ambient temperature changes. This is just the tip of the iceberg. ^{RK}

Non-coding and epigenetic regulators of ambient temperature sensitive flowering. **Suze Blom** ◀ Supervisors **Richard Immink and Gerco Angenent**

THE PROPOSITION

PhD candidates explain the most thought-provoking proposition in their thesis. This time it's Wouter Mol, who received his PhD on 27 September. His study was about the variation in sunlight under broken clouds.



'Striving for perfection is essential to the creative process'

'During my PhD, I attended a stress session organized by our graduate school, where the group concluded that striving for perfection is harmful and causes stress. The advice was clear: don't be a perfectionist. I disagreed with this view at the time, but I couldn't tell why.

I think the process of striving for perfection is essential in science. It pushes you to be creative and leads to more meaningful work. Taking the time to make small improvements – whether it is tweaking a paragraph or refining a figure – not only makes your work clearer, but it can also inspire others. Sometimes a small improvement in quality can have a big impact. However, I also believe that you cannot be a perfectionist all the time. My perfectionism shines in the aspects of my work that I enjoy the most. For example, I take

great care to ensure that my datasets are well-organized and clearly described for others to use, and I enjoy spending time on making clear, illustrative visuals. But when it comes to writing paragraphs, I often struggle and tend to stop short, and I am fine with that.

Striving for perfection is essential to the creative process, but focusing on perfection alone will exhaust you and limit progress. It's important to find a balance - to know when to push for the best and when to step back and take a break.' ^{NF}

Shit happens

A few weeks ago, we were startled by a fire alarm in Leeuwenborch. We were to leave the building immediately, and not to take anything with us. Soon, several hundred people stood around the car park, shivering in the rain and wondering why this had to happen yet again. But we could soon tell from the smell that it wasn't a false alarm. An electric bike in the basement bike shed had caught fire while recharging. You could see from the smoke that a battery can apparently burn quite vigorously. It was a challenge for

'WUR is not liable, was the short answer'

the rest of the day, so staff had to resort to other buildings on campus — insofar as they could do anything without the laptops they had left behind.

There had been a fire in Forum only a few days earlier; it started in meter cupboards in a lift shaft. That too forced hundreds of people to have to leave the building due to the smoke that spread across several floors. The fire brigade needed so much water to put out that fire that afterwards the basement had

to be pumped dry. Forum had to close for several days because of the damage from the smoke and water.

It is striking to see two such incidents in close succession. Accidents can happen any time but the consequences for the university are pretty huge. The Leeuwenborch basement bike storage is still out of service and is likely to stay that way for now. It stinks and the damage needs to be repaired. There was no access to parts of Forum, including the library, for some weeks.

Hopefully this was all a coincidence — shit happens. The Leeuwenborch staff were able to retrieve their ash-covered bikes from the basement under supervision. However, they had to sign a statement first saying they had agreed to take a bike that had not been cleaned. I asked what would happen if my bike was not only dirty but also burned. The short answer was that WUR was not liable. But I was not to worry, because only the two bikes next to the one that caught fire had been damaged. Hmmm, I thought as I walked down to the basement. What's the chance of my bike being one of those two? Guess where it was parked. Shit happens.

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Sjoukje Osinga

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Sjoukje Osinga (57) is an assistant professor of Information Technology. She sings alto in the Wageningen chamber choir Musica Vocale, has three sons who are students and enjoys birdwatching with her husband in the Binnenveldse Hooilanden.

NEWS? NO THANKS

More and more people avoid the news. Which is less worrying than it sounds, says researcher Kiki de Bruin. If only because it's hard to avoid the news completely.

Illustration Valerie Geelen

The wars, the refugees, the climate disasters... it's enough to make you despair. Whoever follows the news can be sure of a daily serving of misery. Until you decide not to look at it anymore, or to look less. They are called news avoiders: people who opt out of the daily news. Researcher and teacher Kiki de Bruin is studying the phenomenon and hopes to get her PhD on the subject next spring. News avoidance is on the rise, shows the annual Digital News Report from the Reuters Institute for the Study of Journalism in Oxford. Worldwide, 39 per cent of people say they avoid the news at times or regularly. Seven years ago, that figure was 29 per cent. 'In the research I did in 2022 in this country, as many as 60 per cent of those asked said they avoided the news at times or regularly,' says De Bruin. 'That was just after the war in Ukraine broke out.'

Civic duty

But what do these figures tell us? Do people avoid news for the same reasons? And are they then completely news-free? The latter is certainly not the case, shows De Bruin's research. In fact, it's practically impossible not to follow any news at all. 'When people say they

avoid the news, it often means they are selective about what news they follow. They avoid certain topics and media, or they take a break from the news. In my latest study, which has yet to be published, I asked news avoiders about the information they come across – and therefore absorb – over two months. This enabled me to track the news consumption of 288 people. And then you see that people do get a lot of information anyway. So they avoid the news selectively.'

News avoidance is a relatively new phenomenon. De Bruin studied it in the Dutch setting. The term doesn't really cover the reality of it, she thinks. 'News avoidance has negative connotations because we see following the news as a kind of civic duty. As if you are shutting yourself off and don't care about the world. There are people like that, but

'THE DAILY NEWS
OVERLOAD IS
MASSIVE'



Text Roelof Kleis

not many. I think news dosing is a better description of what I see in my research. It's more a case of consuming news more intentionally than of avoiding news. Steering clear of news can be a healthy choice.'

Excluded

The negative nature of news, the daily misery update, is the main motive for avoiding news for a lot of people. 'You see the same pattern in every crisis. When it starts, people consume a lot of news because they want to know what's going on. But the longer it goes on, the more people stop keeping up with it because they feel powerless. News fatigue sets in. The subject still interests them but they don't want a daily update on the number of deaths in a conflict.'

This has something to do with the times we are living in. The 24/7 daily overload of news is massive. That is the main reason for opting out. There is too much choice. People don't know what they should see or believe. It is logical that

people start filtering.' So news avoidance doesn't necessarily lead to news poverty, De Bruin's research shows. 'In that sense it is not a cause for concern in general terms. But it does become one if particular demographic groups follow the news much less because it doesn't represent their worldview. I notice that certain groups don't relate to the news that

'THE LONGER IT GOES ON, THE MORE PEOPLE DROP OUT BECAUSE THEY FEEL POWERLESS'

'PEOPLE DON'T KNOW WHAT THEY SHOULD SEE OR BELIEVE ANYMORE'



is made. They don't see their lives reflected in it, they don't understand it, and it makes them feel excluded.' Women are overrepresented in that group of 'news outsiders'. De Bruin has not studied the reasons for that herself. 'Research has been done on that in other countries. There can be different reasons for it. News is often brutal and that appeals to women less. News is often made by men, with male sources, and thus from a male perspective. Women spend less time on news because they are too busy, running a household alongside a job, for example. I think it's an interesting question for a follow-up study.'

Young people

Young people are another obvious group of news avoiders. De Bruin teaches journalism at HU University of Applied Sciences Utrecht, and sees this all around her. 'When I talk to students about it, they all relate to it, saying they take a break from the news now and then. They especially avoid the traditional media. Young people don't watch TV anymore, they don't listen to the radio, and they don't read newspapers. They get their news from the digital environment. So are they really news avoiders? There are far more nuances than the word suggests. There is a difference, though, between higher education students and those on vocational training courses. News doesn't reach the latter group, and that does give cause for concern.' ■

Exclusive: anonymous chat with the student behind

The wurmemes

The Instagram page wurmemes has racked up over 4000 followers in no time with memes — for older readers: internet jokes — about student societies, Wageningen campus and student life in general. Some reels have been viewed millions of times. The creator of the page wants to remain anonymous but was willing to answer a few questions from *Resource*, under strict conditions. Text Coretta Jongeling • Photo wurmemes

How did wurmemes come about?

'I often think of jokes about things that happen around me, during lectures or when I'm with friends. I had already thought of starting a meme page to have a channel for those jokes. When a friend of mine said that I'm actually not that funny at all, I took offence. What do you mean I'm not funny? Then I had to create that Instagram just to prove them wrong. I had just finished my exams then, and the first meme I made was about how I *had* forgotten my laptop during a BYOD (Bring Your Own Device, ed.) exam.'

So there you are with your one meme. How did it go from there?

'After that first one, I immediately came up with about five other memes so that people could see what the page is about. I started following some people I knew through friends. Actually, I had no idea what I was doing. I had absolutely no experience with social media management, and I didn't know how to edit

pictures. But everything can be googled. And then suddenly it started growing really fast, people liked it and then it escalated quite quickly.'

How much time do you spend on wurmemes?

'Too much! There are days or weeks where I don't do anything but if I want to try new things, I easily spend a few hours on it. The ideas pop into my head fairly randomly when I'm on campus or someone tells me something. I keep track of all the ideas in a note app and work them out later. And the more followers I have, the more input I get. Like with that fire in Forum: as soon as that happened, someone sent me a picture. Then I can't resist doing something with it right away. That's also how I found out that many people now see wurmemes as a kind of Wageningen news provider.'

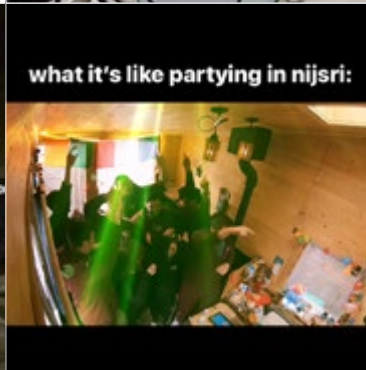
Why is it so important to remain anonymous?

'I think if people were to know who I am, it would take the fun out of it. I'm just an average student who experiences all sorts of things at uni and it's better if as few people as possible know who I am. Of course, it does leak out sometimes. Sometimes my friends say "you must be behind this", but I haven't revealed it



Stop Using Anti-wurlifeLanguage

Instead of:	Say:
broke	budget cuts
cash cows	international students
vegan	plan(e)t based products
free corporate labour	wur student challenges
wolf arsonist	electric bike caught on fire





to them. Through my memes, though, it has already become clear that I am an international Bachelor's student.'

What makes a meme a good meme?

'A good meme is a little bit offensive, a kind of audacious joke that nobody dares to make. Everyone thinks it but no one says it; that category. And it has to be relatable for a lot of people. Also the template, so the image or video you use, has to be recent.'

Are there things you would never joke about?

'No sexism or racism, that's not funny. I get a lot of DMs about the encampment on the bridge, but I don't start on that either. The subject is too controversial and I don't think it's my role to make jokes about that.'

Do you get a lot of reactions?

'Yes! Especially online. Sometimes I think people are a bit reluctant to message me because they are afraid I will turn it into a meme. Which I don't, by the way. If I use messages, it's only anonymous. When I walk around campus, I hear a lot of people talking about wurmemes. That's pretty bizarre, as then I have to act like I don't know what's going on. My poker face

is bad, so I tend to stay quiet when people talk about wurmemes. Fortunately, I never get really negative reactions. Of course, some people disagree with what I say but I never get personal hate.'

Do your parents actually know you do this?

'Yes. They look at it too. In the beginning, my mother was mostly worried about the negative consequences. She was like: won't you get into trouble with the university? She really thought my professors would hate me. Now my parents put on their glasses and look at the meme and ask me what it means. Then I have to explain the joke and it's no longer funny.'

You are here for your Bachelor's. What happens when you graduate?

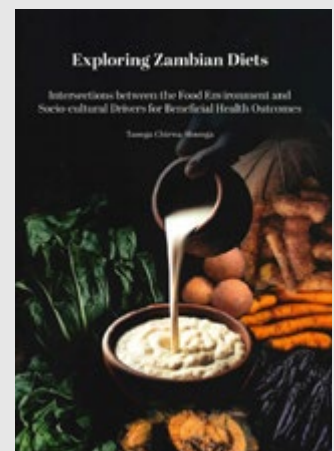
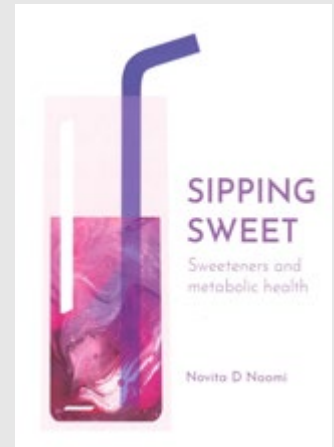
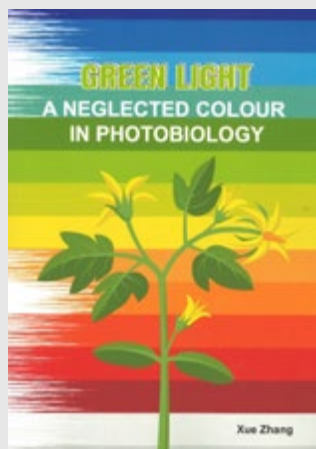
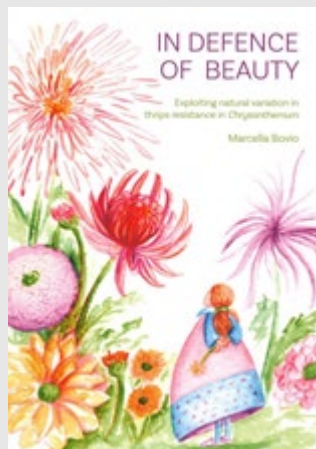
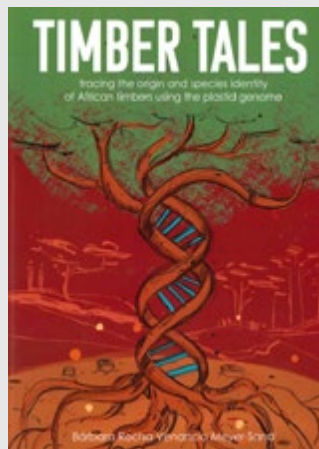
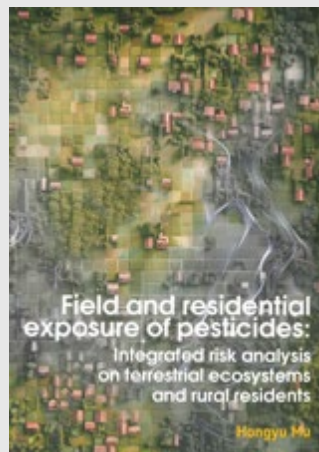
'I don't know that myself yet actually. I'd like someone else to take over the page when I leave Wageningen, but who? I personally don't think I would have chosen myself if I applied to be the admin of wurmemes, as I'm not an extrovert at all. How do you know if someone is good at this? So maybe the page will just stop then. Or it will go on pause for a while, and I'll start again when I decide to do a Master's in Wageningen as well.' ■

'I wouldn't have chosen myself if I applied to be the admin'

'Won't you get into trouble with the university?'

COVER PRIZE 2024

The ten covers on this page have been nominated for the 2024 *Resource* Cover Prize. Which PhD thesis of the past year had the most attractive, most unusual and most appropriate cover? Over the next few weeks, our readers (that's you) can help our jury choose. Go to resource-online.nl to vote online: polls close 2 January at 12 midday Dutch time. Text Roelof Kleis



2024



Want to check whether you got them right? See page 35



From spoofbuster to *balkenbrij*

2024 was the year of the bridge protest, plans for swingeing cuts to education and research, and a new rector. But a lot more than that went on. Test yourself in the traditional end-of-year quiz.

1

Mars gardener Wieger Wamelink was in *Resource* a lot once again. But not with...

- A The initiative to set up a Mars base (BASE) on campus
- B The question: What's the deal with nitrogen?
- C ExoGARDENS, a graphic novel about gardening on Mars
- D *Wieger the musical*: a theatrical production about his life as an exobiologist

2

The newest building for the Microbiome Studies is called Bioma. Why?

- A Because no one came up with a better name
- B Because it slips off the tongue
- C Because the jury was having an off day
- D Because it's just as meaningless as Omnia, Aurora, Gaia, Phenomea, Vitae, et cetera

3

These WUR-related books were published this year. Who was the author?



- | | |
|--|--|
| <ul style="list-style-type: none"> A <i>Het stikstofweb</i> (The nitrogen web) B <i>De vitaminepioniers</i> (The vitamin pioneers) C <i>Tussen de vier zeeën</i> (Between the four seas) D <i>Gesloten vanwege stikstof</i> (Closed due to nitrogen) | <ul style="list-style-type: none"> 1 Rob van den Berg 2 Jan Douwe van der Ploeg 3 Wieger Wamelink 4 Frans Glissenaar |
|--|--|

4

The *Resource* video about the annual Worm Charming event went viral on TikTok. How many views?

- A More than 30,000,000
- B More than 3,000,000
- C More than 300,000
- D More than 30,000

5

Sound artist Remco de Kluizenaar composed a piece of music about soil biology and called it...

- A Ode to the Nematode
- B The Wonder of Worms
- C Honour the Earth
- D Sounds of the Soil

6

Student Bram van den Bergh discovered a new species during the Bioblitz. Of what?

- | | |
|---|--|
| <ul style="list-style-type: none"> A A pubic louse B An aphid | <ul style="list-style-type: none"> C A head louse D A body louse |
|---|--|

7

What was not the headline of 'Seriously?'

- A New Year swim postponed until July
- B Squatter in cauldron
- C Students grow nano-mushrooms
- D Uncontrolled spread in dialogues



8

Student initiative WURbleeding argued for...

- A Free menstruation products
- B More openness about scientific failures
- C Menstruation workshops
- D Free First Aid courses

9

The Wageningen Allround Frisbee team only came 34th in the World Championships on the beach in Portimão in Portugal. And yet they had...

- A trained on the beach in Zandvoort
- B trained on the Wekeromse Zand near Ede
- C done their best
- D trained several times a week

10

How many times was Omni-ja-ja watched on YouTube?

- A More than 215
- B More than 2150
- C More than 21,500
- D More than 215,000

11

Students doing internships in Bolivia caught a strange phenomenon on camera. What?

- A A white-as-snow brown agouti
- B A marine biologist with a big nose
- C A new methane-forming archaeon
- D A white rhino with bluetongue disease

**12**

'He even asked me to sit on his chair, because a Nobel Prize winner had never sat on it.' Who said this?

- A The new rector magnificus Carolien Kroeze, about her predecessor Arthur Mol
- B Emeritus professor Rik Leemans, about the rector of the University of Tashkent
- C Chemist Ben Feringa, about his WUR colleague Han Zuilhof of Organic Chemistry
- D Christiaan Eykman in the Vitamin Pioneers, about his Wageningen colleague Gerrit Grijns

13

Who said what? Link the letters with the right numbers.

- | | |
|---|---|
| <ul style="list-style-type: none"> A 'I am keen to be a beginner, someone who asks questions. And I wish our students the same' B 'Wageningen doesn't have a good answer to the question of what should happen next' C 'The culture at WUR has become less male-dominated over the past 40 years' D 'You've just got to keep on proving you're the best, and we're still managing that' | <ul style="list-style-type: none"> 1 Outgoing rector magnificus Arthur Mol 2 Emeritus professor Jan Douwe van der Ploeg 3 Poet and lecturer Joost Baars 4 Professor of Nutrition and Health Ellen Kampman |
|---|---|

14

Human and Animal Physiology researchers drew a lot of attention with a study on...

- A Farts
- B Burps
- C Poop transplants
- D Uric acid

**15**

WUR scientists are always up for a challenge. What didn't they develop this year?

- A Spoofbuster, a programme for tracking down stock market fraud
- B Nederkatoen, cotton grown in a Dutch greenhouse
- C Babette, a 4D plant monitor
- D Bob, a self-assembly NMR machine

16

How much is the slow student fine?

- A 58 euros per week
- B 250 euros per month
- C 750 euros per quarter
- D 3000 euros per year

17

Which recipe hasn't (yet) been in the Flavours of WUR feature?

- A Lángos (Hungarina street food)
- B Poori Bhaji (Indian fried bread)
- C Balkenbrij (A regional Dutch dish)
- D Kirju Koer (a cake from Estonia)

18

The study association of the new Bachelor's in Marine Sciences is called...

- A Maino
- B Moina
- C Monia
- D Minoa

19

There were several fires at WUR this year. Which one didn't happen (yet)?

- A An indoor fire in the office of the new rector Carolien Kroeze
- B A basement fire in Leeuwenborch
- C A lift fire in the Forum
- D An outdoor fire in the electrical enclosure near the NPEC

20

According to the Wageningen Student Cohort study, students are mainly fuelled by:

- A Bread, beans and beer
- B Bread, bananas, pizza, peanut butter and beer
- C Potatoes, rice and beer
- D Fries, pizza and 'poffertjes'

Bye bye bias?

It's touch and go whether WUR will achieve the goal it set itself in 2020 of having at least 30 per cent female full professors by 2025. Gender bias still haunts the organization, confirms Executive Board President Sjoukje Heimovaara.

Text Marieke Enter

With a little over a year to go until the 30 per cent landmark should be reached, *Resource* investigated the current m/f distribution in the corps of full professors.

A quick count based on the most recent overview of professors on wur.nl* and news bulletins about the latest appointments showed that WUR currently has 177 chairholding and personal professors, of whom 49 are women. That is 27.7 per cent.

At the present rate of increase in the proportion of women professors, the goal of 30 per cent will not be reached by 2025. But WUR could still make a final sprint, as there are still six vacancies on the chairholders list**.

If they were all filled by women, WUR could pop the champagne corks: the score would be at 30.05 per cent.

No more radical

The chances of that – all the vacant professorships going to women – are minimal, though. Even in the record year of 2022, ‘only’ half of all the appointed professors were women, and after that, the proportion went down again. And WUR does not intend to become more radical in recruiting women professors purely for the sake of reaching that 30 per cent next year, Heimovaara makes clear. ‘It’s always nice to tick the box next to a benchmark, and I will feel a little bit ashamed if WUR doesn’t make it. But this is not about that number. The goal for 2025 was set at that percentage because around 30 per cent is when you reach the critical mass to break through certain patterns, and to experience how nice it is to work in mixed teams. Because we’re talking now about getting more women, but I’d like to emphasize that I’m also strongly convinced of the value of men. You need both.’ Even if WUR did reach the goal of 30 per cent women professors next year, the job is far from done, says the

National Monitor

The 2024 edition of the respected National Monitor of Women Professors will be published on 9 December. The Wageningen figures in this report are a bit different to *Resource*'s due to different reference dates and indicators (e.g. fulltime posts as opposed to staff). The 177 professors mentioned in this article are made up of 89 chairholders, 25 of whom are women, and 89 personal professors, 24 of whom are women. WUR also has special and extraordinary professors (48, 11 women). Because the Monitor doesn't include these professors, *Resource* didn't include them either.

board President. ‘A little over half our students and PhDs are women now. Among assistant professors, the gender distribution is fairly even too, with 46 per cent women. But it falters when it comes to associate and full professors. That’s where there’s a leak in the pipeline and we need to fix it.’

Emotional amateurism

Ridding the organization of a prejudiced attitude is no easy task, acknowledges Heimovaara. ‘It isn’t a Wageningen thing specifically. Nor is it specifically a man thing against women. It’s deeply rooted in how our whole society looks at men and women.’ By way of illustration, she mentions a column in the Dutch daily paper the *NRC*, which analyses how events around the resignation of state secretary Achahbar were discussed on the TV talk show *Eva*. Both the state secretary and minister Heinen, who was accused of making racist statements, showed emotion. The guests at the table called Heinen’s emotion an ‘expression of sincerity’, and that of Achahbar

* Reference date 1 September 2024

** The list mentions seven vacant chairs including the Artificial Intelligence chair, to which Ioannis Athanasiadis has since been appointed.

‘emotional amateurism’. In short, ‘if a woman of colour expresses emotion, she is being hysterical; if a white man does so, he is sincere’, said the *NRC*. Heimovaara: ‘That is a striking example of how society judges men and women differently, even when they act exactly the same way.’

In order to minimize the impact of such prejudices, WUR has been working for some time with an external diversity coach on the appointment procedure for new professors. She helps the advisory committees (BACs) to leave as little room as possible for prejudice in the recruitment and selection process, as she explained in an interview with *Resource*. That means, for example, that all the job interviews are exactly the same in length, structure and context. And that the committee members discuss the suitability of the candidates according to a fixed protocol. This is because it is known that men always get more time to speak than women, so that men’s opinions are inadvertently given more weight. Heimovaara took part in a (mini) training course herself. ‘I felt a bit resistant at first: I’ve been making appointments for 20 years, so surely I shouldn’t have to start hair-splitting over fixed

protocols and Excel forms? But I’m a convert. The super-structured approach works extremely well to keep bias at bay as much as possible.’

Not another workshop

Actually, WUR should apply this principle more broadly, Heimovaara believes. Because there’s a big gender bias in the way students evaluate teachers too: women teachers consistently get poorer evaluations than men. And when research proposals are assessed, it once again makes a difference whether they were submitted by Simon or Simone – let alone by Mohammed or Zhiyong. ‘Of course I sometimes have doubts about whether WUR is doing enough,’ says Heimovaara when asked. ‘But we want diversity *and* social safety and integrity *and* less work pressure, all while also providing excellent education *and* research. If people ask with a groan to be excused from yet another workshop, you know that you are approaching the limit of what is feasible, if you want to hold the organization together. Which doesn’t in any way alter our extremely strong commitment to running an inclusive, bias-free university.’ ■

‘I would feel a bit ashamed if WUR didn’t make it’



Henriët Wapenaar of Wageningen’s W&R Couture (which makes the gowns for WUR professors) works on the gown for Lydia Afman, professor of Nutrition Metabolism and Genomics • Photo Guy Ackermans

TOWARDS A NEW, HOPEFUL SCIENCE

The future of the Earth is not hopeless. But something's got to change. The sciences need to work on a realistic, positive vision of the future, declares Professor Marten Scheffer. Text Roelof Kleis • Illustration Shutterstock

Marten Scheffer, a Distinguished Professor at WUR, writes this in *Earth Stewardship*, a new journal published by the respected Ecological Society of America. This is the first edition of the journal, of which he is an editor. In the essay, Scheffer and a group of 'fellow revolutionaries' outline the ideas they have formed over the years. If we want to make the world a better place, it's time for action. Scientists will have to abandon their remote, observer role.

You all argue for hopeful visions of the future. Is there still hope?

'I think so. A lot of people are depressed about the future. Others say: Oh well, with technical solutions it will all work out. But neither pessimism nor optimism are helpful. Pessimism is paralyzing and optimism leads to doing nothing. Between the two lies hope: it can still work out, if we roll up our sleeves. We've got to be realistic about what is possible and how we can contribute to it.'

In the essay, you argue for a shake-up of scientific practice. One of the proposals is to reduce the dominant role of maths. What do you mean by that?

'Tools like maths and evidence based on the replication of experiments are highly prized in the sciences. They

are seen as smart, sound science. You make a good impression with them and throw your weight around. But when it comes to complex issues like the climate, the economy and ecology, you can't say all that much on the basis of replicated experiments and mathematical evidence. I would go so far as to say that the more solid the scientific research you can do on something, the less relevant it is.'

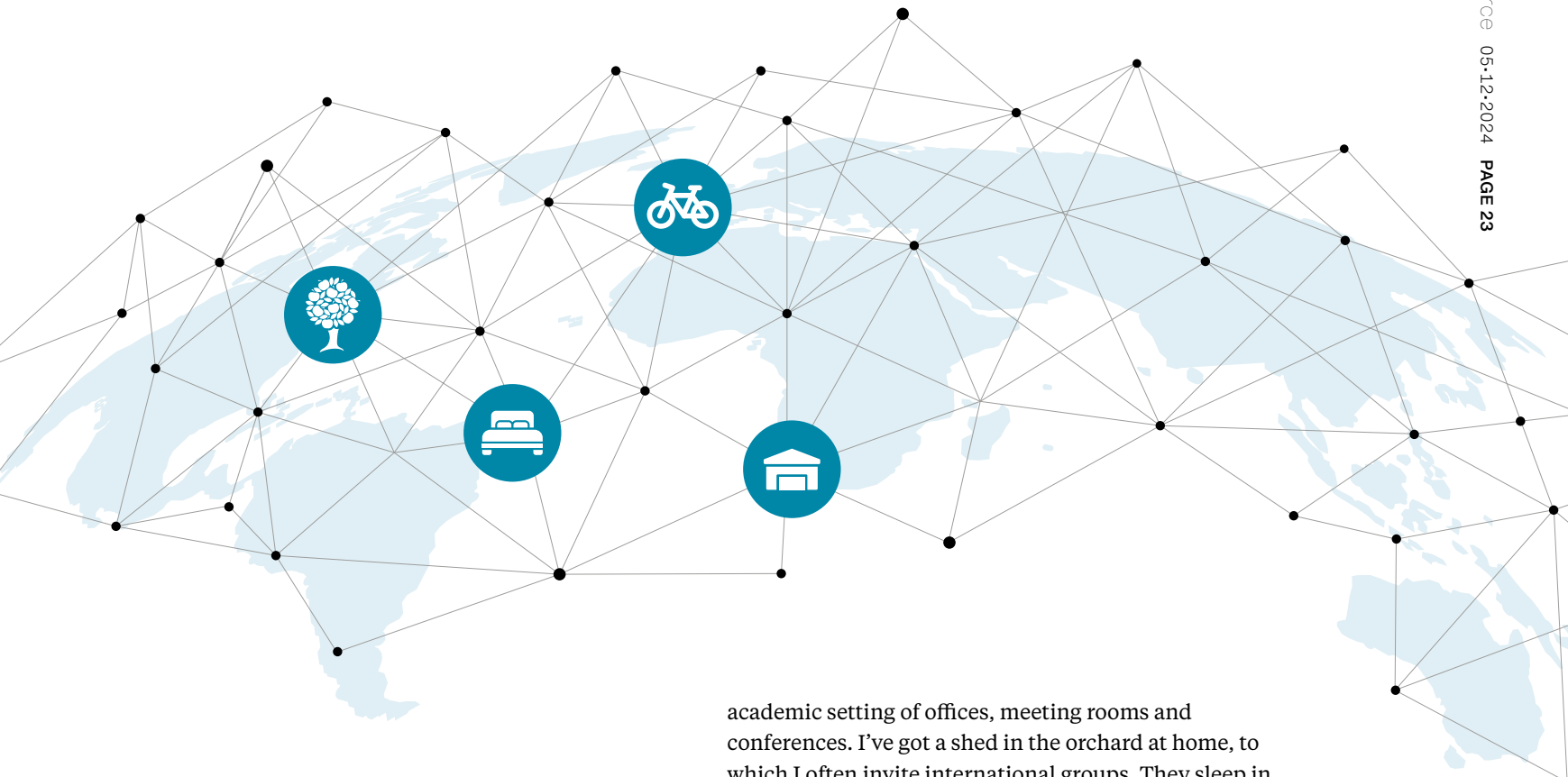
You even write that entire generations of ecologists and economists have wasted their time on research based on p-values. What's wrong with p-values, which tell you whether experimental results are based on coincidence?

'P-values are very good and useful. They give us something to hold on to. But they are also very limiting in terms of what you can study with them. I can't attach a p-value to the question of how things will end for the Earth, or what a fishing ban will do for a coral reef with the resilience of the Great Barrier Reef. What we say is: don't limit your thinking power to things that you can stick a p-value on. There are so many more questions that deserve priority, and on which we need to say something sensible.'

Maths plays a big role in your quest for tipping points.

'For sure. I have certainly been guilty of trying to dazzle people with figures. I too lived up to expectations by producing impressive maths. You have to fight your

'To study complex systems we need a new holism'



way into this world before you can allow yourself more freedom. But I have always pointed towards the holistic side. I have a lot of respect for nature's diversity, complexity and incomprehensibility.'

Does classical science fall short in the study of complex systems?

'It is a very limited method. For studying complex systems we need a new holism. And we are creating that, using a good set of tools. Among those tools, there's a big role for reasoning, modelling and the analysis of big data. Experiments and maths can't provide all the answers. You get the furthest by bringing approaches from as many disciplines as possible alongside each other.'

And by bringing scientists from different disciplines together with artists in inspiring locations outside the institution?

'Yes. If you want to understand the complete picture, disciplines and subfields set artificial boundaries. New ideas arise more easily outside the conventional

'I can't stick a p-value on the question of how things will end for the planet'

academic setting of offices, meeting rooms and conferences. I've got a shed in the orchard at home, to which I often invite international groups. They sleep in a small hotel in the neighbourhood and I rent bikes for them all. We talk, cycle and walk. Many an article for *Science* or *Nature* has been produced that way.'

You also argue for a more active role for scientists. They should help to initiate, steer and influence change. That sounds activist?

'In ecology and economics, intervening is perfectly normal. Take nature management or steering behaviour with nudging. But in other sciences it is seen as unethical. You can be activists in so many ways. You don't have to blockade a motorway. There can be activism in our choice of research question. It depends on your personality and your scientific field. I think that we scientists serve humanity well if we do our best to deliver the tools with which society can improve its own future.'

Not everyone has the kind of freedom you have.

'That's true. You can say the culture needs to change, but you will have to toe the line first, otherwise you won't get anywhere. I fought my way in and I bagged a lot of funding. Having done that, I also get to say that we should change the way it's distributed, and set different priorities. That's my role now. And yes, it's easier to play that role once you've earned your laurels.' ■

This is how societies celebrate winter

Warmth in Wageningen

When the days get shorter and the temperature drops, student societies bring extra warmth. Not by turning up the heating a bit, but by focusing on two important aspects of the Christmas spirit: taking care of one another and being together. (And by burning Christmas trees.) Text Luuk Zegers • Photo Guy Ackermans

Taking care of one another

In recent years, new traditions in raising money for charity have emerged at various Wageningen student societies. For example, WVS Ceres has been committed to the ALS foundation for almost a decade after a former member was diagnosed with the muscular disease. During a campaign week in November 7000 euros was raised, says Victoria van der Deijl of Stichting Durf, the Ceres charity committee. 'Every year, we organize a campaign week for the charity full of activities. Think pizza deals, collecting empty crates at Ceres club houses, and a lottery. Or an assault course where you could sabotage other teams in exchange for donations – for example by smearing extra green soap on the course. The closing event was an ALS sponsored walk, which raised the most money.'

Another young tradition, which started in the middle of the pandemic at KSV Franciscus, is the Francerious Request. It's a radio marathon for charity like the 3FM Serious Request, but on a smaller scale. The Wageningen Franciscans broadcast radio non-stop for 72 hours and think of all kinds of actions to raise money for a local charity. 'Francerious Request gets bigger every year and members come up with more and more

creative actions,' says chair Roos Donkers. For example, a year group covered 380 kilometres in two rickshaws this year during a heroic tour from Zeeland to Wageningen via Amsterdam. 'And aside from raising money and giving something back to your local community, such an action also creates solidarity within the society.' This year, a record sum of 8400 euros was raised for the *Speelgoed-bank*, an organization that collects toys for low-income families in and around Wageningen.

Moustaches and Petes

In just a couple of years, rowing organization Argo have established a new autumn classic on the water: the Moust-eight. Teams of eight rowers and a cox compete against each other, says Argonaut Morris Koetse. 'Always at the end of November, always with a moustache.' The competition is in celebration of Movember, a month of action revolving around men's health. 'With the Moust-eight and other actions, we are raising awareness of mental health in men, pros-

tate cancer and testicular cancer. We also raise money for charities in this field.' Argo is now the official 'student ambassador' of Movember, which means that they invite other Wageningen societies to join in. Students at KSV Franciscus, JV Unitas and SSR-W also grew moustaches and raised money. In total, the combined Movember actions accounted for more than 1500 euros.

And there are more collaborations. For instance, the charity committees Fiducia (Franciscus) and Durf (Ceres) joined forces this year for the annual Pete campaign. Members of the societies collected money, bought presents and then delivered them – dressed up as Petes – on Saint Nicholas' Eve. 'This is usually just a Franciscus event,' says Van der Deijl of Durf. 'A good friend of mine is in Fiducia. We thought: if we do this with two societies, we can make even more children happy on 5 December.'

'It was very ugly but also very big'

Being together

Francistmas and *Proppenfeest*

Each society has its own traditions for being together. At Franciscus, it's Francistmas time on the Friday before the Christmas holiday, says chair Donkers. 'All club houses have their own Christmas dinner with alumni. Afterwards, everyone goes to the pub in their Christmas outfits.' Ceres also gets festive on that Friday, with the *Proppenfeest*. Here too it will first be time for a Christmas dinner at the Ceres club houses, says chair Quirine Kerpen. 'A lot of former housemates come, which makes it extra fun. Afterwards, around midnight, every-

one goes to the society to continue the party into the wee hours.'

At Argo, Christmas dinner is held at the society. It has a few special traditions, says chair Rogier Derksen. 'First-year rowers organize the dinner. One of the traditions is that every year we serve one more course than the year before. I

'A spoonful of quark or a handful of peanuts, for example, also counts as a course'

don't know when it started, but when I was a first-year in 2019 we served twenty courses.' This also includes simple courses, he says. 'A spoon of quark or a handful of peanuts, for example, also counts as a course.'

Christmas tree

The first-year rowers also have to arrange a Christmas tree, which must always be bigger than the year before, says Derksen. 'Last year they got a huge tree 15 metres tall. In the end, they had to cut it in half, so it would fit in the corner at an angle. It was very ugly but also very big.' The first-years don't just have to arrange the tree, they also have to protect it against senior Argonauts, who try to get the tree outside. 'Sometimes the tree ends up in the rowing tank, so it gets wet. Sometimes the tree ends up in the fireplace so it gets burned.'

After the Christmas dinner, the Argonauts go to the *Proppenfeest* at Ceres with as many members as possible, according to Derksen. 'A nice ending.' Although, ending? The next day, all competitive rowers are expected back at Argo early in the morning for a rowing competition. 'We make random crews: female, male, light, heavy — all mixed. And then we race together. Everyone is hungover, everyone is tired, so of course it doesn't work at all. That's how we teach our rowers that alcohol and rowing hard don't go well together.' What is the name of this traditional rowing lesson? 'The Christmas Tree.' ■



Argo rowers taking part in the Mousteight. • Photo Guy Ackermans

DUCKWEED ON THE PLATE

Water lentils (commonly known as duckweed) contain lots of protein, can easily be integrated into meals, and are sustainable to produce. Yet we don't eat them. They are a 'novel food', so they are not approved for consumption. But that is set to change. 'We're just waiting for Ursula von der Leyen's signature.'

'It really is a very nice little plant,' says researcher Ingrid van der Meer (Bioscience, Wageningen Plant Research, WPR) – at least five times in a conversation of three quarters of an hour. The problem with the little-known water lentil is that this vegetable – which is prepared and tastes rather like spinach – was not eaten in Europe on a large scale before 1997. That makes it a 'novel food', so producers have to go through an approval procedure with the European Food Safety Authority (EFSA).

Van der Meer – who does a lot of applied research in Bioscience – has been through that procedure. She first encountered water lentils about 14 years ago. 'I saw how small the plant was, how fast it grows and how it then splits and self-propagates. All it needs is light, a bit of water and the right nutrients, yet it can grow exponentially.' What is more, water lentils contain a lot of protein. 'About 40 per cent of their

dry weight, just as much as soya beans.' In the context of the protein transition, Van der Meer saw water lentils as a great source of sustainable, plant protein. She decided to set to work.

Recouping

Financiers were not exactly queuing up to fund Van der Meer's research. 'Companies didn't know whether water lentils would get through the approval procedure; nor whether, even if that did go well, consumers would then want to eat them. They felt there was too big a risk of not recouping their investment.' Van der Meer persevered, approached Dutch and international charities, and used all her powers of persuasion, securing a startup fund of 400,000 euros from the London-based Wellcome Trust. This charity added more funding later, and the Dutch *Goeie Grutten* Foundation invested too. The fact that no companies got involved is to her advantage now, Van der Meer explains. In May 2020, she submitted her own application to the EFSA, on behalf of Wageningen Plant Research. 'Because companies think they can earn money with the new product, they keep some information confidential. Now that we are doing it under the auspices of WPR, everything is in the public domain and if approval is granted, anybody can take it from there.'

'THEY CONTAIN
JUST AS MUCH
PROTEIN AS SOYA
BEANS'



Text Dominique Vrouwenvelder

The novel food procedure was pretty complicated. Along with colleagues from Wageningen Food & Biobased Research, Van der Meer and her team put a lot of work into building up a dossier. 'To start with, we had to demonstrate that we could grow water lentils on a large scale.' In an unused greenhouse at a horticultural company, they improvised using 16 basins of 100 square metres. 'We created our basins using pipes on the ground and agricultural plastic. We poured water into them and added some nutrients and the water lentils. In this installation we could harvest 500 kilos of water lentils a week from each 100-square-metre basin.'

Then they could analyse the harvest. Van der Meer: 'We had to do all sorts of measurements on five different batches. Luckily, the plant grows fast and we had collected all the batches within a couple of weeks.' The EFSA asked for details of things like toxicity and allergens, as well as simple things like the composition of



Ingrid van der Meer in the lab • Photo Guy Ackermans

‘COMPANIES DIDN’T KNOW WHETHER THE WATER LENTILS WOULD GET THROUGH THE APPROVAL PROCEDURE’

the water lentils: how much protein, starch and minerals they contain, for instance. ‘And then of course, how humans digest them.’ Fortunately, that goes very well. ‘And our test subjects thought the water lentils were just as tasty as spinach, if not tastier.’

Ticking clock

Altogether, the process has taken about 10 years. It took at least six years to build up the dossier, and after submission, another four years before a committee of experts issued its judgement. Officially, the novel food approval procedure takes 17 months. ‘But every time the assessment committee sends an additional question, the clock stands still. It starts ticking again once

you’ve submitted your answer to the EFSA. At the start, we got 20 questions back. I didn’t think all of them were justified or useful. My guess is that not all the committee members were plant experts. It cost us a lot of time and money.’

Two years ago it looked as though the submission would founder due to the level of manganese in the plant. ‘Ridiculous because it contained the same amount as other plant products, and less than kale. And plants need manganese for photosynthesis, in order to grow.’ This meant

serious frustration for Van de Meer, as well as costing more time and money, but the EFSA is now convinced that the manganese level is safe, and nothing else can really go wrong now.

Restaurants

‘By the time the ink is dry on the signatures, I’ll have warmed up my contacts in the industry to get follow-up projects started,’ laughs Van der Meer. She has already subjected her water lentils to several product development tests. But she doesn’t expect to see water lentils in the supermarket any day soon. Perhaps in up-market restaurants, though. ‘As consumers get used to the product, it will gradually become more widely available. That gives growers time to upscale their production too.’ ■

Wageningen one day (maybe)

What could a climate-proof Wageningen in 2120 look like? WUR researchers and municipal civil servants looked into their crystal balls.

Take a good look at the map on these pages. You can be sure it won't be like that, for the simple reason that no one can predict the future. 'We don't know what the climate, mobility or the human population will look like in 100 years' time,' admits Climate Resilience researcher Sverre van Klaveren. 'If you think ahead 100 years, you let go of what is or isn't feasible. You have to go back to the question of which values you put first.' Those values and starting points are the same as the ones underpinning the highly acclaimed project 'The Netherlands in 2120', led by Climate programme leader Tim van Hattum. Wageningen in 2120 is a local version of the idea, drawn up by staff and students at WUR together with local civil servants, the water board and provincial government staff. Similar future scenarios have been drawn up for various government bodies. 'But this one is the most substantial,' says Van Klaveren. 'Precisely because you're working at the local level, it's less about abstract broad lines and more about hands-on local implementation. You have to take sensitivities into account more.'

High-rise

And there is no shortage of sensitivities. In the Wageningen of the future, for example, plenty of people live in the natural surroundings to the east of the town. High-rise residences on the Wageningse Berg, in Wageningen-Hoog and on the Celtic Fields

'A campus that empties out at five o'clock is wasting space'



Text Roelof Kleis

near the railway are unthinkable in 2024. 'Actually, we're trying to be provocative with this,' says Van Klaveren. 'The municipality needs to consider where and how to build. In the future, the Rhine will be an unpredictable, flood-prone river. There will be more seepage water from the Veluwe and heavier showers. Building in the valley to the west of the town could be asking for trouble. We're already seeing that crawl spaces in Kortenoord get flooded on a regular basis. You *can* build to the west of the town, but then you should build on piles. So why not build to the east?' Another eyecatcher is the 500-metre-wide dyke bordering the town, with housing on it. No, this is not a new version of the rejected 1970s plan to build all over the water meadows of the Rhine, says Van Klaveren. 'That is not what we have in mind. The river needs space, and the water meadows will be preserved.' The idea is that the current dyke will no longer just be a road but will be multifunctional. You might question the proposed width of the dyke, and there is quite some discussion about that in the group.'

Car-free

There is not much room for traffic in the Wageningen of the future. The city is largely car-free. Asphalt has made way for housing, green space, recreational space and urban farming. Transport to and from the city limits takes the form of monorails high above the ground. Funnily enough, those lines run exactly where tramlines once ran. Van Klaveren: 'What transport will look like

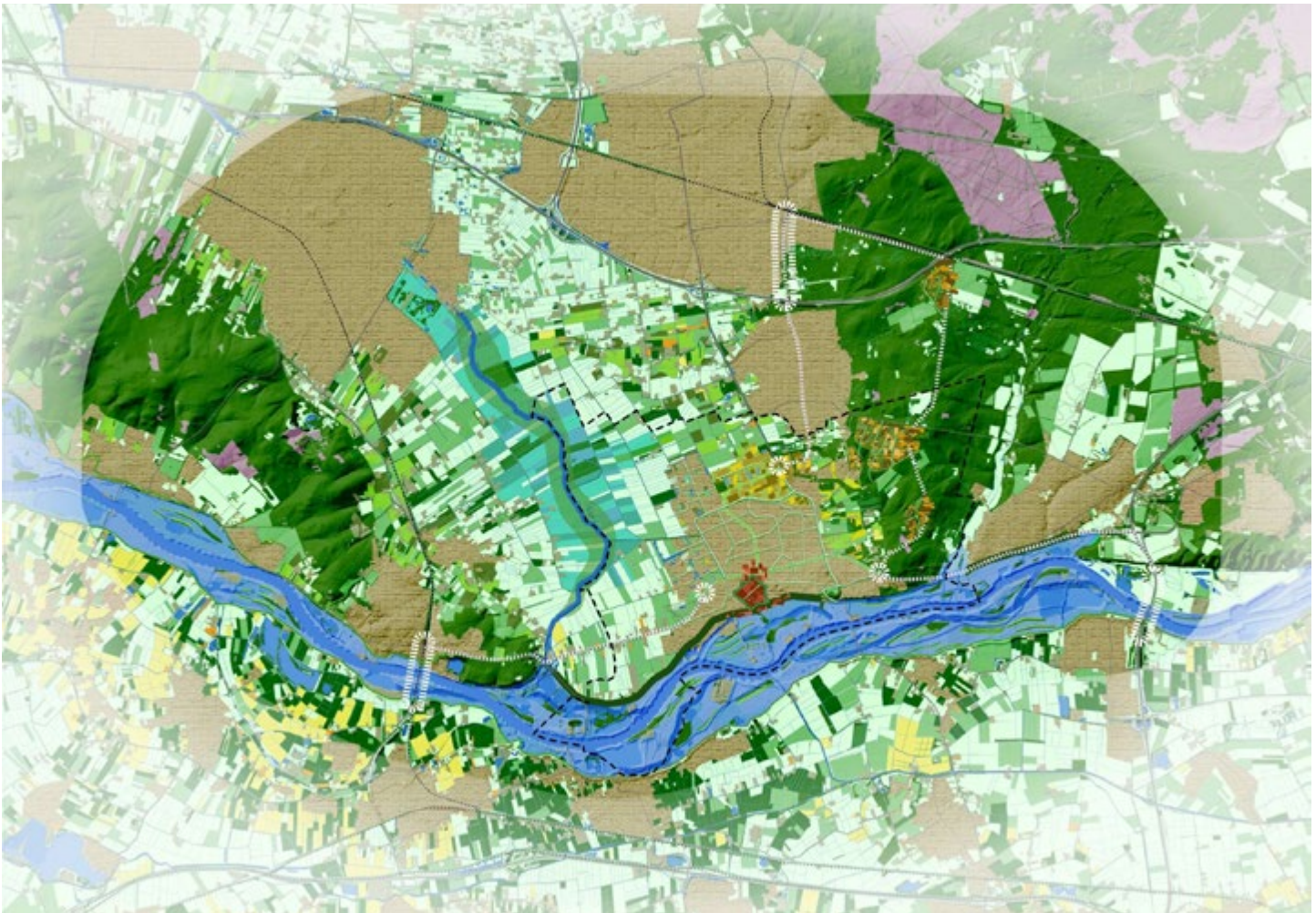
in 100 years is very much a matter of speculation. We propose a monorail, but of course it could just as easily be something else. The point is that the city is for living in. From the city limits there are faster forms of transport to hubs for transport further afield.'

Also striking is the design of the Binnenveld. A large forested wetland is envisaged along the Grift river. Elsewhere in the Binnenveld are numerous trial plots on which both WUR and the city practice inclusive agriculture, develop new residential models and materials, and generate alternative energy. There is a big role for WUR in this vision. There will be lots of housing on the campus, for instance. 'A campus that empties out at five o'clock is wasting space,' explains Van Klaveren. 'The challenges we face in terms of housing, sustainable energy and the agricultural transition demand a lot of space. The space on campus is currently being used for only one purpose.'

Wetland forest

The population of Wageningen in 2120 is expected to be 60,000. That is a projection based on the current growth rate, so that's like reading tealeaves too. It's

not easy to see 100 years ahead. And especially when it's about specific things like the energy supply. In 2120 every household will generate its own energy. But it's impossible to predict how it will do that, says Van Klaveren. 'Natural gas is a nice example of the impermanence of everything. Widespread use of natural gas was only rolled out from the 1960s. And now, 60 years later, we are already phasing it out. So a new technology could easily be developed in the coming years that has disappeared again by 2120.' Few people alive now will experience Wageningen in 2120. 'But if we could, I would be particularly curious about the Binnenveld,' says Van Klaveren. 'The wetland forest and the alternative forms of agriculture. As well as the character of the Eng, where we have proposed a food forest.' And yes, he would certainly pop over to the Wageningse Berg. 'To see how the vision turned out there – with a knot in my stomach. I love to go walking there, you see.' ■



This is what Wageningen could look like in 100 years' time, with more dense housing in the centre, homes on the dyke, high-rise flats on the Berg and hubs • Source wur.nl



The Christmas Dinner of the future

Times change, and so do our eating habits. The *Resource* editors have been pondering the Christmas Dinner menu of the future: one based on recent Wageningen scientific research. Text Dominique Vrouwenvelder and Marieke Enter • Illustrations Shutterstock

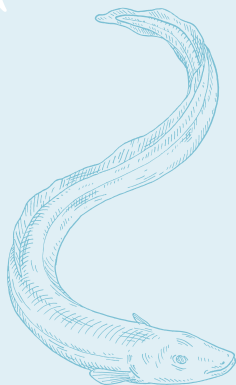
A quick test

The Christmas Dinner of the future doesn't start at the table. Earlier in the day you'll do a home test to check your metabolic profile and glucose levels. Eating in accordance with your personal metabolism makes you healthier, we learn from postdoc Anouk Gijbels' PhD research. The form of 'personalized nutrition' that she studied improves our cardiometabolic health: i.e. that of our metabolic and cardiovascular systems.

Would your body benefit from a diet full of 'good' unsaturated fatty acids? Then you'll be served an avocado salad, **fatty fish** and nuts. If you're in the group that's better off with a low-fat, high-fibre and protein-rich diet, your menu will include **chicken breast** with lots of vegetables and a low-fat dairy-based dressing.

[Fatty fish]

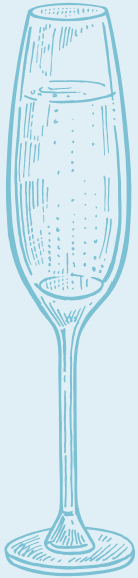
No eels, mind you. With a view to the future, the International Council for the Exploration of the Seas (ICES) recently advised a total ban on eel fishing. 'Because it is not certain how resilient the current population is,' says the Wageningen researcher and ICES workgroup member Tessa van der Hammen.



[Chicken breast]

For the poultry farmers of the future, Bram Bos and Ellen van Weeghel (Wageningen Livestock Research) have developed an alternative barn concept that stimulates natural behaviour while producing much lower emissions of ammonia and particulate matter. The crux of the design is a separate, sunken dust-bathhouse where much less dust is kicked up, plus a manure scraper that keeps the thick layer of substrate the chickens scratch in clean. Just Google 'wellness for chickens' and you'll see how it works.





Slimming shot

The era of obesity medication has reached our Christmas Dinner, predicts the crystal ball of pharmacologist and professor of Nutritional Biology Renger Witkamp. The hormone semaglutide, which was developed as a diabetes drug, has recently proven to have a pleasing side effect: it helps people lose weight due to its effect on our hunger hormone, among other things.

The currently available substances with semaglutide are based on proteins. These are broken down by the enzymes in our digestive tract, so people have to inject themselves with them. But producers realize they could do good business with this drug, so product

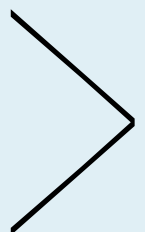
development is still ongoing. In a few years' time, semaglutide products will no longer be 'prescription only' for people with diabetes or overweight. Anyone will be able to buy them at the local pharmacy. And there will be no need for a syringe; you'll be able just to drink the product. A shot before sitting down to Christmas Dinner will prevent you from ending the evening collapsed on the sofa feeling stuffed and guilty.

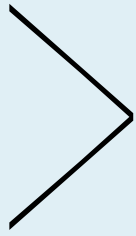
Appropriate dish: A shot of semaglutide

A side of happy bacteria

All that table-top grilling at Christmas Dinner was cancelled long ago. 'We must nourish our guts and our gut bacteria,' goes the latest advice, prompted by recent PhD graduate Marie-Luise Puhlman. If our gut bacteria don't get enough fibre, they start consuming other things, like the mucus lining the gut or proteins from undigested food – and that's not good news. If your gut bacteria do get sufficient indigestible fibre, they produce substances that are good for your health. Fibre can boost our innate immune system. That's what you want! That indigestible fibre comes from plant sources such as vegetables and grains, preferably from naturally high-fibre products. Powders and supplements are soooo 2024.

Appropriate dish: High-fibre salad with chicory root

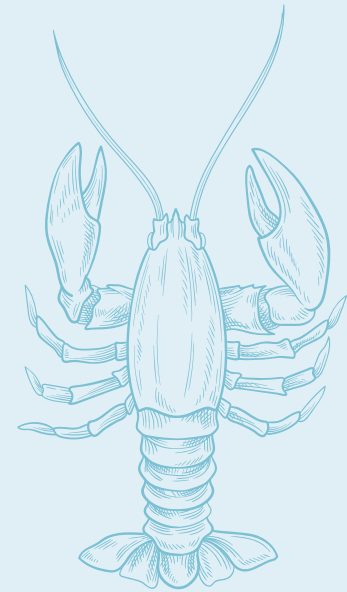




Mystery on the menu

One thing that definitely isn't on the menu is Oosterschelde lobster – famous for its delicate flavour – from the Oosterschelde estuary. Since last year, that population has been diseased and dying off, while the same species in the Grevelingenmeer lake remains healthy. In its research into the causes of this, WMR has yet to find any bacteria, viruses or parasites that could explain the death rate. Nor did the researchers find raised levels of heavy metals, denting the theory that the culprit could be steel slag, a waste product of the steel industry that is used as ground and shoreline cover. WMR has submitted a proposal for follow-up research to the ministry, suggesting that mussel mortality in the Oosterschelde be studied as well, because that too peaks every couple of years, and is equally inexplicable.

Appropriate dish: The latest thing: water lentils (see page 26) – just as chic as Oosterschelde lobster.



[Lobster]

Research earlier this year by the University of Exeter and Wageningen Marine Research (WMR) showed that Oosterschelde lobsters form a genetically unique population. Lobsters from Norway and Morocco are more closely related than Oosterschelde lobsters are to North Sea lobsters.

Offshore mussel farming

Dutch mussels are a low-footprint choice: the CO₂ footprint of mussels is six times lower than that of chicken and eight times lower than that of beef. With a view to increasing the production options, Wageningen Marine Research is currently doing research on offshore mussel cultivation. This is taking place in the Voordelta shallows off the coast, where there is space and a plentiful food supply. The mussels seem to thrive in the suspended farming system used, although those in faster flowing water at the surface grow more slowly than those at greater depths. Besides higher costs, there's another downside to offshore mussel farming: 'You can only harvest in calm weather, which doesn't occur as often out at sea,' researcher Jacob Capelle told broadcaster Omroep Zeeland.



[Mussels]

There are an additional 4000 hectares of mussel banks on the exposed sandbanks of the Wadden Sea. 'And that is a cautious estimate. It seems as though the number of mussel banks has doubled,' said Karin Troost on the Dutch news site nos.nl last week. Wageningen Marine Research is monitoring the development of mussel banks using satellite images. Not all new mussel banks survive: some get washed away or serve as food.



Appropriate dish: Steamed mussels with fennel – a crop that is apparently fantastic for protecting your leaf vegetables from slugs, and which made its mark on the outcomes of the Wageningen CitizenScience project Moestuin Mix (Vegetable Garden Mix) this year.

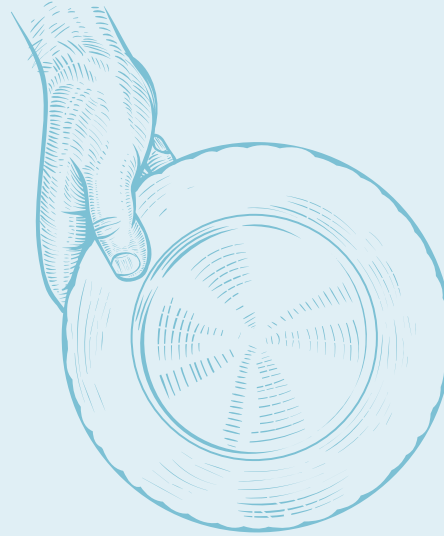
Full circle

For those who don't feel morally impelled to serve a fully plant-based Christmas Dinner, a little bit of meat or cheese at Christmas can be justifiable – at least, according to Imke de Boer, professor of Livestock & Sustainable Food Systems. In her examination of healthy and regenerative food systems, she found that animals play a key role because they make use of nutrients that would otherwise go to waste. They convert biomass that is unsuitable for human consumption (grass and waste streams) into high-quality food such as meat, eggs and dairy produce. Meanwhile, they also provide other ecosystem services such

as manure. De Boer's philosophy is already being put into practice here and there. At Wroetende Varkens (Rootling Pigs) for example, a small pig farm in the Achterhoek in the east of the Netherlands, where the pigs are fed on waste from local supermarkets, bakeries and greengrocers. These pigs are not subjected to farrowing cages, docked tails and other aspects of the pork

industry which have horrified people this year. They live up to their name by spending most of their time rootling – species-specific behaviour that is strongly associated with wellbeing.

Appropriate dish: Any cut of meat from a rootling pig or a multipurpose cow (one that is used for both milk and meat). Because being economical with nutrients means that any animals killed for their meat should be eaten from top to tail.



Go bananas

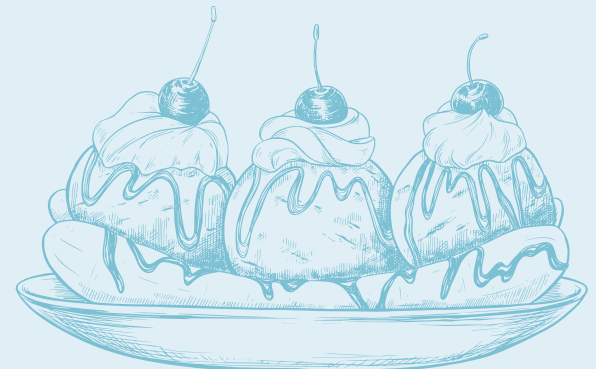
Yelloway One? Sounds like an ambitious American space programme. But no, it's a research project on bananas, which are a striking example of the extreme monocultures in the global food system, and the threat they pose not just to biodiversity but also to humanity. More than half the bananas in the world are of the Cavendish variety. And that is precisely one that is not resistant to the soil fungus fusarium Tropical Race 4 (TR4) and the leaf disease Black Sigatoka. Entire plantations have succumbed to these diseases, resulting in damage to the tune of hundreds of millions of dollars. This year has seen a breakthrough based on the advice of WUR professor of Phytopathology Gert Kema: a hybrid banana was successfully developed that is resistant to both fusarium Tropical Race 4 (TR4) and Black Sigatoka. This is crucial for the global food supply: in Africa in particular, bananas are just as important as rice, maize or grain in many people's diet. Something to think about during Christmas Dinner. How did that LiveAid song go again?

Appropriate dish: Homemade banana ice-cream with fairtrade chocolate chips



[Chocolate]

Is your mouth already watering at the thought of those crispy chocolate chips? That could even happen after a copious dinner. Results published this year from the MSc thesis of PhD researcher Jiri Kaan (Health & Society) showed that chocolate makes your mouth water even when you're no longer hankering after it.



Limelight



SAT
7-12-2024

Algemene Barak, Droevendaal
12:00-23:00

Houses and cars were destroyed, streets were full of mud and more than 200 people left dead or missing. When bad weather struck Spain at the end of October, it caused devastation. On Saturday 7 December, students are organizing a day of performances, Spanish food and a market to raise money for Valencia. Text Coretta Jongeling

Fundraiser for Valencia

The Droevendaal building Algemene Barak will be turned into a canteen where you can eat Spanish dishes such as tortilla, salmorejo and paella. There will be performances in the afternoon. 'Circus Beatreece will perform an aerial act, there will be fire acts and belly dancers,' says Marina Muñoz Spanu, Environmental Sciences student and one of the organizers. 'Afterwards, various

DJs will play reggaeton, dub and techno. There will also be an all-day second-hand market.' All the proceeds from the event will go to the victims of the floods in Valencia.

Muñoz emphasizes that it's not just about raising money. 'The idea is for this to be a place where people can talk about what happened. The disaster couldn't have been prevented, but the damage could have been less. The Spanish meteorological organizations knew this could happen but the government didn't raise the alarm. When the alert was



eventually sent, it was too late. And then it took three days before the aid efforts started in earnest. That is hard to bear and has had a big impact on people in Spain.'

In addition to the acts and the social events, the organizers will hang up posters in the Droevendaal building with more information about climate change and how the situation developed. 'That way, it will be a kind of commemoration as well.'

TIPS

FRI 6 December

WSKOV anniversary concert

(classical) in the Junushoff

FRI 13 December

Dr. Mozzie & The Psyyclepaths

(punk rock, alternative) in Café Daniels

THU 19 December

Susanne Alt and Sol Jang

(jazz) in Loburg



Inge will be performing with her hula hoops • Own Photo



Column **Willy Contreras-Avilés**

Cannabis sativa L. – Beyond the taboo

Wageningen University has a strong reputation within the Plant Science field. In my case, I am fortunate to say I work in medicinal cannabis research, trying to understand the effect of ultraviolet radiation in the physiology and biochemistry of the plant. Such understanding can potentially help shed light on plant physiological mechanisms, as well as more practical applications of ultraviolet radiation in food production systems to boost the content of compounds with nutritional and medicinal properties.

However, medicinal cannabis is not everyone's cup of tea. Ever since I ventured on my research path with this lovely plant, under a well-regulated scenario, I have encountered clear patterns of misinformation: 'Cannabis is just a drug and therefore irrelevant'. I would like to nuance this taboo with positive facts that can be seen around Wageningen University and in other countries.

The global cannabis market is a sector worth billions which keeps growing, with more countries improving their legalization context. This market is stimulating the development of innovative technologies for better and more efficient plant cultivation systems, including artificial lighting, environmental controllers and sensors, to mention but a few. Technological development depends on the research that takes place in academic institutions, which prompts a close relationship between academia and industry. Thanks to this relationship, people like me and many other PhD and Master's students can become independent researchers. Moreover, doing research in cannabis has connected people all over, resulting in several scientific publications, textbooks and the development of innovative technologies.

We should not overlook the challenges and negative aspects related to cannabis. However, I am convinced that the more interactional instances between governments, industry, academia and society, the more the benefits that will derive from the use and study of this wonderful plant.



Willy Contreras-Avilés (34) is a second-year PhD candidate in Horticulture and Biochemistry of medicinal cannabis, from Panama. He likes to dance (*perrear*), cook Italian food and swim.

Answers to 2024 End-of-year Quiz

1d, 2abcd, 3a3-b1-c4-d2, 4b, 5a, 6b, 7c, 8a, 9abcd, 10c, 11a, 12b, 13a3-b2-c1-d4, 14a, 15d, 16abcd, 17c, 18d, 19a, 20b,

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'No one wants to read about climate research anymore'



WUR SCRAPS CLIMATE RESEARCH

WUR is set to stop all research on climate change and adaptation as of January 2025. Some 700 people will lose their jobs as a result, but the savings in staff costs will be more than enough to close the budget deficit for the 2025-26 academic year. Anyway, climate research 'has been proven to be pointless', said Executive Board member Bens Boekbos during the annual Santa Claus speech.

Boekbos stresses that this had been a difficult decision for the Board to take. 'We've been losing sleep for a while worrying about it. It's awful for all those people who will now be sitting at home jobless. But they can take comfort from the fact that they are contributing to the greater good, namely the survival of WUR. And that fits with the Christmas spirit.'

After the most recent COP in Azerbaijan, it is clear all the billions WUR has spent on climate research in the course of its existence have been wasted. That was a major factor in the decision to scrap

this research, emphasizes Boekbos.

'The countries that are responsible for CO₂ emissions have different priorities for their cash than keeping the planet liveable for their children. That is a shame but also understandable. Anyway, no one wants to do or read about this kind of research anymore because it is so depressing.'

In addition, this move will save WUR substantial amounts of money. Boekbos is not prepared to say how many millions are involved but he does admit: 'it is a huge relief. We were worried sick about the whole money thing.'

In addition to the research, WUR will also be stopping all climate-related education. Students doing any of the

'No one wants to do this kind of research anymore because it is so depressing'

six Master's (such as Climate Studies and Environmental Sciences) or five Bachelor's will be able to continue with another degree programme of their choice after the Christmas holidays. Modules in Biology and Hydrology, for example, that deal with climate change have also been cancelled. This may lead to students getting behind with their studies, in which case they will have to pay the slow student fine. 'Unfortunately, that money doesn't go to WUR.'