

WUR from within: straight, sharp, transparent

No 12

Resource

FEBRUARY 2024 VOLUME 13

The journalism platform for all at Wageningen University & Research

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plant knowledge

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join forces

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for charity

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nature-based
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FOREWORD

Bas

How can you tell your parents you don't want to live any longer? What a massive, sad question. I read it while preparing this issue and knew that one hour later I would be meeting Bas, the student who once asked that question. As I stand with the photographer in the Forum, he walks towards us, a friendly, intelligent look behind his glasses. While the photos are being taken, he talks openly about the phase in his life when he was asking this question. Fortunately he is still with us, but that was not a foregone conclusion. Anyone who is also struggling with depression or suicidal thoughts, or knows someone in that situation, should read Bas's story (page 26). Perhaps his message can help: share your emotions, don't try and cope all alone. There is no logical transition from a subject like that, so I'll just do an abrupt switch. After we published an article in *Resource* ('Bus or train should be the default') about students who no longer want to fly to their excursion destination, we got an email from a reader asking: what about PhD trips? Is that an issue there too? Yes, it turns out. We asked around and the impression we got was that nothing is accepted as a matter of course anymore and everything is up for discussion. Even flights to far-away countries. In my opinion, that is a hopeful sign.

Willem André
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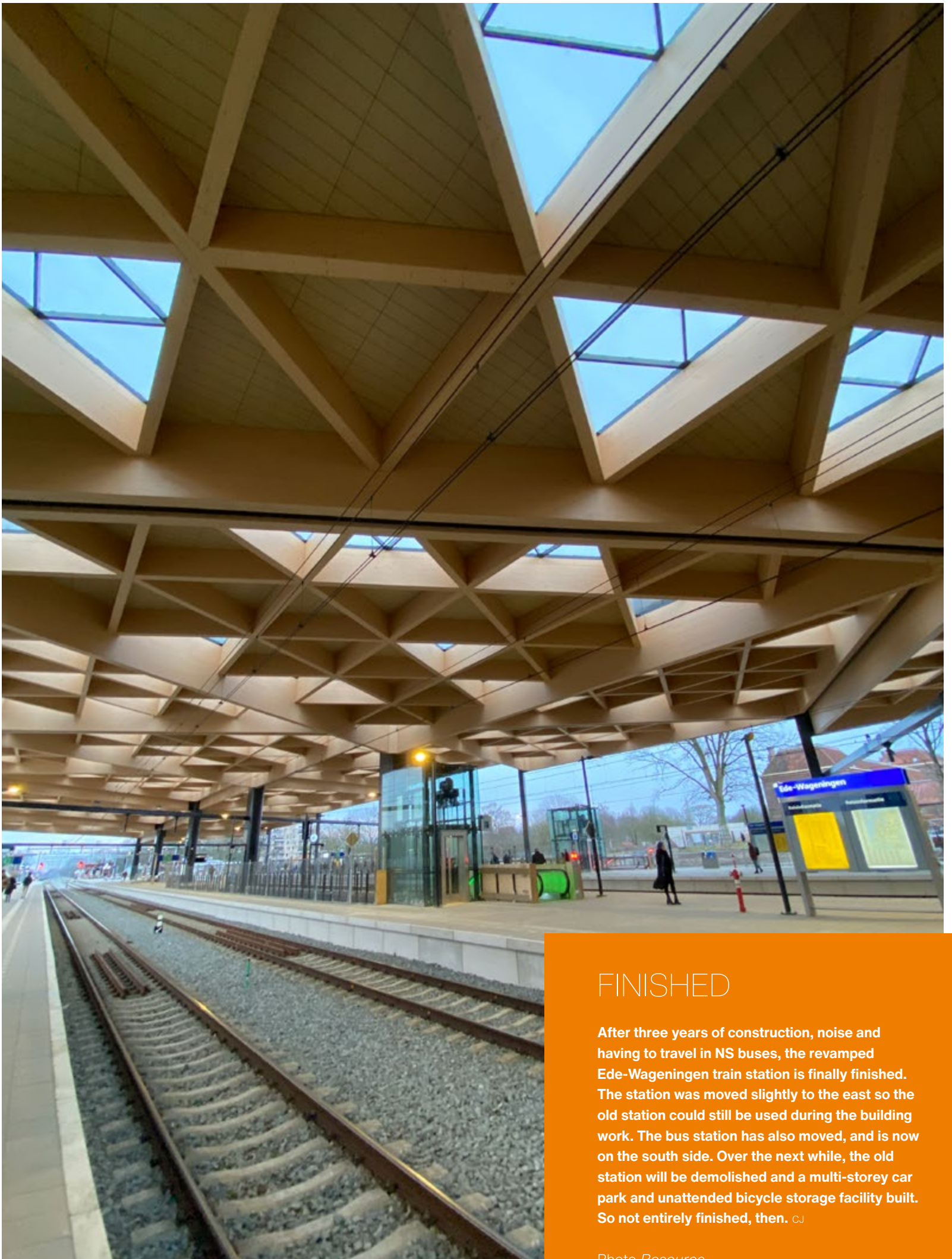
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FINISHED

After three years of construction, noise and having to travel in NS buses, the revamped Ede-Wageningen train station is finally finished. The station was moved slightly to the east so the old station could still be used during the building work. The bus station has also moved, and is now on the south side. Over the next while, the old station will be demolished and a multi-storey car park and unattended bicycle storage facility built. So not entirely finished, then. CJ

Photo Resource

Decolonizing plant knowledge

The five-yearly art exhibition *Beelden op de Berg* in WUR's Belmonte Arboretum will take decolonization as its theme this year. Entitled *Enchanter's Nightshade — Decolonizing Botany*, the exhibition will showcase works made specially for it by 14 internationally renowned artists.

The theme draws attention to how our knowledge of nature, plants and trees is intertwined with colonialism, migration and economic profit. 'Decolonization also means recognizing and appreciating the contributions of indigenous communities to our knowledge of plants,' explains curator Mirjam Westen. She is the curator of modern art at Museum Arnhem.

Students

A group of second-year Bachelor's students are involved in the exhibition and its theme through an honours research project. Since September, they have been studying how various cultures deal with these issues. The plan is to present their work in a book. According to the curator Westen, 'Enchanter's Nightshade' refers to the traditional knowledge of medicinal plants, which Western medicine often belittles. The participating artists come from countries such as Mexico, South Africa, China, Chile, Armenia and Malaysia. Femke Herregraven and Jerrold Saija will be taking part from the Netherlands. RK

belmontearboretum.nl



An artwork in progress, by the Armenian Karen Sargsyan • Photo Taco Remijnse



Photo Shutterstock

Microbiologists join forces

A new Wageningen Microbiome Centre (WMC) will be set up as a space for collaboration between WUR's microbiologists. The centre will take the physical form of a new building, to be erected in 2025 on what is currently the carpark next to Axis.

The new premises will house five chair groups: Microbiology, Systems & Synthetic Biology, Bioprocess Engineering, Toxicology and Host-Microbe Interactions. They will be joined by the Bio-conversion group of Food & Biobased Research and the Dutch Research Council programme UNLOCK.

The initiators behind WMC are professors of Microbiology Thijs Ettema and Hauke Smidt. WMC is the latest in a series of such institutes in the Netherlands. Leiden and the university hospitals of Utrecht, Amsterdam and Groningen all already have similar centres. However, they focus on studying how micro-organisms work in the human body. Also, these are virtual centres without their own building.

Microflora Neerlandica

Wageningen's research on micro-organisms is much broader than just

human nutrition and health. Micro-organisms play a key role in animals, plants and the soil too. About 20 Wageningen groups in total do research on bacteria, viruses, archaea, fungi and micro-algae, whether individually or in combination.

One of the aims of WMC is to compile a *Microflora Neerlandica*, a large collection of samples and the associated data on microbial communities that are found in the Netherlands. The idea is based on *Flora Neerlandica*, which documents the plant world of the Netherlands. Another aim is to combine knowledge on how to manage microbial communities.

Dies

The announcement of the plans for the new centre is no isolated development. The coming Dies Natalis is also all about microbiomes: its theme is *From Globe to Gut: Unravelling the Microbiome*. The guest speaker is Professor Nicole Dubillier, director of the Max Planck Institute for Marine Microbiology in Bremen. She studies cooperation between microbiomes in the deep oceans. RK

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Only five students have started the Dietetics Master's track, part of the Nutrition & Health Master's programme.

This track within the Physiology specialization is intended for dieticians who want to broaden their scientific knowledge. There was room for 20 to 25 students, but publicity for the new option started late so the target group was not yet aware of the Master track's existence. DV

Parliament want limits on internationals



The Lower House of Parliament has agreed to a specific enrolment limit for foreign students. Many universities have been waiting for years to be allowed to put a brake on the intake of foreign students. The Lower House voted in favour of an enrolment limit once before, but the then newly appointed Education minister Robbert Dijkgraaf withdrew the bill from the Upper House because he wanted to improve it first.

VVD spokesperson Claire Martens-America thought Dijkgraaf was taking too long given the large influx of international students. In January, she introduced an amendment to get the 'capacity limit' introduced as soon as possible. Parliament agreed with her. Even so, Dijkgraaf thinks it will be at least a year before the enrolment limit can be implemented. LZ

Argonauts raise money for disabled sports

Four aspiring members of one of Argo's clubs kept a rowing machine in continuous action for 24 hours. They raised 1072 euros for the Disabled Sports Fund.

The rowers want to join the select club De Heeren van de Dodona. But first they have to complete various assignments, including this ergometer challenge. Nander Jasperse (18, left in the photo) is one of the four aspiring members. He is pleased with the amount they raised. 'It's more than we expected. We're really grateful to all the people who donated. I am also proud of myself and my fellow candidates for completing this challenge.' The rowers started the challenge on Monday 12 February at 9 pm. 'There were four of us, so we each had to spend six hours on the ergometer,' says Jasperse. The candidates did that in 1.5 hour

sessions. 'That then gave you four-and-a-half hours to rest and get some sleep,' says Jasperse. They finished Tuesday evening at 9 pm.

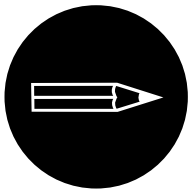
Good fun

The ergometer challenge is an annual ritual for rowers who want to join the Heeren van de Dodona club. The aspiring members are always allowed to choose their own charity, explains Jasperse. 'As rowers, we find sport and exercise important. That's why we came up with the Disabled Sports Fund.' This was the first time the entire ergometer challenge was streamed live on Instagram. 'We set up an account especially for this,' says Jasperse. 'We're called HeerenvandeDodonatie.' The profile page had a link to the website where people



Photo W.S.R. Argo

could make donations. The ergometer challenge was 'tough and uncomfortable', according to Jasperse. 'But you've got to do your bit for charity. And it was good fun with the four of us anyway.' LZ



Even faster burnout with AI?

The department where I started my career in 1987 had one PC, and my arrival doubled the number of people who knew how to use it. Researchers used calculators to perform their calculations and wrote the answers down on graph paper. The secretary typed out their hand-written texts, pasted the graphs in between and made as many photocopies as were needed for the number of reports. A project manager who completed two projects per year was praised for their efficiency. The wave of digitalization that has taken place since then means many of the above tasks take no time at all nowadays. Project managers can now complete five to ten projects a year. And because meetings are held online, they lose hardly any time due to travel. That must mean they can take on a couple of extra projects instead.

Or can they? Haven't we reached the point where the limit on how much work we can do is no longer the practical activities involved, but rather the mental taxation? A project manager in 1987 had to

'The mental effort required by modern project managers is five times as great'

required for modern project managers is five times as great. Imagine what it would be like if we still said two projects a year was enough. Burnout wouldn't exist! But together we have increased the work

cope with the responsibilities, concerns and networks of one or two projects. The mental effort

pressure. We didn't know any better then, but now we do!

With the rise of AI, we are on the brink of the next wave of digitalization. Soon data processing and reporting will be done even more efficiently. That will leave us researchers with free time — as long as we don't take on yet more projects! Let's use that extra time for discussions with colleagues, inspiring experiments or simply staring briefly out of the window. Our bosses won't notice as we'll be doing the same amount of work as before. In fact, they will be pleasantly surprised by the falling sickness absence and the high employee satisfaction scores. Do we have a deal?

Edwin Foekema, researcher in Experimental Eco(toxico)logy

Basic grant falls by 164 euros

The basic grant for students who leave home will fall in September. The Dutch Parliament took this decision on Thursday 15 February. Students will get 302 euros per month — 164 euros less than now. Nothing will change for students living at home with their parents. They receive 121.33 euros per month.

The basic grant was reintroduced this academic year after an eight-year gap. There was good news for students living on their own: the grant was increased temporarily by 164 euros per month because of the high inflation. That increase will now end. The political parties D66 and SP had proposed extending the extra support for another year but their amendment was rejected by the right-wing parties. Only Forum voor Democratie voted with the left-wing parties (see picture). To be precise, the grant is now 466.69 euros per month and will fall to 302.39 euros next academic year. Nothing will change for students living at home with their parents. They receive 121.33 euros per month.

Strongly worded letter

This all has no effect on the supplementary grant, which students get if their parents' income is below a certain norm. The supplementary grant is up to 457.60 euros. This week, stu-

dent organizations sent a 'strongly worded letter' to the Lower House of Parliament. They argue the basic grant is too low anyway given the high costs students face, so the temporary increase should be kept.

D66 and SP wanted to fund the extra year by taking the money from an unused source in another ministry. Education minister Robbert Dijkgraaf thought that was not a good idea. 'Moving funds around is not what an outgoing government should be doing,' he said. HOP



Photo Shutterstock

BLUETONGUE:

'Situation very concerning'

Last year, the sheep population of the Netherlands fell by 61,000 (-8.4 per cent) to 662,000 sheep, Statistics Netherlands (CBS) reported last week. The main culprit is bluetongue, a viral disease spread by midges that has been circulating in the Netherlands again since September 2023.

Noelle Hoorneman, a researcher at the Centre for Genetic Resources, the Netherlands (CGN), calls the situation 'very concerning, even when compared to previous epidemics of infectious diseases.'

Hoorneman, who also keeps sheep, clarifies her concerns: 'We had foot and mouth disease in 2001, then a bluetongue outbreak in 2006/2007. Those outbreaks had a big impact, but they didn't come anywhere near the numbers we are seeing now. We know bluetongue can potentially be very virulent and that certainly applies to this variant, which is about twice as deadly and spreads two to three times faster.'

Provincial distribution

The CBS figures show that the biggest decline in sheep numbers was in the provinces of Noord-Holland and Friesland, with about 15,000 fewer sheep each than the previous year. In percentages, this is a fall of 15.7 per cent in Noord-Holland and 11.5 per cent in Friesland. The percentage fall in Utrecht province was also substantial, at 15.4 per cent. In absolute numbers, the decrease was 6,500 sheep. Sheep numbers fell by about 10 per cent in Drenthe and Gelderland. Noord-Brabant was the only province to see an increase in the number of sheep last year (+6.4 per cent).

Hoorneman: 'Those figures clearly show the influence of bluetongue. Sheep numbers are declining anyway because various factors are putting



pressure on sheep farmers. The bonus for grazing animals has been abolished, the agricultural tenancy rules have changed and of course some sheep farmers are stopping because of the wolf. But those factors don't have this obvious geographical effect. You can clearly see the midge distribution reflected in the CBS figures.'

Vaccine

Sheep farmers have pinned their hopes on a safe and efficacious vaccine. That proved an effective weapon in putting an end to the bluetongue (serotype 8) outbreak in 2006. It looks as if there could soon be a vaccine for this bluetongue outbreak too: Agriculture minister Piet Adema says at least one pharma company has a candidate it wants to test. Melle Holwerda (Wageningen Bioveterinary Research) confirms that one vaccine is ready for testing by the National Reference Laboratory for Vector-borne and Zoonotic Viral Diseases, which he heads. 'We will have the results in May at the earliest. If the outcome is positive, this will be followed by the approval procedure. If there are no hitches, the vaccine could be available for use in the summer,' says Holwerda.

Bluetongue could endanger the survival of rare Dutch sheep breeds, Hoorneman previously told Resource. There is still little known about the suspected differences in susceptibility of various sheep breeds, as discussed in that article. Hoorneman: 'WUR is paying a lot of attention to this aspect. For example, on 1 March there is a symposium *Genetic Selection: to Reduce the Impact of Infectious Diseases in Livestock*, to mark the PhD defence of Dries Hulst. Based on my own observations, I have a strong impression that some breeds are more susceptible than others. But as a scientist, I should point out we don't yet have the numbers. And solid research is needed first before we can know for sure.' ME

Other ruminants

The impact of the bluetongue virus on populations of other ruminants seems limited, based on the CBS figures. Goat numbers fell by 1.6 per cent, which is in line with the previous year. The fall in the number of cattle was even smaller: 0.7 per cent.

A botched experiment, a rejected paper: such things are soon labelled as failures in academia. As for talking about them – not done! But that is just what WUR scientist do in this column. Because failure has its uses. This time, we hear from Edwin Alblas, assistant professor in the Law Group.

Text and illustration Stijn Schreven

'A year ago I was the teacher responsible for a course for the first time. It didn't go badly but it was a hectic time. The further we got into the course, the more I was chasing my tail. The next lecture was going to be on Monday and I was having a final look through the slides on the Sunday afternoon. I thought I'd already prepared them all but it turned out I'd only made three of the 50 slides. I was working on it till three in the morning.

The next morning, on Blue Monday, I missed the bus to the campus. Along with 300 students, I squeezed onto the next one and arrived just in time to start my lecture. It went okay for the first few slides but then I suddenly started to feel very hot and nauseous. I could feel 90 pairs of eyes on me. I needed to get away. I pretended to take a phone call and left the room. I recovered in the toilets.

Amazingly, I finished that lecture, but I got stage fright again during all the subsequent lectures. After

the first few slides, I'd break out in a sweat and I was scared I'd have another panic attack. I thought I could never lecture again, and that I'd have to give up my job – whereas I really like teaching. A few nerves can be helpful, but this was dysfunctional.

I got stage fright in every lecture

I sought the help of a mentor for the University Teaching Qualification and of a coach. I made sure I incorporated short breathers for myself into my lectures, by shifting the focus to the students through a question or a video clip, for instance. I stopped making such a big thing of it: if I had an off moment and needed to take a five-minute break, I was open about it with my students. After three lectures, I got out of survival mode and I could enjoy teaching again. So what felt like failure back then, I can now see as an off day.'



Do tips lead to healthier groceries?

PhD candidate Eva Schruuff-Lim (Marketing & Consumer Behaviour) studies whether consumers in an online supermarket make healthier choices if they are shown a pop-up with more healthy alternatives.

For her experiment, Schruuff-Lim built a fictional online supermarket. Whenever a test subject put a relatively unhealthy product in their shopping basket – with Nutri-Score C, D or E – a pop-up would appear with two healthier suggestions.

'We monitored how often they accepted the tips. Afterwards, we asked them whether they had noticed the Nutri-Score labels on the products.' She compared the results with a control group who only saw the Nutri-Scores, but didn't get any suggestions.

'Getting recommendations improved the nutritional value of the shopping basket contents,' says Schruuff-Lim. 'The experimental groups and the control group were just as likely to spot the Nutri-Score.' People who know more about the Nutri-Score and find health important are more likely to use that information in their decision-making, while other shoppers still choose the less healthy options. The tips for alternatives could help people make healthier choices.

Intrusive

'Interventions like this are still in their infancy though,' says Schruuff-Lim to put her positive research results into perspective. 'Supermarkets won't be able to introduce this on a large scale

any time soon because it's complex to set up.' For example, they have to decide for each unhealthy product which products – and which brands – they will

'Supermarkets need to weigh up how intrusive they want to be. That's quite an art'

recommend as an alternative and what they will do about price differences between healthy and unhealthy products.

'They also have to look at how this fits in with their customer approach and weigh up how intrusive they want to be with their pop-ups. That's quite an art.' DV

Showcase for nature-based solutions

Wageningen Environmental Research recently published a catalogue of nature-based solutions for societal problems.

The publication doesn't just showcase the options, it also pays attention to the practical aspects of nature-based solutions. Co-editor Daan Verstand sees it as good preparation for the NL2120 Growth Fund programme, due to start soon.

There are all kinds of options for using nature to tackle key challenges facing society. Examples are shellfish banks as extra coastal protection or increasing groundwater levels to reduce CO₂ emissions. But which measure is most appropriate for which contexts? And what about the practical aspects, possible downsides and the financial picture? The catalogue provides answers to all these questions.

Policy

The catalogue ties in with the previous publication of a green vision of the Netherlands in 2120 and the associated presentation of a Dutch city in 2120, with Arnhem as concrete example. Both future scenarios assume a situation in which natural systems are the determining factor, with spatial choices and solutions that are geared to nature. This approach is gaining popularity, and there is increasing interest in nature-based solutions. The idea is that the catalogue will give people something tangible to work with. According to the introduction, the publication is aimed at policymakers. Verstand says it's not quite that simple. 'It's always tricky to decide who exactly you are compiling your publication



The icon for one of the ten categories of nature-based solutions discussed in the catalogue ♦
Photo Menno Diersmann

for. We certainly see municipalities, provincial authorities and water boards busily investigating the possibilities of nature-based solutions. But the catalogue is absolutely also intended for private parties with an interest in this topic, such as civil engineering firms and area developers.'

On a large scale

While the catalogue is based on the Dutch context, an English-language version is also being prepared (though with the same Netherlands-based content) as this approach is attracting a great deal of interest internationally too. Most of the content does not go beyond an overview, explains Verstand. 'With two pages per solution category, you can't really go into much depth. The added value is precisely the breadth, showing and categorizing all the available options.' Parties that need

more in-depth information will soon be able to get that, once the NL2120 Knowledge and Innovation Programme starts. It has been allocated 110 million euros from the National Growth Fund. It

'The added value is its breadth, showing and categorizing all the available options'

aims to develop the knowledge and insights necessary to apply nature-based solutions on a large scale. 'For example, we will monitor and quantify in detail the effects of individual nature-based solutions,' says Verstand. The programme is due to start on 1 May. ME

PhD theses **in a nutshell**

Seagrass grazers

Tropical seagrass beds are under pressure: various stress factors can disturb the balance between the seagrasses and the enormous diversity of animals that graze on them. Fee Smulders explains how climate change and fluctuations in the grazing behaviour of large sea creatures and invasive species affect the way the seagrass beds function – thereby having direct consequences for important ecosystem services provided by the beds, such as carbon sequestration. She concluded that nature conservation should not therefore focus on a single species of seagrass grazer, but on the conservation of the habitat as a whole. ^{ME}

Herbivores shape the seascape. Fee Smulders ◀ Supervisors

Marjolijn Christianen, Liesbeth Bakker and Ingrid van de Leemput

Entrepreneurial education

University students need to develop their entrepreneurial capacities. The question is how education can contribute to that. Mohammadreza Farrokhnia put together guidelines for creating higher education courses on entrepreneurship. Amongst other things, he created pedagogical models that teachers can use in brainstorming sessions with students in order to guide them through the three key stages of entrepreneurship: activation, developing ideas and evaluating ideas. ^{DV}

Fostering entrepreneurial opportunity identification capability in higher education.

Mohammadreza Farrokhnia ◀ Supervisors Harm Biemans and Omid Noroozi

Plant-based infant formula

There are numerous plant-based alternatives to milk for adults and children, but not for infants. Jiaying Tang researched whether peas, quinoa and faba beans can be used as a source of protein in infant formula. She then looked at how the structure of soya and pea protein changes on heating, and how these proteins behave in the gastrointestinal tract of infants. Whether the proteins are heated to higher or lower temperatures makes a difference to the final structure of the molecules and therefore to differences in the digestion of them. ^{DV}

Heat-induced structural modifications of plant proteins: Implications for peptide pattern and bioactivity after infant digestion. Jiaying Tang

◀ Supervisors Kasper Hettinga and Harry Wichers

THE PROPOSITION

PhD candidates explain the most thought-provoking proposition in their thesis. This time it's Matthijs van der Ham, who received his PhD on 19 January for research into a solution for electrocatalytic oxidation of sugar alcohols, saccharides and polysaccharides.



‘Adding social and environmental costs to the price of goods will speed up the formation of a sustainable industry’

‘Up to 86 per cent of the chemicals on the market are based on fossil resources, leading to unsustainable practices. It's important for us as consumers to realize that everything we produce and consume has an environmental and social impact. Despite people's interest in sustainability, we often choose cheaper, unsustainable options. Very few people are really motivated to spend more money on the sustainable option. Therefore, to promote sustainable consumption, I think that we should include the costs of environmental and social harm in the price of these unsustainable goods. In my opinion, legislation that incorporates additional costs into product prices in the form of taxes could play a crucial role. The income of these taxes can then be

used to fund research and stimulate companies to adopt cleaner alternatives. Some good examples are the Emissions Trading Scheme and the Carbon Border Adjustment Mechanism (CBAM), which allows the trade of CO₂ emissions between companies and adjusts import prices in the EU based on CO₂ emissions. This not only discourages relocation but also encourages emissions reductions, creating a robust system with no loopholes. I think we need more of this kind of legislation. It makes consumers realize that unsustainable options are more expensive in reality than we currently think, and it will motivate consumers to purchase the sustainable option.’ ^{NF}

Pictures on the Wall

Recently, there was a debate about Omnia's Hall of Fame with its male-only portraits, mainly of previous rectors. The portraits gave us a realistic reminder of our patriarchal society where women are underrepresented. The good news is that a few of the Hall of Fame portraits have been replaced with digital screens, which will tell different stories. This is an inclusive and promising gesture showing that (y)our voices are being listened to, entrenching a greater sense of belonging.

As the Hall of Fame changes, the pictures on the wall in your office, hallway or meeting

'New pictures on the wall could help relieve stress'

room might need to be changed too. Recently, I found myself in a conversation with my colleagues about pictures of a chicken and a cow hanging in a flex-meeting room in Radix. The chicken is deformed but the cow looks healthy. The argument was that the deformed chicken photo gives negative energy, while the cow gives a positive vibe. While the pictures aim to convey an intentional message, the consensus among my colleagues was a wish to have them

changed too. Recently, I found myself in a conversation with my colleagues about pictures of a chicken



Joshua Wambugu

changed. As a frequent user of the flex-meeting room, I had never thought of the negative energy from the chicken picture. There is another picture of animals in the Radix East coffee corner: a flock of sheep on the heathland of the Veluwe. That picture evokes memories of my early childhood and my chore of looking after our sheep. There are uncountable pictures on walls in every WUR building; they convey specific research- or education-related messages but can also be full of life or bring positive energy.

What feeling does that picture in your study or office space give you? Now that the majority of departments are working on plans to accommodate the growing number of staff, it is probably time to rethink and rebrand our walls. As the saying goes, 'a change is good as a rest', and new pictures on the wall might help relieve the work or study stress among WUR staff and students while working on campus. My wish for something new on the wall is the organ that is still hanging in the Aula. It would fit in well in Omnia, certainly now that the Hall of Fame has changed. I'm still hoping to hear organ music on campus again.

Joshua Wambugu (40), from Kenya, is a PhD candidate in the Marine Animal Ecology and Environmental Policy groups. He is a Social Safety Guide with the DARE Project and a member of the project's coordinating team. He loves cooking, hiking and birdwatching.

A trip for 20 to an overseas lab

PhD trips are useful or harmful

PhD trips are an important part of their programme for many PhD researchers. The trips are seen as educational and a way of bonding, and some of them go back a long time. But how useful and how ethical is it for 20 people to fly off to visit overseas laboratories? 'It's about weighing up the benefits against the environmental costs'.

Text Tanja Speek

WUR staff do a fair bit of flying to maintain their international networks. In 2018, almost a quarter of WUR's carbon footprint still came from air travel. There has been much discussion about which trips and forms of transport are really necessary – on student field trips, for instance – and the decisions reached vary widely. The same thing goes for PhD researchers within the departments and the graduate schools, who have always taken trips abroad to visit other research groups and companies. It is argued that you learn a lot from such travel, and that it broadens the mind and fosters a team spirit in the group. But can it be justified in these times? When this question was put to all the Wageningen graduate schools, we got a variety of responses.

The clearest and most limiting policy was found – unsurprisingly – at WIMEK, the graduate school for environmental and climate scientists. WIMEK does not want its PhD researchers to travel by plane. Beyond that, they point us in the direction of the individual chair groups, as do most of the graduate schools. That is where the final decision is usually made.

Local farmers

Claudius van de Vijver, head of the PE&RC (Production Ecology and Resource Conservation) graduate school, says he can't think of many examples of jointly undertaken

trips by a chair group in which the researchers travel by plane – except for the international courses run by PE&RC. They usually do entail flying: a course in Africa in order to see the local farming systems, for example. 'That helps us to really study and understand the local problems. We are an international university and we study international issues. A clear picture of the local situation is important. But of course we are judicious about it too. Flying is not always the only option, and then we look for alternatives. It is no longer standard practice to fly in a teacher from America to give a single lecture.'

There are similar discussions at WASS – the Wageningen School of Social Sciences – although here PhD trips seem to be the exceptions that prove the rule. Marieke Meesters, who got her PhD in WASS last September, raised the issue when she was invited by the Environmental Policy department to join a PhD trip. The destination was still being debated. 'Brazil was one of the

'Brazil was one of the favoured options. So I asked whether that was acceptable nowadays.'

favoured options. Even though I wasn't planning to go along, I did pose the question of whether that was acceptable nowadays. The response varied. I am quite an activist and outspoken on this kind of subject.' Her question had an impact, and the group ended up going to Sweden.

Meesters didn't miss the experience of a PhD trip. 'I did benefit a lot from writing retreats. Working on articles with other PhD researchers at a nice location in the woods near Utrecht. That is useful and good for bonding.' But she doesn't assert that flying can never be an option. 'I'm working now on a research proposal on making good use of human faeces. In Japan they have experience with good installations for

doing that. So I'm weighing up the pros and cons of flying out there, getting an expert to come here, or doing it all through online meetings. It's about the balance between the benefits and the environmental costs.'

Social cohesion

The strongest tradition of PhD trips is found at VLAG, the graduate school for the Food Sciences group. For some of the chair groups, the tradition goes back 30 years, and 'knowledge exchange and the strengthening of social cohesion are always a goal,' says Vesna Prsic of VLAG.

But this didn't stop Dolf Weijers, head of the Biochemistry group, from deciding that the concept didn't apply to his group. 'I can well understand that it's useful for some groups because the research topics of the PhD students are closely related so the international visits are relevant to many of the researchers. In our case, the topics studied by PhD researchers are quite diverse and they come under two



'The atmosphere and the relationships you build really are unique. But you can do that perfectly well in Europe.' ♦ Illustration Valerie Geelen



different graduate schools. Taking everyone on the same PhD trip would mean that half the researchers would not find it particularly useful. Instead of an expensive and time-consuming trip, I see more use in supporting the PhD researchers in making individual trips to other institutes and conferences.’ But then you forego the social benefits. ‘That’s very valuable, of course, so we offer our PhD researchers other activities, such as a joint retreat. But I don’t really have an opinion on this that applies beyond our own group,’ concludes Weijers.

The Food Quality and Design group is going on a trip this year: 26 researchers, including three senior supervisors, are off to Mexico. PhD researcher Tomer First is one of the organizers of the trip, and it will be his first trip. ‘Most PhD candidates go on just the one trip, actually, even though there is a trip every two years,’ he says. ‘And we alternate between a trip within

Europe and one further afield. Mexico is interesting because they do a lot of innovative food research there. But the research culture is very different to the one in western Europe, and that is an eye-opener for us. And accommodation is relatively affordable there.’ They will be visiting two regions of Mexico, with slightly more visits to academic labs than to companies. ‘And we will be holding a mini-conference, with posters and presentations, so that we delve into the subject matter together.’ First feels there’s a good balance between benefits and the environmental impact in this plan.

Japan or Scandinavia

PhD researchers at Microbiology will be flying this year too. They are going to Japan in October to visit research groups and companies. In this case too, the researchers are organizing the trip themselves. And in theory they only join one trip during their PhD period. ‘With the exception of the people who organize a trip,’ explains Nico Claassens, associate professor in the graduate school. Costs and time play a role there, he admits. Staff have to cover some of the costs themselves. Claassens

‘We offer our PhD researchers other social activities, such as a joint retreat’

understand the dilemma for junior researchers. ‘There are PhD researchers for whom the trip is a once-in-a-lifetime chance. Some of them take the opportunity to have a holiday after it.’ In the run-up to the next trip, the organizers investigated three options, including two European destinations, Scandinavia and the UK. After a vote, the decision was Japan. ‘You make a decision for the whole group,’ says Claassens. ‘If someone takes a different view of it, they still have to go with the majority decision.’ Claassens himself went to the United States twice as a PhD researcher. ‘Now I was invited to go along as a supervisor. I turned it down, as I see it differently now.’ But he does have positive memories of his own trips as a PhD researcher. ‘It really is a high point of your PhD period. The atmosphere and the relationships you build really are unique. But you can do that perfectly well in Europe.’ For himself, Claassen weighs up case by case whether he travels and how. ‘Two years ago I went to a conference in the US to talk about my work. But for other conferences last year I decided just to give a talk online.’ So how should chair groups deal with this issue in future? ‘Maybe we should establish guidelines on how to make a decision. But what you would really like is for PhD researchers to start thinking differently about this. I have noticed that it’s already become easier to put it up for discussion.’ ■

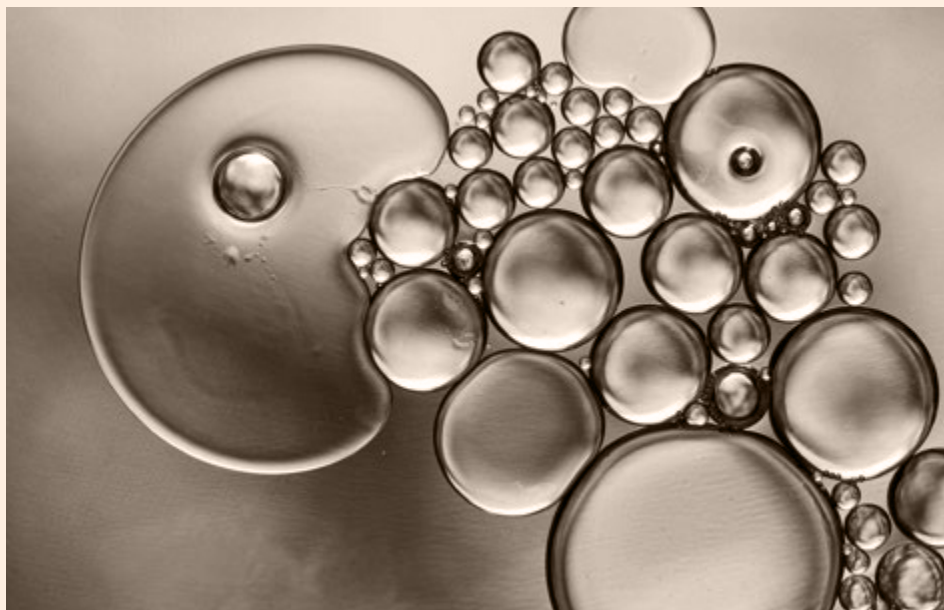
‘Flying in a teacher from America to give a single lecture is no longer standard practice’



Illustration Valerie Geelen

'DANCING' OIL DROPLETS

MAY BE BUILDING BLOCK FOR SYNTHETIC CELLS



Oil droplets on water • Photo Shutterstock

In water, minuscule oil droplets behave like a school of fish, discovered Master's student Noor Appelman during her thesis research. She published her discovery in a scientific journal.

If you put droplets of oil in water, they spontaneously start 'dancing'. This was discovered by MSc student Noor Appelman (Molecular Life Sciences) and assistant professor of Physical Chemistry and Soft Matter Siddharth Deshpande. 'Together, the droplets do something very different than you would expect based on a single droplet,' says Deshpande. 'It is what is called an emergent phenomenon. We normally see this in complex biological systems like a swarm of starlings or a school of fish, but our research shows it can also occur in simple, non-living systems.' This kind of emergent behaviour of droplets was already familiar in non-living systems with three ingredients, but Appelman and Deshpande now succeeded with just two: water and oil, in this case decanol. They recently published their results with two other

co-authors in the journal *Advanced Materials Interfaces*. Appelman discovered the droplet dance by chance during an experiment for her Master's thesis. 'Through the microscope, I suddenly saw that drops of decanol rose to the surface one by one, and pushed the other droplets away.' The oil droplets float just underwater because they are very small.

'THE WAY THE DROPLETS SEPARATE AND COME BACK TOGETHER LOOKS LIKE A DANCE'

Once in a while, an oil droplet breaks through the water surface, and a thin layer of oil quickly spreads out from it. This happens due to the Marangoni effect, a physical phenomenon known

from tears of wine. The outward flow pulls the underlying water, and the other oil droplets along with it, which looks as though one drop pushes the rest away. Simultaneously, the layer of oil evaporates, drawing more oil out of the droplet and thus keeping up the flow. At some point, the oil layer disappears, and all the droplets move towards each other. When the next droplet breaks the surface, the dance begins all over again.

Anyone wanting to try this at home will probably be disappointed. It won't work with olive oil. 'Olive oil consists of various long-chain fatty acids, so the oil evaporates much more slowly,' Deshpande explains. 'Moreover, the droplets must be smaller than one-tenth of a millimetre in diameter.' The researchers only managed to produce such small droplets in the lab using specialized equipment.

Synthetic cell

According to Deshpande, the discovery represents a possible building block for a synthetic – human-made – cell. 'I want to build tiny vesicles that move like living cells. A cell can sense its environment and move in response. In a way, these oil droplets can do that too.' The next step is to build the oil droplets into the outside shell of the vesicles. 'Maybe we can attach the oil droplet to the outside like a pouch so that the vesicle can respond to its environment and other vesicles.' ss

PICTURE



DITCH

Do we need a ditch or not? Two members of the Wageningen Student Farm (WSF) inspect the muddy soil that will soon be put to use again growing vegetables. This site on the edge of campus, where ‘all your dreams can come true’ according to field supervisor Kevin Pereira, is used to grow fungi on coffee grounds from Aurora, to keep bees, to hold workshops on ethnobotany, and for weekly communal meals. If you too have a wild idea or simply want to know more, feel free to come along on a Thursday evening. [CJ](#)

Photo Guy Ackermans



Tracking down the cause of laminitis with organoids

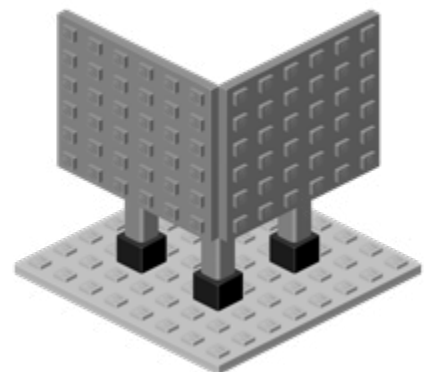
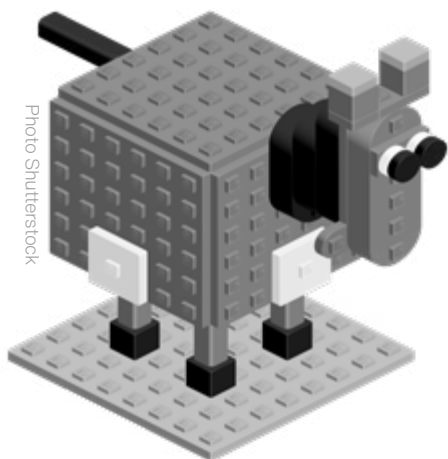
HORSE'S GUTS
PROJECT

In a joint research project on the digestive system of horses, the Animal Sciences group in Wageningen and the Utrecht University (UU) faculty of Veterinary Science hope to expose the precise triggers in the gastrointestinal tract for laminitis, a painful inflammatory response that leads to many horses and ponies being euthanized. Text Marieke Enter

A lot can go wrong inside a horse's digestive tract. Serious conditions such as colic (a collective term for abdominal pain in horses) and various forms of laminitis (also called founder, see inset) originate in this part of the body. But it is not easy to establish exactly what goes wrong. This is partly due to anatomy: given that a horse has as much as 20 metres of small intestine, about 9 metres

of large intestine and an appendix that holds about 35 litres, it is hard to pinpoint the problem. Post-mortem studies can only shed limited light on the subject. 'With these conditions, it is precisely the kinetics, the speed at which nutrients are absorbed or broken down, that is the crucial factor. There are certain chain reactions at work that you can't analyse once the animal is dead,' explains Wouter Hendriks, professor of Animal Nutrition at both WUR and UU. He is leading the project, which is called Bacin2Liver. Bacin2Liver looks for answers not in the horse's body but in the lab: it is developing a platform that simulates the specific digestive system of the horse, both the digestion in the small intestine and the fermentation in the large intestine and appendix. Hendriks: 'We look at the kinetics taking place, as well as which metabolites the gut bacteria manufacture and how they affect the liver-intestinal system. We do

'THE PROJECT WILL CONTRIBUTE TO A FUTURE FREE OF ANIMAL TESTING'



'PROJECTS ABOUT HORSES ARE ALWAYS VERY POPULAR'

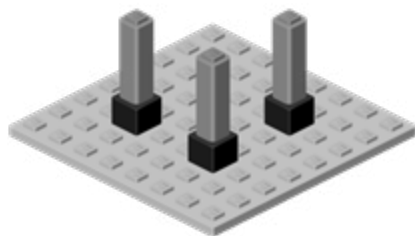
this using organoids, stem cells from horses that we have cultured into intestinal or liver cell systems. We study how they react if the metabolism changes and toxins are formed. So we are going to generate a great deal of knowledge about detailed digestive processes.' The method being applied, the 'in vitro gas production technique', is already being used in digestive system research on pigs, dogs and cats.

Sugar metabolism

We know that In horses, fructans and starch can play a dubious role in digestion, sometimes disrupting the fermentation process in the large intestine. It has also been established that some breeds of horse and pony are more vulnerable to laminitis than others – and the same breeds are more prone to diabetes. Hendriks: 'From previous research, we already know that something goes wrong with the sugar metabolism. But exactly what sets off the inflammatory reaction of laminitis is still a black box. The organoids should tell us exactly what happens to the sugar metabolism. With our platform we shall soon be able to study precisely how fast or slowly particular substances get broken down, how well or badly digestion is going, and how they affect fermentation. All these things can be indicators for precisely how laminitis comes about,' he explains.

Hendriks expects that the Wageningen/Utrecht team will succeed in discovering the conditions under which particular substances are formed in the intestines which cause the inflammatory response of laminitis. 'We've already got some ideas about it: there is excessive growth of certain micro-organisms that make specific toxins when the pH level plummets due to fermentation

in the large intestine. The key question is: which toxins are they, then? If we can figure that out using the organoids, and the conditions under which it happens, then we'll also be able to work out how to prevent it.' Besides solving the laminitis puzzle, the Wageningen/Utrecht project also aims to create a platform that researchers can eventually build on to simulate other processes in horses, explains Hendriks. 'This project will contribute to a future free of animal testing.' There isn't a firmly defined division of tasks, he says. 'The organoids are somewhat more Utrecht's territory – WUR can make them too, but Utrecht has more experience with specific equine organoids. And in vitro digestion is more up Wageningen's street. But we're not out to be competitive: both universities will do what it takes to set up this platform.' By the same token, there is no question of secrecy towards the outside world. 'We're making everything public, right down to the specifications of the organoids and the conditions of the tests. So that other researchers can also benefit from the knowledge and insights we've gained.' The four-year project is getting half a million euros from the Dutch Research Council (NWO). And the Dutch Horse Council and several feed producers are chipping in to the tune of 100,000 euros. At least one PhD position will be funded from the project budget, and Hendriks also hopes to be able to attract a PhD candidate who already has a grant. He expects to be able to offer students opportunities too. 'Research projects about horses and pets are always very popular. You don't normally get very many of them in Wageningen, but this project offers plenty of scope for research projects for Master's students.' ■



Hoof problems

Laminitis is also known as founder (which means to stumble or go lame.) It is an inflammatory response which damages the connective tissue – laminae – between the hoof wall and the internal structure.

This tissue acts like Velcro to keep the hoof wall and the internal structure together. In severe cases, they separate and a small bone inside the hoof (the coffin or pedal bone) can tilt and even perforate the hoof sole. In that case, the animal can rarely be saved. Even mild cases of laminitis are very painful: horses can barely walk and adopt a distinctive posture.

European Parliament votes for gene-edited crops

Plant scientists follow the debate with frustration

The European Parliament has voted to authorize a new form of gene-edited crop. Plant scientists in this field at WUR are following the developments closely. Their frustration with this long-running discussion and ignorant MEPs is palpable. 'He didn't do his homework properly'. Text Tanja Speek

Four young plant scientists have come together in a room in Radix. They are avidly following a debate in the European Parliament about the future of gene-edited crops in Europe.

Three of the four scientists present have joined GeneSprout, a group of young researchers who campaign for better argumentation and legislation surrounding the use of genetic tools in crop breeding. The group was launched in 2018, after the European Court of Justice tightened up the rules for gene-edited crops, explains co-founder William de Martines. 'What's the point of our work if the crops we breed and the techniques we refine can't be used anyway?'

Really touched

Many young plant scientists in Europe shared this sentiment and GeneSprout quickly grew into a Europe-wide group. 'As many as 37 Nobel laureates and more than 1500 scientists support the proposal to change the law,' says someone in Strasbourg. 'You see, there comes our message again,' cheers Patricija Gran. GeneSprout helped launch a petition

that was signed by many scientists from the Netherlands, the rest of Europe and other parts of the world. 'We GeneSprout members were truly touched to see how groups from all over Europe shared our initiative, through *Give Genes a Chance*, for instance.' (See photo.)

So what was this heated debate all about? New techniques such as CRISPR-Cas have made it possible to make small, precisely targeted changes to the DNA of crops. According to the proponents of this technique, that is no different to making the kinds of changes brought about by traditional breeding techniques. The EU calls this category

'What's the point of our work if the crops we breed aren't used?'

NGT1 crops (New Genomic Techniques) to distinguish them from the previous generation of genetically modified crops, with bigger changes to their DNA and often with DNA that was foreign to the species. The current proposal is about NGT1 crops. Wageningen has been involved in the discussion about rules on their use for decades.

Patents

Ania Lukasiewicz, who has been working at Plant Breeding since July and is not a member of GeneSprout, is following the discussion as part of her job. She has an assignment to monitor the progress and the implications of this EU legislation. One of her tasks is to work out the pros and cons of the patent agreements being incorporated into the new law. Patents on crops give the big seed companies all the power, many



Groups of young scientists from all over Europe raised their voices on the day of the debate in the European Parliament with the slogan *Give Genes a Chance*. GeneSprout was one of the instigators behind a petition with the same name. ♦ Photo GeneSprout

Strasbourg politicians argue. ‘But an amendment has been added that rules out patents on such gene editing,’ says Gran with irritation.

Among plant scientists at WUR and elsewhere, there is a broad consensus that this form of plant-breeding is an important resource and is also safe for humans and the environment. But to join GeneSprout is a bridge too far for most researchers. ‘Not everyone feels comfortable in a more activist role,’ says De Martines. ‘People say: shouldn’t you take a more neutral stance as a scientist? But hey, in the real world, nobody is completely objective.’ The potential link with the interests of the big seed companies is another sore point. A lot of researchers are unhappy about that. And the accusation that they are lobbying? ‘What do you call lobbying? If you bring scientific knowledge to a societal issue, is that lobbying?’ adds Miguel Ramirez, the third member of GeneSprout. No one answers.

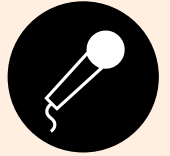
Homework

‘If we used it in people, it would be illegal,’ announces an MEP on the screen from Strasbourg. ‘No it wouldn’t,’ responds

Gran, amazed. ‘Last week it was all over the news how gene therapy using CRISPR-Cas has cured patients with severe swelling after a single treatment. This politician didn’t do his homework properly.’ The ignorance shown by many of the MEPs during this debate is a source of frequent irritation among the four watching scientists. What’s more, there is not much question of a real debate: MEPs take it in turns to present their standpoints in one minute. Rarely do those present make use of a blue card in order to respond directly to a statement. The Greens and the left-wing parties are the main opponents of this proposal to allow crops created through this new, milder form of genetic editing on the market, while the Christian democrats and more right-wing parties are in favour. And has the long-running gene technology debate also influenced how the four plant scientists vote? Don’t researchers usually vote for the Left? They nod in agreement. ‘This has made me shift towards the centre

in my voting. The Left does a lot of good things when it comes to environmental and climate issues, but I am deeply disappointed that they refuse to budge on this,’ explains De Martines.

The voting is the day after the debate and a majority in the Parliament votes to authorize NGT1 crops. The members of GeneSprout are quite emotional. ‘We feel really relieved,’ admits Gran. ‘We worked so hard for it.’ Many of their immediate colleagues are happy too. ‘Especially colleagues who have been following the European proposal,’ adds Ramirez. ‘But this is not the end of the line,’ says Lukaszewicz. ‘The next steps are the EU’s council of ministers of agriculture and then the fine-tuning between the council, the Commission and the Parliament. This is a big step but it remains to be seen how things develop and which details are changed.’ ■



'ChatGPT helps me study'

Artificial Intelligence (AI) is going to change education drastically, there is no doubt about that. But are students already working with AI tools like ChatGPT? And if so, what do they use them for?

Text Mario Martens and Luuk Zegers • Illustration Shutterstock



Julia van Holst (21),
MSc student of Biology

'I don't use ChatGPT when I'm studying but I did use it for programming during my thesis research. I don't use it for anything else, like writing. There's always a risk that ChatGPT then stores your research and results somewhere in the cloud, and I don't like that idea. Besides, everyone can write, you don't need ChatGPT for that.' MM



Alessandro Cigliano (23),
MSc student of Environmental Sciences

'I don't use ChatGPT because I don't fully understand it yet. Maybe I'll take a look at how it works one day, but I am also wary of incorrect information that can sometimes appear in AI-generated texts. If I do decide to use it, I want ChatGPT to tell me which sources were used to arrive at the answers.' MM



Machteld van Kempen (22),
MSc student of Development Studies

'I mainly use AI to help with rephrasing sentences and summarizing long texts. If I rewrite my sentences using AI, they flow better and more logically. So I don't get AI to take over all the writing for me.

An AI tool like ChatGPT can be useful outside my studies too. I sometimes use it to get inspiration for a description in an Instagram post. I usually change the text quite a bit, because it often isn't quite what I'm looking for. But it helps you get started.' MM



Marco Libanore (24), MSc student of Biotechnology

‘If you use AI as a tool, it can be a great assistant and enhance your learning experience. One thing I use ChatGPT for is data gathering, for example to find relevant papers about a certain protein for my thesis. Also, I use other AI tools for image creation. When you need an image of a cell, specific proteins or DNA, and you want to highlight certain things in this image, it can be difficult to find good images on the internet. With a little help from AI, you can create these yourself. ‘To create a good image, you have to give the AI tool clear prompts. I have

found a good workflow to do this effectively: I start out with an idea in my head and put that into words. Then I ask ChatGPT to create clear prompts for that idea to feed to an AI image generator. Because ChatGPT understands other AI tools better than I do, it helps me get my message across to the image generator. This way, you can create images that almost perfectly meet your needs.’ LZ



Querine van Rijn (21), BSc student of Plant Sciences

‘If I have written sentences that don’t flow nicely, I use ChatGPT to rewrite the sentences in a logical order. And I sometimes ask ChatGPT to summarize articles or explain concepts that I don’t understand. Then you might say, “Explain X in simple terms” or “Improve the structure of the following sentences”. It’s handy for finding inspiration for things like reports, too.’ MM



‘I mainly use ChatGPT to get inspiration, but but I also used it once to do a homework assignment. I gave ChatGPT a number of specific sources and asked it to write a paper based on them. You do then have to nudge it in the right direction, otherwise it won’t be of much use as the answers remain rather superficial. So I included the instruction that I wanted the conclusion to go in a specific direction. And it produced quite a usable answer. Then I did edit the text a little so that it became a bit more my own writing.’ LZ

Student’s name known to the editors.



Lieke Muijsert (19), BSc student of Landscape Architecture and Spatial Planning

‘I have occasionally used ChatGPT during a brainstorming session to find a theme for our study association’s gala. In the end we went for an idea we had thought up ourselves, but it can still be useful as a source of inspiration. Beyond that, I don’t have much experience and I haven’t used it yet in my studies. There’s a lot of discussion about AI on my degree programme. For example, on a course about drawing techniques. On that course, we learn to use programmes like Photoshop and Illustrator, but if AI can generate images, perhaps you won’t need any Photoshop skills at all anymore. Then the discussion went a step further, and we talked about whether AI could take over our profession – landscape architecture – entirely in future, or whether you will always need some human input. Personally, I’m not very worried about it: you still need a creative mind and knowledge about landscapes. You can then use AI as an aid to that creativity. But I don’t know for certain of course.’ LZ

New recyclable plastic thanks to physical forces

For the past three years, PhD candidate Sophie van Lange has been dedicated to one clear goal: producing plastic that is both hard and sustainable. The plastics we use today are either recyclable or robust – not both. She threw some physics into the chemistry-based quest, which enabled her to develop a new kind of plastic that is both hard and recyclable: compleximers.

Text Nicole van 't Wout Hofland

Ironically, the process doesn't seem very complex at first sight. It is based on two separate powders, one white and one yellow. In the Physical Chemistry and Soft Matter laboratory, Van Lange dissolves these powders and combines the two solutions. Slowly but surely, flakes of plastic form, and after a series of washing and drying steps, a yellow powder remains. She pours this carefully into a mould and places it in a hot press on a hot plate. She then pulls on a large handle to press the powder together under high pressure and heat. And there it is, hot off the press: a piece of compleximer. It is hard and yet easy to reshape.

Health food store

Let's rewind 10 years, to a Friday evening in a health food store on a narrow street in the little town of Baarn. Shelves loaded with organic products and a fruit and vegetables section with bell peppers, cucumbers, broccoli and

carrots. No plastic packaging in sight. Sophie van Lange, 16 at the time, is working on the checkout, taking a 10 euro note and handing back change. She doesn't realize it yet, but a seed is being sown in her mind. Doing this side job is making her increasingly aware of sustainability, an ethical relationship with nature, and the functional uses of plastic.

Two years later, her interest in sustainability takes her to Wageningen University. There, and on her Master's programme in Eindhoven, she learns how much plastic we actually produce: over 400 million tons a year. 'I saw how much gets lost in that process,' says Van Lange. A machine pours plastic into a mould, but the bits at the end have to be cut off and usually get binned. What is more, only a small proportion of all the plastic gets recycled. Nevertheless, Van Lange doesn't see plastic as the enemy. 'We can't do without it: it's in the shoes I'm wearing and in my glasses,' she

says, pointing to her pink spectacles frame. 'But it would be great if we could process all plastics sustainably.'

Physical forces

After a three-year quest, here it is: Van Lange holds up a rectangular piece of yellow plastic two by a half centimetre in size. This plastic is hard and yet easy to recycle. At the molecular level, traditional hard plastics consist of long chains, linked together with chemical crosslinks. That makes them strong but also practically impossible to recycle, and therefore not sustainable. So Van Lange took a new approach: no chemical crosslinks but physical forces of attraction between the long chains. 'I was obsessed with the idea of connecting the building blocks in an alternative way, and it worked,' says the PhD candidate.

Van Lange and her colleagues gave one half of the chains, the building blocks of plastic, a positive charge, and the other half a negative one. If the two

are brought together in the right way, they attract each other like magnets. The chains stay in place and you get a strong, hard plastic. But as soon as you heat it, the force of the attraction weakens and the plastic becomes malleable. ‘Then you can push it into a new shape or fill a hole in the plastic,’ says Van Lange.

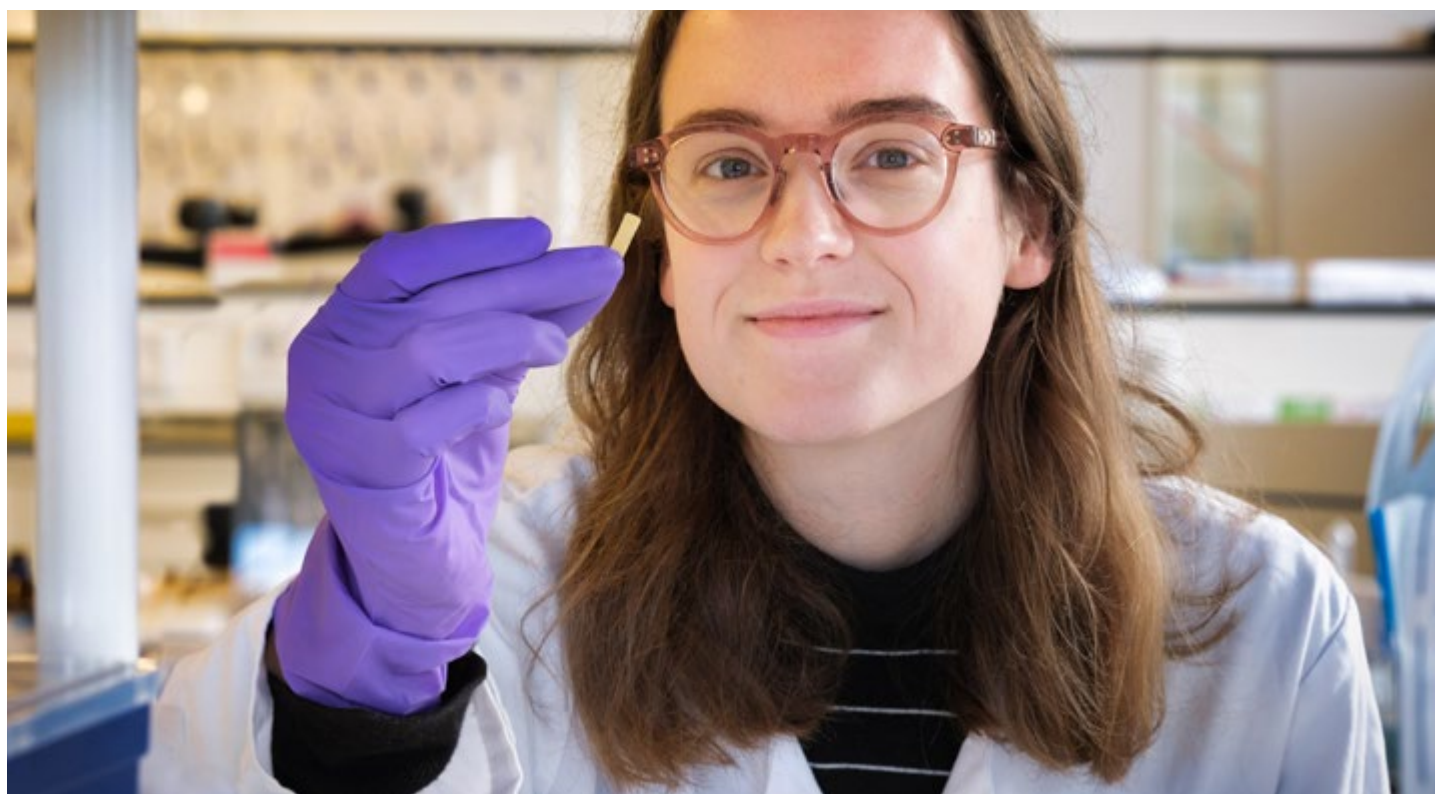
It makes quite a difference how strong the attraction is between the molecular chains. Positive and negative particles naturally attract each other. When that happens in plastic, the result is superhard but also brittle material, discovered Van Lange. So she had to weaken the charge, and she managed that using a kind of molecular umbrella that partially shielded the charge in the plastic. ‘Like that we achieved a level of attraction that means the

plastic doesn’t break easily and yet is easy to reshape using heat.’ Those little umbrellas are also water-resistant, so the plastic doesn’t weaken if it gets wet. ‘Charged material is nearly always water-sensitive, so it’s really surprising that we managed to do that.’

The new plastic is not completely ready. ‘We have demonstrated that the concept of physical forces in plastic works, but now we need to find ways of making the material a bit more pliable,’ says the PhD researcher. She will devote some time to that during the final months of her research. She hopes to achieve

it by reducing the total charge in the material, thus reducing the force of attraction. She is also considering using a different kind of building block for the plastic. ‘At present we are using polystyrene, which is quite stiff. If we switch to a more flexible variant, we might get a more pliable plastic.’ Although the new plastic is not ready for marketing yet, Van Lange hopes her work will already start to inspire her fellow researchers. It has shown that out-of-the-box thinking can produce really novel materials. ‘I’d like to motivate other scientists to take a new look at other materials and their molecules too,’ says Van Lange. ■

‘It would be great if we could process all plastics sustainably’



Sophie van Lange, a PhD candidate at Physical Chemistry and Soft Matter: ‘We have demonstrated that the concept of physical forces in plastic works, but now we need to find ways of making the material a bit more pliable.’ ♦ Photo Guy Ackermans

‘The most important thing I’ve learned is to share emotions’

BAS CLAMBERED OUT OF A DEEP, DARK VALLEY

Master’s student of Biology Bas Hovius has published a volume of poetry that he wrote during the darkest days of his life. For him, the poems were a way of expressing his depressed and suicidal thoughts, even though he didn’t show them to anyone at the time. He no longer feels depressed and lonely like he did then. He hopes his poems can be helpful, even if it’s just for one person.



Text Marieke Enter

I hated school, I didn’t believe in what I was doing there, and even less in what was to come after it: university, a job.

And I was extremely worried about everything that was wrong in the world. Stress turned into panic and I slid further and further into a negative spiral. The negativity in my mind got so big that life seemed entirely pointless.

The suicidal thoughts started around my fifth year at secondary school. They got worse and worse. It became normal for me to feel dreadful all the time, to have sleepless nights, and to ruminate endlessly about what I’d done wrong and what I would do wrong in the future. I was insecure about everything: who I was, what I wanted, what I was capable of, what others thought of me, what was happening in the world – absolutely everything. It was exhausting to be dwelling on all that all the time.

I had that crushing feeling continuously, but it was invisible to

other people: I didn’t talk to anyone about it. I thought: this is my problem, and I’ve got to solve it myself. I can’t burden anyone else with it, can I? And that feeling got stronger the deeper my depression got. I mean, how can you tell your parents you don’t want to live any longer?

I kept up a façade, kept smiling. No one realized I was having such a hard time. The lowest point came after I had started on my Bachelor’s. There was a girl I’d had a crush on for a long time. In my mind, she was the one who could solve it all. If only I could be with her, it would all come right. But it didn’t

Do you need help?

- ◆ If you are having suicidal thoughts, talk about it. At 113 Suicide Prevention there is somebody available 24/7. Ring 0800-0113 or chat on 113.nl. You’ll find more options for help on that website. You don’t need to identify yourself if you don’t want to.
- ◆ Are you worried about a course mate, student or colleague? There are various things you can do for someone who’s thinking about suicide. You can get help from 113 Suicide Prevention. There’s an overview of options on www.113.nl/maak-je-je-zorgen-om-iemand. Or phone 0800-0113.
- ◆ There are people at WUR who can help too. Students can find out the options by searching wur.nl for ‘student guidance’; staff can access support through the corporate social worker (there’s an overview on the intranet).



'I gradually learned to express myself better. I noticed that people actually only want to help. Of course it was hard for them to hear that I was so down, but it was much worse and scarier in my mind than in reality.' ♦ Photos Duncan de Fey

'COMING OUT OF IT INVOLVED UPS AND DOWNS: YOU CAN'T UNLEARN NEGATIVE THINKING JUST LIKE THAT'

come right. I was broken. For me, she was like the key to the future and now that was out of reach. I went into a kind of survival mode for months. I did what I had to do to get the credits for my courses, but I didn't sleep a wink anymore and I felt negative all the time. One evening in the October of my second year, I opened up to my parents and told them I didn't want to go on living. That was very tough. I had struggled for so long to keep that terrible feeling to myself! I was annoyed with myself for bringing other people into it; I felt ashamed. Looking back on it now, it was a very good thing

that I shared it then. But at the time, it felt like an admission of weakness, a failure. A sense of relief only came much later.

My parents consulted the GP. While I was waiting to start therapy, I began to talk a bit with a counsellor at the GP's surgery. I had realized by now that I had to do something. It did provide some relief. But the therapy that followed ended in disappointment. All sorts of things were tried, but nothing worked for me. I just sank deeper and deeper into despair. At the

end of the summer vacation, with the new academic year about to begin, I thanked my therapist for everything he'd done for me and said goodbye. I knew what I was going to do that Sunday: I couldn't go on living any longer.

He held me back and said he couldn't let me go like that. After lots of phone calls, I ended up at the crisis service at a different mental health centre. In retrospect, that was an important





turning point. There I was, on my own in a room while my parents sat talking to the health professionals. I thought: I've got to get out of here. This only makes things worse, being so cut off from the people who are the reason I'm still kind of trying. It was as though my parents and the health workers thought the same, because less than an hour later I was allowed to go home with my parents after all. That was the start of a new phase, with a new therapist and a new psychiatrist. They said: 'We're not going to give you a label or draw up a treatment plan – we'll look at what you want and need.' That turned out to be a turning point for me.

When I was at the crisis service, I realized what I wanted: to be able to be here a bit longer for my family – my brother, my sisters, my parents. For them I wanted to keep going a while longer, to be 'normal' and not to mess things up. Realizing that gave me just enough energy to give it a serious try.

Not to try and get rid of my negative thoughts and horrible feelings, but to learn to deal with them. That certainly didn't go well from the start; I did an awful lot of crying. But I had really kind of flicked a switch: I'm going to give this my best shot, I thought. Then I talked about my situation at the uni for

the first time. I agreed with my study advisor to take only the morning course in periods 1 and 2, to give me a bit of headspace.

I had started writing poetry six months before that, to calm the storm of thoughts in my head a little bit. I didn't dare show the poems to anyone yet, because that would make my terrible feelings so 'real'. I gradually learned to express myself better, to share feelings, and to realize that I hadn't been nearly as much of a burden to other people as I had imagined. I noticed that people actually only want to help. Of course it was hard for them to hear that I had



'I WANTED TO KEEP GOING A BIT LONGER, AND BE "NORMAL" FOR MY FAMILY'

Iedere vogel zingt zijn lied

Iedere ochtend zijn ze te horen

Ze fluiten, ze zingen en samen vormen

Ze een groepje van 6, 7 en zelfs 8

Zingen de mooiste liedjes, zo warm en zacht

Zomaar een ochtend, zaten ze met 7

Ze vragen zich af, waar is 8 toch gebleven

Zo blijkt, hij ligt nog op het nest

En om eerlijk te zijn, is het met 8 verre van best

Hij zegt,

Ik vlieg zo hoog, ik kijk als enige over de daken heen

En ik zie duisternis daar waar de zon eerst scheen

Waarom fluiten, waarom zingen

Als ik die zon nooit meer terug zal winnen

Iedere vogel zingt zijn lied

Maar ik, ik zing het mijne liever niet

Getroffen door geluk of ongeluk, mijn leven?
Heb mijn tijd hier al uitgezeten, ook al was
het maar voor even
Het idee van de toekomst maakt mij zeker wel
blij
Ook al is het er één waarin jullie het moeten
doen zonder mij
Nacht in nacht uit lig ik uren wakker
Malend over de toekomst, het verleden en nu,
die arme stakker
Ik houd geen slaap meer over of er is alweer
een nieuwe dag
Een nieuwe verplichting
Een oude tegenzin
En dezelfde verdrietige lach

De laatste reizen van mijn ongelukkige leven
De eerste reizen van mijn gelukkige leven
Ik kan het nu haast niet geloven, dat ik het bijna
had opgegeven
Maar ik deed het niet, ik bleef strijden
En het is er echt, het is een tunnel met licht aan
het einde
En licht. Oh zoveel licht
Zoveel als je zelf wil als je beseft dat die
mogelijkheid voor je ligt
De mogelijkheid om je ongelukkige leven te
beëindigen
En het gelukkige leven te omarmen, zonder jezelf
of anderen te pijnigen
Het hoeft niet, ik weet zeker dat je het kan
Nog 1 dagje proberen om weer net iets verder te
komen; dus wat dacht je ervan?

Je weet nu hoe ver ik was, mijn donkerste
gedachten liggen open en bloot
Ik geloof in je; als ik het kan dan kan jij het ook

Three poems from Bas's book; each poem has a different layout and font

been so down, but that was much worse and scarier in my mind than in reality. A metaphor used by my psychiatrist helped me enormously. In my mind there was a huge mountain of gloom and negative thoughts. However hard I tried, I couldn't shift that mountain. The psychiatrist taught me to see it another way. That mountain is not one huge mass. It's made up of lots of little bits. If you get rid of one little piece at a time, that helps to reduce the mountain. That has become my philosophy in life: every little helps.

Coming out of it involved ups and downs: you can't unlearn negative thinking just like that. A lot had to happen before I realized that it was allowed, it is okay not to give your negative thoughts your full attention. I still tend to worry about the big problems in the world that I can never solve on my own. But I feel that I'm not facing them alone. Nowadays I feel

genuinely happy, even though it was a long and difficult road to get here. The most important thing I've learned is to share emotions. It really makes a big difference not to go on carrying them around with you all alone.' ■

Fleur's fund

With his volume of poetry (in Dutch), Bas hopes to make it easier to talk about complex mental health problems. The profits will go to the Fleur Encouragement Prize, named after a family friend of Bas's age who battled with the same feelings as he did – but who didn't survive. Her family established the Encouragement Prize to support young scientists doing research on healthcare for complex mental health problems. The volume can be ordered through hetsolitaireintellect.nl. There's a taster at the top of this page.



Limelight



Not much culture in Wageningen? Not true! If you keep an eye out, you will notice people all around you are making music, giving poetry readings, taking photographs or designing clothes. In this feature *Resource* puts WUR's creatives in the limelight.

This time: Anne Sophie (22), Animal Sciences Bachelor's student.

Text Steven Snijders

FRI
01-03-2024

Performances at 18:30 and 21:00

Generaal Foulkesweg 1B,
6703 BG Wageningen

Tickets 5 or 7 euros



Ceres performs *Belle and the Pig*

Animal Sciences Bachelor's student Anne Sophie Schoonbeek (22) is one of the two directors of *Belle and the Pig*, a production by student society Ceres's theatrical club. The last performances will be on 1 March. The title *Belle and the Pig* is a reference to the Disney classic *Beauty and the Beast*.

The story has been adapted to become a version set in student life. Anne Sophie: 'There's self-mockery in the play and you see all the different types you come across in a student society. All the characters in the story are Wageningen students.' In the original story, a handsome prince is cursed and turned into a beast. To break the curse and become a prince again, the beast has to fall in love with someone and win her heart. But there is a rival for

Belle, the pretty woman the Beast loves: handsome Gaston also wants to marry her. 'In our version, Belle is a first-year at the AID,' says Anne Sophie. 'She is the prettiest girl among the AID first-years. The handsome prince is the chair of the Ceres board. His curse is that Ceres can't take on any more new members until the chair falls in love with a non-member and his love is returned. The bad guy Gaston becomes three board members of Biotechnology study association CODON in our version.'

'It all started with a film evening because we wanted to see *Beauty and the Beast*. Then members of the theatre club started writing. Our task as directors was to bring the story to life. We got some really fun scenes with the help of the actors. It was incredibly enjoyable working with the actors.' The first performances had already been when this magazine went to press. 'But we will also be performing tomorrow, 1 March. I hereby invite all readers to come along and see the show!'



The two directors of the play *Belle and the Pig*: Floor Huijgens (left) and Anne Sophie Schoonbeek • Photo Stijn Timmer

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WUR from within: straight, sharp, transparent



Colophon

Resource is the independent medium for students and staff at Wageningen University & Research. *Resource* reports and interprets the news and gives the context. New articles are posted daily on resource-online.nl. The magazine is published every fortnight on Thursday.

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Editorial staff Willem Andrée (editor-in-chief), Helene Seevinck (managing editor), Roelof Kleis (editor), Luuk Zegers (editor), Marieke Enter (editor), Coretta Jongeling (online coordinator), Dominique Vrouwenfelder (editor), Thea Kuijpers (secretariat).

Translations Clare McGregor, Meira van der Spa, Clare Wilkinson

Design Alfred Heikamp, Larissa Mulder

Overall design Marinka Reuten

Illustration cover Valerie Geelen

Printing Tuijtel, Werkendam

Subscription A subscription to the magazine for one academic year costs 59 euros (135 euros if abroad). Cancellations before 1 August.

ISSN 1389-7756

Publisher Corporate Communications & Marketing,
Wageningen University & Research



University Fund
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'Of course it's ridiculous that Ede got mentioned first for all those years,' says councillor Goris • Photo Resource



STATION GETS NEW NAME

The opening of the revamped train station in Ede was not just cause for celebration for Ede municipality; Wageningen municipality was uncorking the champagne too.

Councillor Jan Goris doesn't want to brag but he has been going round with a smile on his face for days. 'Although I take this victory very seriously,' he says while hanging up a sign in his office that says in those unmistakeable NS letters: 'Wageningen-Ede'. 'Of course it's ridiculous that Ede got mentioned first for all those years. Every time I was on that train and the driver called out "Ede-Wageningen station", I would shudder in disgust. Ede *calls* itself a city, but Wageningen *is* one. With our WUR campus we are actually a global city, but we have been denied

our own station for all those years. It would naturally have been even better if we could have scrapped the "Ede" bit completely. I asked my lawyers to investigate this, but it wasn't feasible.'

'Ede will eventually realize they stand to benefit too'

They worked for years on this top-secret assignment, finally getting the result they wanted: the court ordered NS to switch the names. The icy relations between the two municipalities caused by this court case won't last, thinks the councillor.

Goris then instructed them to look at switching the two city names.

'They'll come round. Ede will eventually realize they stand to benefit too. Now they can take advantage for free of our name recognition and the international allure of WUR. Unbelievable they didn't come up with the idea themselves, really.' WUR does not wish to comment on the name change. The spokesperson tells us, 'We take a neutral position regarding NS station names. Although we agree this is much more logical for our international students and staff.' Incidentally, some Wageningen residents – including WUR students and staff – are far from happy with the name change. A petition is circulating to take 'Wageningen' off the signs completely and rename the station 'Ede South'.