WUR from within: straight, sharp, transparent

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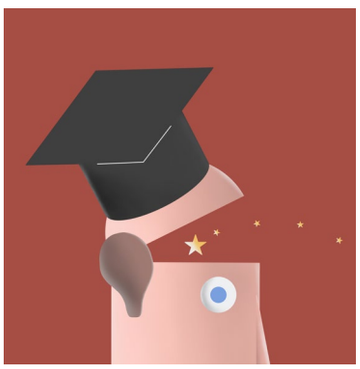

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FOREWORD

Brrr...

Working at home has its pros and cons, as we all know by now. I for one live in an old, draughty house with gas heaters and today the gas technician is coming to do the annual maintenance check. So we had to switch off the heaters yesterday and now we’re working at the kitchen table wrapped in sleeping bags and wearing woolly hats. But it could be worse. A lot of students have 12 square metres in which to sleep, study and relax. And it’s been that way for months. You’ll find tips on how to stay sane on page 18.
Although the coronavirus has caused much distress, it has led to the creation of an interesting part-time job too. We talked to two students who are not working at home but at a Covid-19 testing station (page 14). Also in this number: from top athlete to researcher. Competitive swimmer Rieneke Terink used to train for 25 hours a week and is now doing research on sport and exercise (page 24). And: we have not yet heard the last of the subject of WUR collaboration with China (page 26). Nor of the subject of the heating in my house, incidentally. Turns out the gas technician’s got Covid and isn’t coming. We’ll have another cold day in two weeks’ time then.

Coretta Jongeling
Online and social media editor

AURORA

Stay away from the campus for six months and when you get back, all of a sudden there's a giant structure that wasn't there before: the third education building. Please meet Aurora, the goddess of dawn. The one who announces the sunrise, according to Roman mythology. That might seem a little strange for a building on the western perimeter of the campus, where the sun sets. But it's a question of perspective. Aurora's basic structure has now been completed and it should be ready for use by next autumn. At least, provided the coronavirus is under control by then. PK

Photo: Sven Menschel

‘Scent calendar’ for the arboretum

The arboretum flowers and delights in every season. Artist and alumna (Tropical Forestry) July Leesberg has put that on record in a ‘Blossom Calendar’ with an emphasis on the scents of flowers. The book with its 27 black-and-white drawings – one for every two weeks – came out recently. Each drawing is accompanied by a short text describing the artist’s impressions. Her love of the arboretum jumps off the pages of the book. Here is Leesberg on the first wintry day by the winter viburnum, whose little pale pink flowers smell slightly sweet. Frost frames the greenery. It couldn’t be more beautiful. The calender, *De Bloeikalender* (64 pp, 19.95 euros) is for sale at Kniphorst and Luucx in Wageningen and Novita in Bennekom. RK

Photo Guy Ackermans

Photo Roelof Kleis

More green for Born-Oost

The new Born-Oost business park will get an extra wide strip of vegetation to shield it from the houses in the vicinity. The strip will be 40 metres across at the widest point. This is the main concession WUR is making to local residents. Previous plans were abandoned following big protests by locals. Because of the wider band of greenery, the buildings on Mansholtlaan will need to be five metres taller, making them 32 metres tall.

A garage with space for 800 cars will be built behind the NIOO building and on Droevendaal. The garage is for the companies on Born-Oost, not for the campus. It is not clear whether the planned student housing on Mansholtlaan next to ’t Gesprek restaurant will go ahead. Idealis wants to build flats with 250 student rooms but local residents are against the plan. RK

WUR sticks to BSA

In spite of calls to scrap it, WUR is sticking to the BSA (binding study advice) for now.

Eight Dutch student unions have urgently petitioned their university boards to scrap the BSA for this academic year. The BSA is a minimum number of credits that first-year Bachelor’s students must obtain in order to pass into the second year. With its requirement of 36 out of 60 possible credits, Wageningen has the lowest BSA in the Netherlands.

‘Scrapping the BSA would show that WUR appreciates the efforts of students in this difficult time’

The student union Student Alliance Wageningen (SAW) wrote to WUR. SAW chair Gijs Rotteveel: ‘Normally speaking the BSA at WUR is very reasonable, but not this year.’ SAW has heard from students who are worried about having to take longer over their degree, and about the work pressure they are under. ‘We think it’s important that the university acknowledges and addresses these problems. Scrapping the BSA would show that WUR appreciates the efforts of students in these difficult circumstances.’

Filter

But WUR is sticking to its guns on the BSA. Dean of Education Arnold Bregt: ‘Almost all the education has been able to keep going, the programme is easy to follow, and it is not a disaster if you miss the odd class. And of course we’ll look at individual problem cases. It’s always possible there are exceptional circumstances.’

According to Bregt, the BSA has its advantages. ‘I have taught quite a lot myself. If students are struggling, it’s not nice for the students or the teachers. It takes up a lot of the teacher’s time, and that is at the expense of the time the teacher can give to the rest of the students. The BSA is a kind of extra filter at the end of the first year, to pick out students who are just not in the right place.’ LZ

200,000

Some people feel the setting on WUR's spam filter is too restrictive: lots of relevant emails end up in the spam folder too. Information security officer Remon Klein Tank says they have no choice as WUR gets 200,000 spam emails every day.

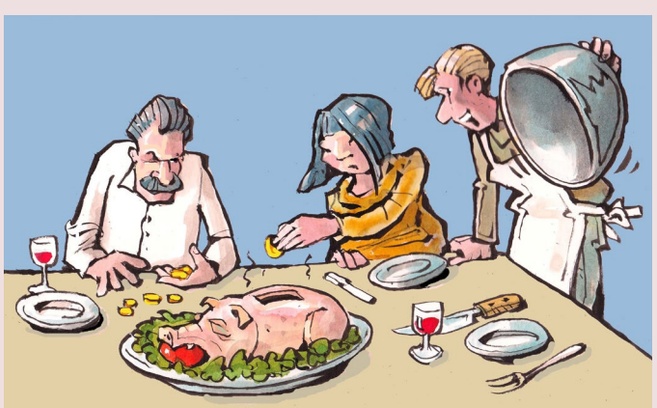
WUR buys Groot Nergena

WUR has bought the Groot Nergena complex in Bennekom. The plan is to use the building for workshops, training courses and meetings. Groot Nergena is on Willem Dreeslaan, the extension of Mansholtlaan leading to the motorway. The complex was built in 1952 for the national institute for variety research and farm crops (RIVRO). The current tenants, which include a crèche, will be moving out over the next few years. Groot Nergena is surrounded by land owned by WUR. RK

Typical (old) Dutch — Out to dinner

During my first month in the Netherlands I invited some new friends for dinner. At the end of a very pleasant evening, one of my guests asked what was in her own words a 'typical Dutch question' - whether she could contribute to the expenses. I was speechless. In my culture that is a serious insult!

In Greece, we take entertaining guests for dinner very seriously. We put great effort into preparing the meal, we deliberately over-cater because offering your guests second helpings is part of the etiquette, and we make sure that we present the best of our cuisine. In fact, the Greek word for hospitality is 'filoxenia', meaning love for strangers, people outside the family. Attempting to pay your Greek host for a dinner invitation is a grave insult to their hospitality.



Now, a few years later, I look back on this incident differently. There are several aspects of Dutch culture that I find fascinating: the open-mindedness and the lack of social pressure, or – in other words – the high level of tolerance and respect for individual freedoms. People do not hesitate to raise issues such as euthanasia, gay rights and legalization of soft drugs that are taboo subjects in many other places.

I now understand that the desire 'not to impose oneself on others' in the Netherlands is very strong. But it is impossible to interact without 'imposing' yourself on people at some level, and I still feel that attempts to put a price on everything can be meaningless and even immoral.

'Attempts to put a price on everything can even be immoral'

Do you have a nice anecdote about your experience of going Dutch? Send it in! Describe an encounter with Dutch culture in detail and comment on it briefly. 300 words max. Send it to Resource@wur.nl and earn 25 euros and Dutch candy.

This Typical Dutch was first published in *Resource* on 8 October 2009, and was written by Elissavet Gkogka, a PhD student in the Laboratory of Food Microbiology at the time. Illustration Henk van Ruitenbeek

Geneticists want evolution in Top 2000

A group of fans of the annual Top 2000 hits poll in the Genetics chair group is trying to get a song about evolution on the list. It's the number 'Endless forms, most beautiful' by Finnish band Nightwish. According to the initiator Kim Ferguson, the lyrics are 'a fantastic ode to evolution' that pay homage to Darwin's ideas. Nightwish also have a Dutch connection as the singer Floor Jansen is from the Netherlands. The Top 2000 is determined by votes by the general public. The Wageningen geneticists are using social media to try and get the song onto the list. You have until Monday 7 December 17:00 to vote for the evolution song on the NPO Radio 2 website. At least, if you're into Nightwish's symphonic metal. If you take a more sombre view of evolution in the age of Covid, there are alternatives: 'Do the Evolution' (Pearl Jam), 'Apeman' (The Kinks) or 'Line in the Sand' (Motörhead). RK

Ethiopians are fleeing their country. Photo REUTERS/BAZ RATNER

WUR projects in Ethiopia at a standstill

WUR has had a lot of development projects in Ethiopia in recent years. Now that war has broken out in the north of Ethiopia, the research and the training programmes have come to a halt.

Adriaan Vernooij, project manager at Wageningen Livestock Research, has lost contact with his research partners in the north of Ethiopia. Due to the war between government troops and militias from the rebel region of Tigray, all phone and internet connections in that region are down. Vernooij supervises applied research and runs training courses for the BRIDGE project – Building Rural Income through Inclusive Dairy Growth in Ethiopia. This project's objective is to develop dairy farming in five Ethiopian regions. Vernooij has not been to Ethiopia for a year because of the coronavirus crisis, and now the project is out of action in Tigray.

WUR researchers do not know how their research partners in Ethiopia are faring

Flo Dirks, who works at Wageningen Centre for Development Innovation, has been working on developing the sesame sector in Tigray for the past three years. That project, due to end next month, is at a standstill now too. Dirks, who lives in the Ethiopian capital Addis Ababa, does not know how her colleagues are faring. One ex-colleague phoned her to say he had fled the violence in Ethiopia and was now in a refugee camp in South Sudan.

WUR has been involved in a lot of projects in Ethiopia recently under the umbrella of Benefit: Bilateral Ethiopian-Netherlands Effort for Food, Income and Trade Partnership. WUR had its own office in Addis Ababa, but the Benefit project is now drawing to a close. There is talk of follow-up projects, but these have been delayed by the coronavirus crisis and personnel changes at the Dutch embassy. AS

Anti-vaxxers get retweeted more

Negative messages about coronavirus vaccines are retweeted six times more than positive ones.

PhD candidate Jasmina Ruger of Business Management & Organization discovered this in a study last month of over 50,000 tweets and retweets about the coronavirus vaccines. 'Anti-vax messages are retweeted much more often,' says Ruger. 'There is a small group that is very active on Twitter. They reach just as many people as the large group sending pro-vaccination messages. Their messages spread like wildfire, even to people who aren't necessarily against vaccination but might still be influenced by the tweets.'

Emotion

Ruger found differences in the sentiment and communication style of the two groups. 'Pro-vaxxers mainly use facts and scientific information. Anti-vaxxers focus more on emotion.' She says this is important in communication. 'You can't respond with facts if someone tells you their child has become severely ill after a vaccination.'

A small proportion of the Dutch population doesn't want to be vaccinated. Ruger: 'I don't think you can persuade that group. But there is also a large grey area of people with doubts. Each group has their own concerns so the message will need to be tailored to those worries. Once we've finished the complete analysis, we hope to have a better understanding of how best to reach the various groups.' TL

'Anti-vaxxers focus more on emotion'

Yeast to replace cow

Can you make milk proteins from yeast and do away with the cow? A group headed by WUR is about to try.

You currently need a cow for dairy products. But one question in the National Science Agenda is: could there be an alternative? Intensive livestock farming has downsides for the environment and animal welfare. So could we do away with the cow as the source of casein, the main milk protein? Etske Bijl of Food Quality and Design thinks the answer is 'yes': you can genetically modify yeast to make it produce casein.

'Plant-based substitutes are often nowhere near like real dairy products'

Bijl is leading a consortium of companies and universities that will be working on this for the next five years. It is not just about getting the yeast to make casein but also about getting the protein to clot like it does in real milk. That structure is essential, says Bijl: 'There are plant-based substitutes for milk protein but the products are nowhere near like real dairy products.'

The project is getting 1.7 million euros from the Science Agenda fund. Professor of Soil Geography and Landscape Jakob Wallinga was also awarded funding, in his case for research on how we can make sandy soils more resilient and able to cope with climate change. RK

A Little Wiser

Does too much soya give men breasts?

Soya products contain isoflavones, which are phytoestrogens, the plant equivalent of oestrogens. ‘These substances bind to the oestrogen receptors in the body,’ says hormone expert Katja Teerds, associate professor of Human and Animal Physiology. ‘But that doesn’t mean that oestrogen activity goes up and you develop breasts. To start with, soya products contain tiny quantities of isoflavones, so you would really have to drink litres of soya milk before you would notice any effects at all. And also, phytoestrogens do not bind nearly as strongly to oestrogen receptors as the body's own oestrogens.’

Teerds has some idea where the stories about soya-induced ‘man boobs’ come from, though. ‘Overweight men often have higher oestrogen levels. That is because fat tissue gives off an enzyme, aromatase, which converts testosterone into oestrogen. Breast formation in these men is partly a matter of fat deposits, and partly a result of the slightly raised oestrogen level. The breasts consist largely of fat tissue and to a lesser extent of mammary gland tissue. A high oestrogen level also causes a lower libido in men and possibly reduced fertility. Which also happens with anabolic steroids, incidentally.’
What about women, can they go up a cup size if they drink soya milk? ‘No, it’s the same for them: you’d have to consume far more soya products than you possibly could. There are oestrogen supplements for women in the menopause, some of them with phytoestrogens. If your own oestrogen levels are low, as they are during the menopause, taking these could help to reduce menopausal symptoms.
The safety of synthetic oestrogen supplements – not the plant ones – is disputed, however, because it is claimed they could raise the risk of breast cancer.’
Phytoestrogens are found not only in soya, but also in products such as peas, linseed, broccoli and beer. Maybe that was the inspiration for the Dutch carnival hit called ‘Beer and tits’. TL

Conclusion
No matter how many litres of soya milk you down, you won’t get bigger breasts even if you wanted to.

‘Breast formation in men is partly due to raised oestrogen levels’

Katja Teerds, associate professor of Human and Animal Physiology

Every day we are bombarded with masses of sometimes contradictory information on pressing issues. In this feature, a WUR scientist gives you something to hold on to. What are the facts of the matter?

Every question makes you a little wiser. Do you dare to ask yours? Email us at redactie@resource.nl

Illustration Marly Hendricks

Organs on chips speed up research

An advanced mass spectrometer does in an hour what would otherwise take two days.

Milou Santbergen, who got a PhD in Organic Chemistry on 17 November, discovered this when using an 'organ on a chip', a kind of model of the organ. 'For example, you can simulate the flow of food through an intestine,' says Santbergen. Santbergen combined an intestine on a chip with an advanced mass spectrometer, a device that identifies compounds based on their mass. This lets her analyse online how certain nutrients, medicines or toxins move through the intestinal wall. 'The advantage is that this is fully automated. You can start up the machine, then go off and have a cup of coffee. It's much less labour-intensive and there is no risk of human error. You can also collect data much more quickly, and because you're measuring in real time, you can detect unstable compounds that might otherwise already have broken down.'

'One aim is to replace animal testing in the future'

One aim of such 'organs on chips' is to replace animal testing in the future. Santbergen: 'We have now tried out an intestinal model but the principle works equally well for a model of the skin or liver. So there are many possible applications.' TL

Breeding technique does not affect soil life

Soil life is no different when cisgenic potatoes are used compared with potatoes bred in the traditional way, shows a study by researchers in Germany, Ireland and Wageningen.

The focus of the research was on resistance to the potato disease *Phytophthora*. The researchers planted two potato varieties in trial fields in Ireland and the Netherlands. One potato variety had a cisgenic version, in which a resistance gene from a wild potato plant had been introduced using genetic modification,

> The variation was due to environmental factors, not the breeding technique

and a classically bred version without the resistance gene. The second potato variety had resistance genes obtained using cross-breeding and selection. The renowned Thünen Institute in Germany assessed the soil life. Biologists are learning more and more about the interaction between plants and soil bacteria and fungi; they have found that biological communities develop around plants. The German institute compared the DNA of the bacteria and fungi around the cisgenic potatoes with that from around the potatoes bred using the classical approach. They found no significant differences.

The researchers did find considerable variation in the bacterial and fungal communities but this was due to environmental factors such as the soil type and weather conditions, not the breeding technique. The researchers published the results this month in *Frontiers in Bioengineering and Biotechnology*.

GMO

Agronomist Bert Lotz from WUR, who was involved in the study, says it confirms previous research that showed genetic modification with genes from the same species does not have any environmental effects. The study is timely, says Lotz, as the EU is currently considering whether new breeding techniques such as cisgenesis should remain subject to the strict GMO authorization criteria that date from 2001. 'Research from the past few years shows you should base the risk analysis on the property in the plant that you have changed, not the technique you used.' AS

Wageningen researchers in the trial field. PHOTO GUY ACKERMANS.

Drought is unpredictable

Drought occurs when there is not enough water. But where exactly is the 'leak'? Which sources of water failed in the drought of 2018? Meteorologist Imme Benedict studied weather data from the past 40 years to find out where moisture normally comes from and how that changes during a dry spell. The drought of 2018 was caused by a persistent high-pressure area above Western Europe. That blocked the usual supply of humid air from the Atlantic. The main sources of precipitation were then local evaporation and moisture brought in from the east. But even with that knowledge of the water cycle, it is still difficult to predict dry spells. 'There are still so many processes we need to understand better, for example for simulating a persistent high-pressure area. It is important to focus on this so that we can use this knowledge to improve the reliability of simulations for the future.' RK

Gradually breeding sociable chickens

Some chickens peck their fellow hens more than others and that is partly genetically determined. Animal breeding company Hendrix Genetics is using Wageningen research to gradually reduce mortality and feather pecking among laying hens.

Hendrix Genetics used to select the cockerels that gave the biggest chance of survival amongst their offspring but these were often the most aggressive cockerels, so mortality tended to be higher rather than lower in subsequent generations. Therefore the breeding company joined forces with Wageningen researchers to examine the indirect factors in survival: how sociable are the offspring of different cockerels and do they attack other members of the group?
At first, Hendrix used breeding value estimates based on genealogical trees. The assumption was that the father and mother provide 50 per cent of the genetic material each. In practice that percentage varies and you don't know which genes come from which parent. Now the researchers can use genomics. The researchers mapped the DNA of thousands of hens and cockerels and combined this data on genetic differences in the family with the survival score.

100 weeks

The Wageningen PhD candidate Tessa Brinker, who obtained her doctorate on 13 November, used this approach to determine the genetic variation in survival and feathering quality. In hens that survive a long time, 40 per cent is thanks to their own genes — they are strong — and 60 per cent is thanks to their fellow hens in the barn — they aren't pecked. The fellow hens in the barn account for 90 per cent of the feather quality. Incidentally, genes only have a 20 per cent contribution in how long the hens live: good feed and good management are also important in reducing feather pecking and mortality. Thanks to this combination of genetics, feed and management, progress is being made. 'In the past, laying hens survived for 80 weeks on average. In 2017 we got up to 100 weeks sometimes, but back then we were still allowed to treat the beak tips. That has been banned since 2019 and now we are seeing a temporary drop in life expectancy because the sharp beaks cause more victims. But eventually the hens will definitely be able to live for more than 100 weeks, in part thanks to this research.' AS

In the past, laying hens survived for 80 weeks

For humanities types too

Guido Camps

WUR has clearly chosen to focus more on data science and artificial intelligence (AI) in future. New courses have been launched, new chair groups created and more specialists appointed.
A lot of programming nerds (like me) are well aware that faster computers and the new data-gathering methods have opened new doors, but we also see that data science is essentially a logical extension of what we've been doing all along. A grumpy biostatistician once grumbled that everyone who ever hated statistics now proclaims that the future is for data science.

'I hope all Wageningen students are going to play with Python'

What strikes me about the 'new' curriculum with its emphasis on these techniques is that these initiatives mainly attract people who were already moving into this field. In other words, students who were already interested in data and algorithms are getting a better deal with more opportunities for academic growth.
But AI and data science are not just research domains in their own right, but also the new tools with which academics must tackle the world, whatever their own research field may be. So I hope students and, through the education directors, the university will have the courage to make data science an integral part of their curriculum, even if they don't have much of an affinity with it. I think the most interesting applications of machine learning come when people who at first have no interest in it have to use it.
Besides aiming at this change, WUR could make itself even more future-proof as a university by harnessing the creativity of all the humanities and social sciences types in new data applications. My appeal to students is: sign up for these courses, no matter what your subject and even if it makes you nervous! I hope all Wageningen students will soon be playing with Python or running their ANOVA in R, so statistics become a creative programming challenge instead of an exercise in blindly following SPSS instructions.

Guido Camps (36) is a vet and a postdoc in Human Nutrition. He enjoys baking, bee-keeping and unusual animals.

SHARE DATA WHERE POSSIBLE

Research data should be shared as much as possible. New WUR guidelines establish how.

Open science — in which research data are freely shared — isnow standard practice, particularly for government-funded research. On this topic, WUR subscribes to the slogan 'as open as possible, as closed as necessary'. What does that mean in practice? New guidelines flesh out the principles.
Sharing data is standard practice. Grant-awarding bodies like the Dutch Research Council, the EU, and the ministry of Agriculture, Nature and Food Quality require data to be open access. WUR recommends that researchers publish under the CC-BY licence. CC stands for creative commons, a licensing standard that determines under which conditions copyrighted work, including research data, can be shared. BY stands for the required citation of the original copyright holder. 'WUR is expressly not choosing to use the CC-0 licence,' says Jacquelijn Ringersma, the data management coordinator for the Wageningen Data Competence Center and head of the team that formulated the guidelines. The rest of the group consisted of data stewards from the Science Groups and a few researchers.

Citation

'CC-0 is the most liberal type of licence and doesn't even require a citation of the original researcher,' Ringersma explains. 'We think that citations contribute to our researchers' scientific careers. It's a guideline but it's not compulsory.'
Most research data can be freely shared, but there are situations in which data can only partially be shared or must be restricted completely. Limited sharing might apply to cases where the data has to be paid for or if WUR has a strategic interest in not sharing everything. Institutions funding the research might also place restrictions on data sharing. Some data have to remain entirely under lock and key. 'For instance, a nutritional study in which you can't anonymize the data,' suggests Ringersma. But even then, the metadata (general information about the dataset) does remain publicly accessible.

'CITATIONS CONTRIBUTE TO OUR RESEARCHERS' SCIENTIFIC CAREERS'

Ownership

The new guidelines have created clarity regarding one old chestnut: data ownership. Ringersma: 'All data produced by researchers under contract with WUR belong to WUR.' But not all cases are so clear cut. What happens, for example, if a private sector party contributes to the research funding? 'There's no ready-made answer to that,' says Ringersma. 'You'll have to negotiate a solution together. That doesn't always happen now. The sensitivities tend to lie on the Wageningen Research side. The rule is that whichever party wants the firmest restrictions gets their way.'
The new guidelines go into effect immediately. Starting in the new year, there will be workshops with the data stewards in the research groups on how to interpret and apply the guidelines. These workshops will address the specific situations encountered in practice. RK

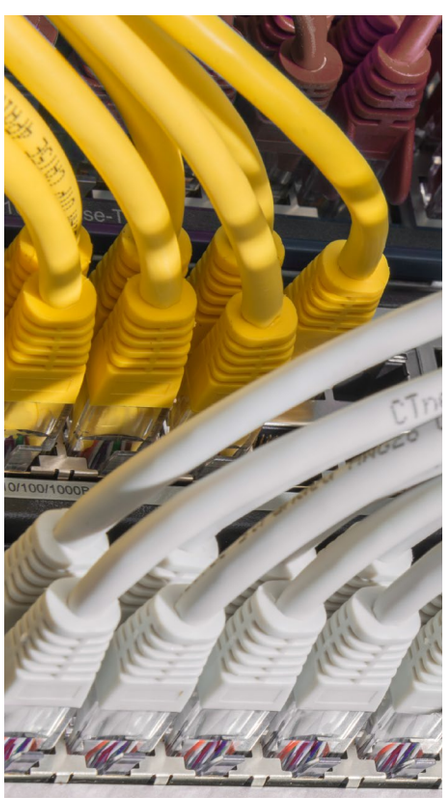


Photo Shutterstock

CHINA RETAINS ACCESS TO DUTCH LETTUCE DNA

Wageningen's gene bank is sending its lettuce collection to China for gene sequencing. The resulting genetic data will be publicly available, says Theo van Hintum, head of the gene bank for plant resources.

Photo Shutterstock

The Centre for Genetic Resources, the Netherlands (CGN) in Wageningen has the world's best lettuce collection, with 2546 samples including cultivars and wild varieties adapted to local environmental conditions. The more samples, the more genetic variety. At Van Hintum's request, the collection is currently being sequenced by the Beijing Genomics Institute (BGI) in China.

Who will have access to that data?

'We as a gene bank will make the data publicly available as digital files. The data will first appear in the publicly accessible China National Gene Bank database and may later also be published in a European database. Globally, the three major genetic data bases are in Europe, the US and Japan—all of them publicly accessible.'

And now China is building one too?

'It seems so. We know that China doesn't necessarily publish all its genetic data, just as companies sometimes keep some information to themselves. That's why we've made clear agreements establishing how BGI will go about the work and building in safety mechanisms. We tested the quality of the first dataset BGI produced, for instance, and it proved to be good and complete.

But you need trust as well as tests. We talked a lot with BGI, getting to know our collaborators there and producing a scientific publication together. They know a lot about DNA, we know a lot about lettuce. So far, the relationship has lived up to expectations.'

Why not sequence the lettuce DNA in the Netherlands?

'Yes, that is a bit odd, because almost all the big plant-breeding companies are in the Netherlands. It comes down to the costs. In an earlier Dutch project we sequenced 100 lettuce samples. In China, we're doing 2500 samples. Maintaining CGN's gene bank is a statutory research task, you see, so we have to be independent and fully transparent. Our goal is to make as much information as possible about properties and DNA available to our clients.'

Do you work with companies too?

'Absolutely, in a variety of ways. Lettuce farmers, for example, have been wrestling with a mould-like pathogen called Bremia. To stay ahead of the disease, companies have to keep cross-breeding their lettuce varieties for resistance genes. Under our coordination, the plant-breeding companies scan the lettuce collection every few years to look for resistance genes that are effective against new strains of Bremia. Two companies will then check the sample and we share the results. Participating companies receive all the information directly and we make the data publicly available after three years. As a result, companies are able to invest in disease resistance and we get a fantastic public database.' AS

'WE'VE MADE CLEAR AGREEMENTS AND BUILT IN SAFETY MECHANISMS'

Where negative is positive: students working at Covid testing stations

Sociable work with a risk of blows

230,000 coronavirus tests are done every week in the Netherlands. A massive task, which requires a lot of workers. Many of the testers are students. We talked to two WUR students about this unusual part-time job.

Text Coretta Jongeling

Merle Kuiper is doing the MSc in Nutrition and Health, and since September she has been combining that with a job at a testing station. 'Normally I work in a café at Ouwehands Zoo. That closed in March so I started looking for something else and I wanted to help out during the coronavirus crisis. Then an email came in from WURkforce (WUR's vacancy list, ed.) saying the health service was looking for people. I thought that might be an idea.' Myrthe Bouma (doing the BSc in Forest and Nature Management) decided to respond to the appeal from WURkforce too. 'I'm in my fourth year of my Bachelor's because I still have a few courses to do. In between those courses I've got lots of time to work, and I've been a tester for a month now.'

Packed

For those who haven't yet undergone a Covid test, this is the procedure in brief: When you come in, you say your name, show your ID and are registered in the computer system. That's the administrative part of the procedure, which is what Merle does. Then you take a seat and the tester — swathed from top to toe in protective clothing, face mask and goggles – will take the sample from your throat and nose using a cotton bud. That is Myrthe's job. The sample goes into a tube that is linked to your name and is sent to the lab, where they see whether you have the coronavirus.

It only takes a couple of minutes, but it's a very important task. Myrthe: 'You have to work carefully, you mustn't make any mistakes. You don't want to be the one who labelled a tube wrongly or lost a test. If that happens, the person has to come back and be tested again. It's even worse it you carry out the test wrongly, because that can give a "false negative". That means someone goes on walking around thinking they are fine, while they are not. Someone like that could infect a lot of other people.' The students are not afraid they'll get sick themselves. Merle: 'We are well protected. I'm sitting behind a plexiglass screen and I always wear a face mask. And we disinfect everything people touch.'

Sit on your hands

To do the test properly you have to push the cotton bud right up people's noses. That is what makes a lot of people nervous about being tested. It's nerve-racking for the tester the first time, too. 'You get good training and plenty of time to observe a colleague. And it's not very difficult. Even so, my hands were trembling the first time I did it.'

It has become routine by now, although that's not the case for the 'client' of course. How do you deal with anxious people? Merle: 'You try to reassure people,

crack a joke. When I started, I got a colleague to test me so I knew what it felt like. You can't go telling everyone it's not too bad if you haven't gone through it yourself.' Some people still react badly. Myrthe: 'Sometimes people really shout at you, and I often nearly get thumped. It's a kind of reflex when you start inserting the cotton bud. If that happens, I quickly stop and step back, and tell people to sit on their hands. That works. Other people get so anxious they start hyperventilating. Or they are worried that their DNA will be kept for dubious purposes. Some of them look at me suspiciously and ask, are *you* going to do my test? Children are easier. They are scared too, but they just submit to it. Children have an unshakeable faith in people who look like medics.'

Difficult moments

'The test result has serious consequences for some people,' says Merle. 'If they test positive for Covid they can't go on holiday, or to a funeral, or to visit their family. Emotions can run high. Normally you would put your arm around someone in that situation, and now you have to try and comfort them from behind plexiglass. Moments like that are difficult.'

Luckily, most of the interaction is nice. 'Now the whole testing process is more efficient, we mainly get positive feedback. People are happy and grateful that they are tested quickly.' Myrthe: 'It is really nice work; I wouldn't mind doing it for a while longer. But it depends how the pandemic develops. I would rather see the virus figures go down, even if that does cost me my job.' ■

'I TELL PEOPLE TO SIT ON THEIR HANDS'

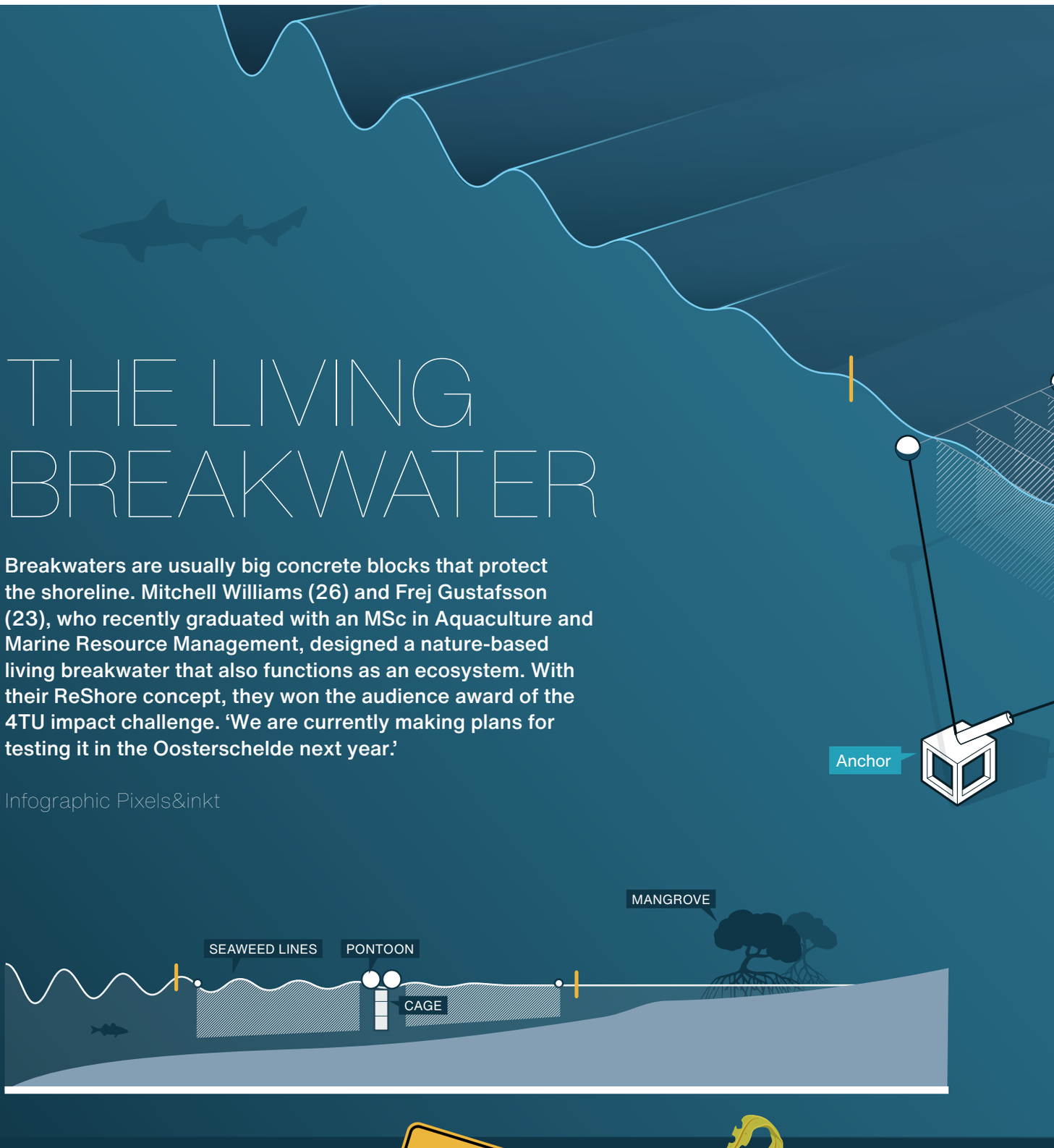
'I WOULD RATHER SEE THE VIRUS FIGURES GO DOWN, EVEN IF THAT DOES COST ME MY JOB'

WUR students Myrthe Bouma (left) and Merle Kuiper work at the coronavirus testing station in the cinema in Ede. Photo Guy Ackermans

THE LIVING BREAKWATER

Breakwaters are usually big concrete blocks that protect the shoreline. Mitchell Williams (26) and Frej Gustafsson (23), who recently graduated with an MSc in Aquaculture and Marine Resource Management, designed a nature-based living breakwater that also functions as an ecosystem. With their ReShore concept, they won the audience award of the 4TU impact challenge. 'We are currently making plans for testing it in the Oosterschelde next year.'

Infographic Pixels&inkt

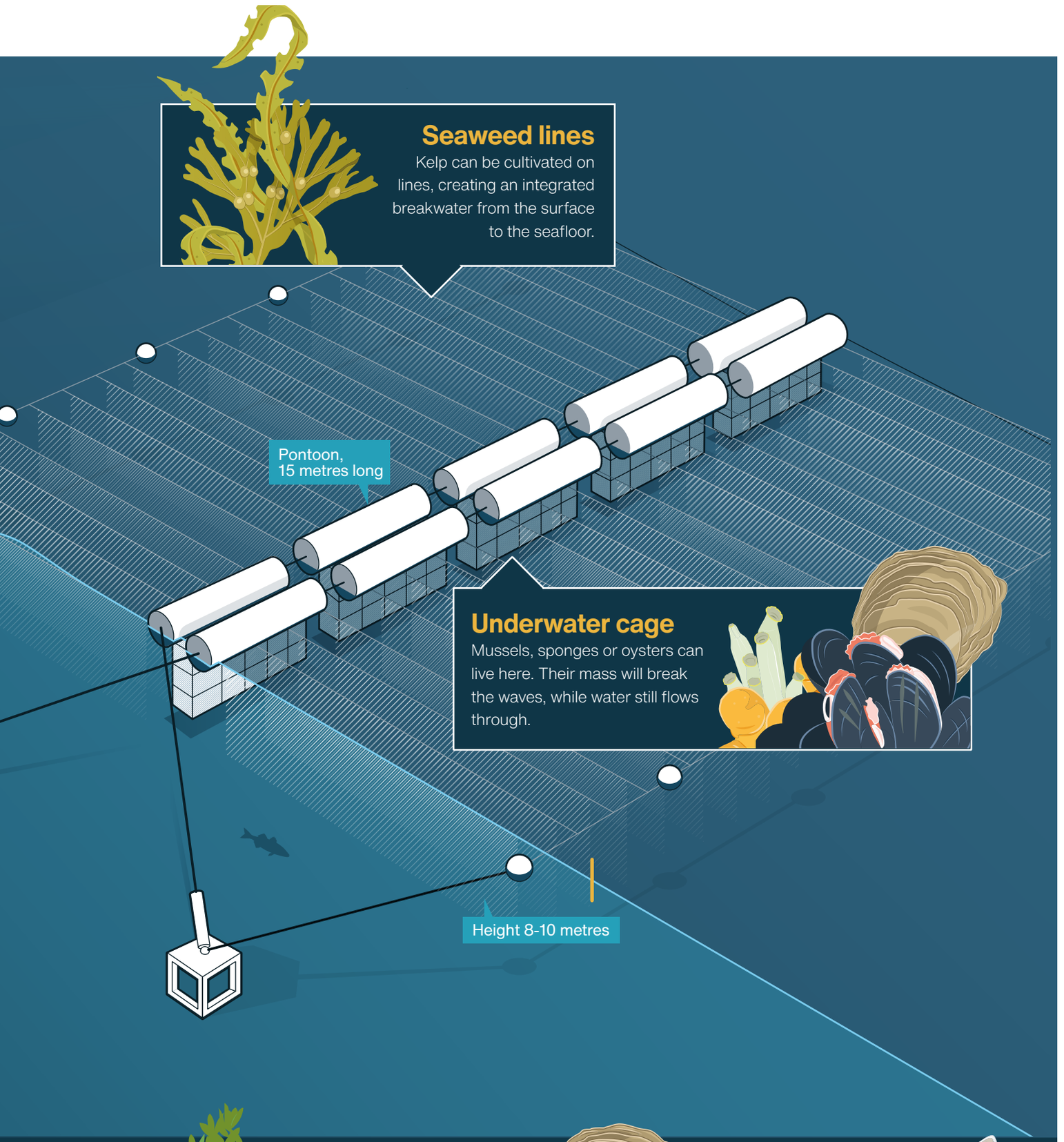


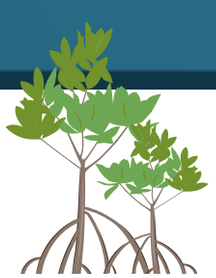
The living breakwater can be used in:

ReShore has many more functions than a traditional concrete breakwater.

Coastal protection
Protecting coastal communities that are at risk.

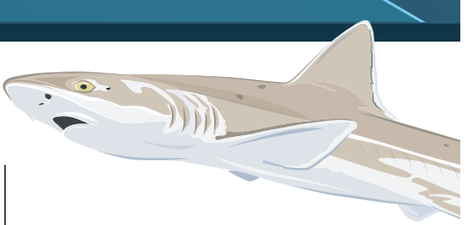
Food production: it can function as a nursery for fish species, thereby increasing fishery yields.





Ecosystem restoration to protect delicate ecosystems like mangroves, which function as natural breakwaters once mature.

The removal of excess nitrogen, phosphorus and heavy metals by the seaweeds and shellfish that filter the water.



The creation of resilient habitats for different marine animals through the formation of an artificial reef.

Student life in times of Covid

Accept it and don't let it drive you crazy

After nine months of the coronavirus pandemic, students are struggling with loneliness, motivation problems and homesickness. In this story there are a few tips on how to get through this period, and three students talk about their experiences. Plus: what grade do they give this time in their lives?

Photography Guy Ackermans

Text Luuk Zegers

Research by I&O Research for the Dutch news organization NOS shows that 69 per cent of young people are more lonely now than they were before the coronavirus crisis, and half are experiencing lower moods. A survey was conducted among 8300 students by Caring Universities (in which Utrecht, Maastricht, and Leiden Universities and VU University Amsterdam are participants). Students reported that their concentration is poorer (56 per cent); they are lonelier (52 per cent) and more unhappy (47 per cent). Students worry about falling behind in their studies (77 per cent), about their loved ones getting infected (58 per cent), and about the financial impact of the coronavirus crisis (26 per cent).

Surveys were held in Wageningen too, one of them by international student association ISOW. Society secretary and student Janina Fraas (24) says, 'Half of the respondents feel there is a communication gap among students and between students and teachers. Two thirds say the pressure on them is too high. I find that myself: with online education you feel as though you've got to figure out everything for yourself. And about half are experiencing anxiety.'

Uncertainty

'When the pandemic started, we thought: it will all be over in a couple of months,' says Fraas. 'Now those months have passed and we still don't know when it will be over. There is a vaccine, but it can take months and maybe a year before the situation gets back to normal. That uncertainty is bad for people.'

One of the difficulties students run up against is having to do everything in the same room. Fraas: 'Your bedroom is also your study and the place where you relax. I live in Hoevestein in a room 12 square metres in size. That just doesn't work. I go to the university a lot to study, because you simply can't stay in your room all the time.'

According to the survey, students would benefit if more social contact was possible on campus. Fraas: 'Create more workstations and allow more activities on campus. People are really fed up with online activities that are supposed to be such fun.' Work pressure needs to go down for students too, say many respondents. 'The academic year just rolls on and there is hardly any breathing space between periods. You have to go on achieving constantly,' says Fraas, 'whereas a lot of international students are used to classic semesters in which you can study at a somewhat more relaxed pace and you're only super-busy around exam weeks.'

What can students do about it themselves? Fraas: 'Get out of doors as much as you can. Go for walks, go running, get

Meltem Meydankas (left), Samuel Rapolu and Steven Pieterse. On pages 20 and 21 they talk about their student life.

some exercise. You're allowed to meet outdoors in groups of three again, so that's something. It's important to get out of your student room for a while. And look for a nice hobby.'

Homesickness

Student psychologist Nereida Ordovas Garcia runs workshops on coping with homesickness, loneliness and the challenges of higher education. 'Many students were already homesick,' says Garcia. 'The coronavirus has made it worse because now students also worry about the health of their friends and family at home. And before the crisis, if EU students felt really down, they could easily fly home for a long weekend. If you did that now, you would usually have to go into quarantine on arrival. And then you never know when you'll be able to go back to Wageningen. That uncertainty only gets bigger the further away you come from.'

Garcia also sees a lot of students with motivation problems. 'Students who are struggling with their courses often feel they are drowning in all the work,' she says. 'That can be very demotivating.

'WHEN THE PANDEMIC STARTED, WE THOUGHT: IT WILL ALL BE OVER IN A FEW MONTHS'

'GET OUTDOORS AS MUCH AS YOU CAN'

In such cases I advise them to study at home in a more organized way. Get a diary and plan your day as precisely as you can. Not just with a list but with a tight timetable: reading this from 9 to 10; online class from 10 to 11; a break from 11 to 11.30 with a short walk, and so on. Perhaps Garcia's most important tip is to accept the situation, difficult as that may seem. 'It is a stressful time. Many people have negative thoughts, feel stressed and tend to procrastinate. If you fight against it by saying "negative thinking is stupid", you only reinforce those negative thoughts and end up feeling even worse. It is healthier to accept that it just is a difficult time. "OK, I'm feeling seriously stressed, but what can I do to live a worthwhile and satisfying life even so?"'

★★★☆☆

Three students on their struggles with the pandemic

Wageningen students, like others, are experiencing stress, loneliness and motivation problems. These three students tell their stories. ‘My first month in Wageningen was great. I met lots of new people. When the pandemic started it got harder.’ From the left: Meltem Meydankas, Samuel Rapolu and Steven Pieterse.

Photo Guy Ackermans

‘December and January will be tough’

Meltem Meydankas (28), a Master’s student of Biosystems Engineering from Turkey, gives her student days in Wageningen so far a 5.

‘Even before the coronavirus crisis my programme was quite challenging, but the coffee breaks and the contact with my fellow students helped me get through it. Then education suddenly went online. The morning classes were OK, but by the afternoon my concentration was completely gone. That was really hard. At the moment I am working on my thesis, so the only person I see who has anything to do with my studies is my supervisor. And that’s online. I miss the coffee breaks and my friends. The days are getting shorter and it is dark for longer again. December and January will be tough. I only meet two or three friends. I avoid the rest because you can be infectious without having symptoms and if I get sick, I don’t have any family here to look after me. I live alone, so I can’t afford to take the risk.

I find it quite stressful working on my thesis all on my own. I have taken part in motivation workshops, but you always get the same tips, like “make a distinction between the space where you work and the space where you relax”. More easily said than done if you have a small room.

Studying abroad seemed like a good opportunity to travel, but I can’t go anywhere now. Turkish people need a visa to travel freely within the EU. I sometimes feel like I’m wasting my time here. I need to find an internship to be able to graduate. That’s not easy, as many companies are not taking anyone new on during the coronavirus crisis. One of my friends is doing an internship online, but I don’t think I can learn much that way. I’ve heard that you are allowed to write a second thesis instead. As if writing one thesis wasn’t difficult enough! I want a real internship: it’s important to get some experience.’

Are you struggling with motivation problems, homesickness or loneliness? WUR has student psychologists, student deans and study advisors who are there to help you. See https://www.wur.nl/en/Education-Programmes/Current-Students/Student-Guidance.htm, and for workshops and training courses www.wur.eu/sts

‘Every day is the same and that’s been going on a long time’

Steven Pieterse (19), a first-year Bachelor’s student of Food Technology from the Netherlands, gives his student days in Wageningen so far a 6.

‘I’ve had just one lecture and a few practicals on campus so far, and the rest is online. And even the practicals are limited – there are far fewer people, and you have to keep your distance and wear a face mask. You see a clear difference in the quality: on campus teachers feel at home and students and teachers can see each other. There you really feel like you’re at university. I don’t get that feeling in my room when I’m looking at a PowerPoint presentation.

I have three housemates, but they are seldom at home. The Food Technology students have a WhatsApp group, but contact is mainly online. Apart from that, I’m in the Hellingproef cycling association. There is no outdoor training at the moment and the spinning classes at the Bongerd weren’t possible either because of the coronavirus measures. My grandparents live in Wageningen, so I go for a meal with them sometimes or we go for a walk. And I go home to my parents every other week.

How can I make sure I do get some social interaction? The pub is closed and it’s not easy to meet up. I did consider joining a student society but I didn’t want to take any risks because I often visit my grandparents. Period 1 went OK, but now I’m getting to the point where I’m increasingly losing interest. Every day is the same and that’s been going on a long time now. I chose to come to Wageningen because of the lovely green campus and the student life. This is not what I expected.’

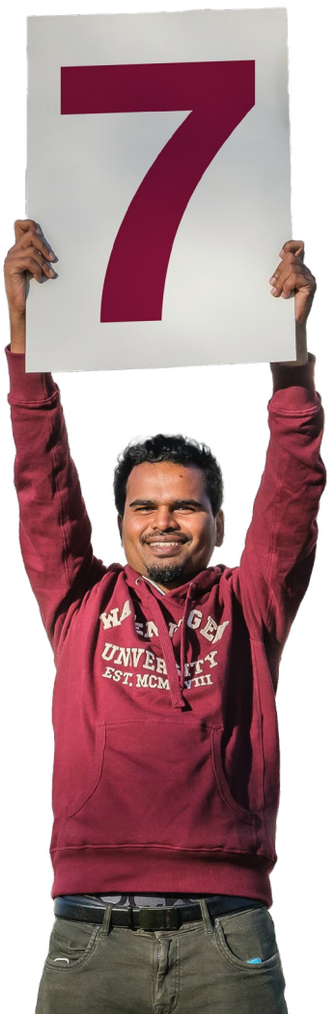
‘The practicals help me stay motivated’

Samuel Rapolu (25), a Master’s student of Plant Sciences from India, gives his student days in Wageningen so far a 7.

‘I started my Master’s in February, so I had about a month of normal education. After that it was mainly online. When you are following long classes, you easily get distracted. You soon start looking out of the window, at the clock or at your telephone. In the first period of this academic year, the university came up with “blended education”, which meant we could go to the campus more often. The practicals help me stay motivated – much better than when we only had online education. Even if a practical only goes on for a quarter of an hour, that brief moment in the lab can brighten up the whole day.

My first month in Wageningen was great. I met lots of new people. When the pandemic started, things got harder. When I meet people now I get the feeling that it’s harder to really make contact with someone. Maybe because you can’t give people a hug or a pat on the back. I think that kind of brief physical contact helps to develop closer friendships. I do my best to meet a friend every day, so I don’t go crazy in these strange times.

I would dearly love to visit my family in the Christmas holidays, but India is far away. Travel is risky – imagine if the world goes into lockdown again? I wouldn’t be able to work on my thesis until I got back to the Netherlands. I think it’s important to stay positive, but it’s also important to acknowledge that this is a difficult situation.’



RIDDLE OF THE WASP SOLVED

Parasitic wasps do without sex chromosomes. So how do sex differences come about? Molecular biologist Eveline Verhulst has solved this riddle. And that earned her a publication in *Science*.

Text Roelof Kleis

Parasitic wasps are pretty unsightly creatures. And that is true of *Nasonia vitripennis*, the bug that Eveline Verhulst has been working on for her whole academic career. The wasp is no more than a couple of millimetres long, too small to see properly with the naked eye. It serves a useful purpose as a form of biological pest control in livestock farming, and as a parasite on the pupae of the stable fly.

In the case of many insects in the *Hymenoptera* order, we know that a female comes out of one egg cell and a male out of another. But the standard model does not apply to the *Nasonia* genus. 'So I set to work on that,' says Verhulst. That was back when she was a PhD student (graduating *cum laude*) and a postdoc at Evolutionary Genetics in Groningen. She came to Wageningen seven years ago with an NWO Veni grant in the bag.

'THE FEMALE DECIDES WHETHER FERTILIZATION TAKES PLACE'

The *Nasonia* genus is haplodiploid. The male (haploid) has a single specimen of each chromosome on board, coming from the mother. The female (diploid) has two of each chromosome, one from the father and one from the mother. If the female does not mate, then the egg cell will automatically produce a male. If fertilization does take place, then a female will develop. In both cases, the gene with the appealing name *doublesex* plays a key role in sex development. The gene ensures that a chain of reactions is set off that lead to a male or a female.

So *doublesex* literally plays a dual role. But how does the gene know which sex is wanted? 'We knew there was a gene in play that is responsible for this signal,' says Verhulst. 'But we didn't know which gene.' In an article in *PLoSOne* in 2013, Verhulst and her team called this gene *wom*, short for *womanizer* (see inset).

Together with her Groningen team, Verhulst found *wom* by comparing the activity of genes in the young embryos of males, females and gynandromorphs (genetically male, female in appear-

Womanizer

Wom originally stood for womanizer. But no longer. On the insistence of *Science*, it became 'wasp overruler of masculinization'. Same abbreviation, different overtones. Because that was what it was about, reckons Verhulst. 'I think that it was related to the Me Too movement. We thought womanizer was appropriate. After all, in the animal kingdom, the males are womanizers. That is the evolutionary strategy. A male wants to mate. And in this case, that is necessary for making females. *Feminizer* would have worked too, but that name is already in use.'

ance). 'Then you look at the difference in gene expression: which gene is switched on in the one and not on the other. That often produces a long list of differences. But we were lucky because the list was very short.'

The search led to the identification of *wom*, the gene that eventually steers *doublesex* towards developing a female. Eventually, because the whole process is complex and requires a number of steps. *Wom* does not influence the process directly but through another gene (*tra*, short for *transformer*, see illustration).

And it gets a bit more complex than that, even: both sexes have *wom* on board, but the one that comes from the mother is inactive. That makes fertilization essential: only the male *wom* stimulates the development of females.

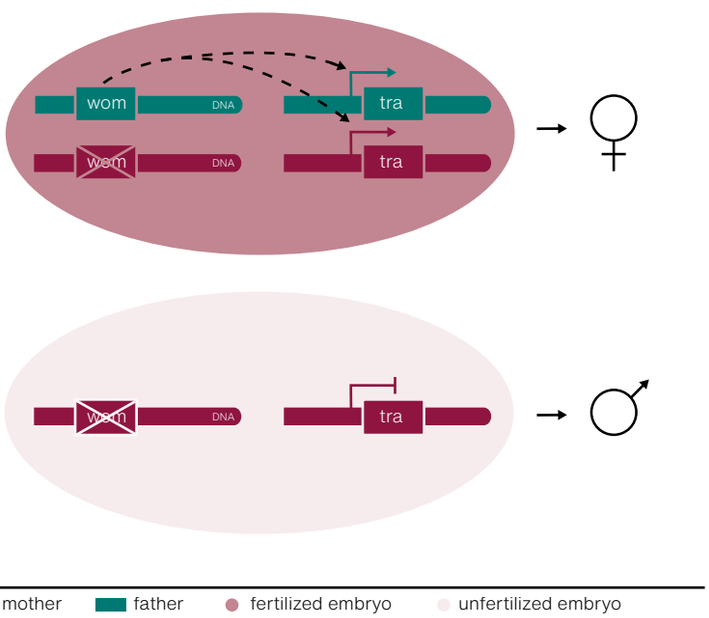
Females in charge

So a male is needed to make females. But anyone who sees male dominance in that is on the wrong track. The female wasps are firmly in charge. Verhulst:

'During mating, the female stores the sperm. Each time she lays an egg, she then decides whether or not fertilization takes place. Normally, mating produces about 90 per cent females and 10 per cent males. But that ratio can change with the circumstances. If, for example, there are a lot of females nearby, the wasp will make a few more males, so that her sons can mate with the daughters of the other females.'

The identification of *wom* is a useful step forward. But the story is far from over. Why, for example, is the female *wom* rendered inactive? Is the male *wom* already active in the sperm cell or only after fertilization? And how does all this fit into the evolutionary narrative of species formation? 'The male-or-female thing is so universal,' says Verhulst, 'but why is the sequence of events leading to sex determination so complex? It's different for nearly every species. How did that come about? To find that out, you have to know how it works in as many species as possible. And that's where we've made some progress now.' ■

■



The *wom* of the mother is inactive. After fertilization, the *wom* of the father causes the development of a female, through the transformer gene (*tra*) and *doublesex* (not shown). Without that signal, the *tra* does nothing and *doublesex* prompts the development of a male. Illustration Eveline C. Verhulst. Photos Jitte Groothuis

Nasonia vitripennis female on the tip of a pencil

Researcher and former pro swimmer Rieneke Terink:

STILL WORKING ON EXERCISE

As a former top sports pro, researcher Rieneke Terink is well aware of the importance of looking after your health. This month she graduated with a PhD for her study of the effect of exercise and diet on stress and the immune system.

Text Tessa Louwerens

Terink took up swimming fairly late, at the age of 13. But it was as a student that she really got going, training for about 25 hours a week alongside her studies. She swam in her first European Championship at the age of 22. 'The fact that I started relatively late was part of the reason I went on enjoying swimming for so long.'

But you were also drawn to science.
'That switch happened slowly. I first started as a researcher at the Radboud University Medical Centre. That was part-time because I was still swimming for 25 hours a week. In 2015, I decided to stop swimming at that high level and commit myself to science. I don't regret that because I think I got as much as I could out of the sport – I might even have been past my peak. I noticed that I wasn't enjoying it as much anymore and I wanted to use my brain more. With a Master's in Cell Biology in the bag, I applied for a PhD position at WUR.'

You studied the effects of exertion on the body. Did you find anything surprising?
'One of the things I looked at was the effect of acute exertion, such as a cycling test. We discovered that blood levels of magnesium go down, but that they recover fast afterwards. That is probably because of a natural variation that is needed to get magnesium to the right parts of the body. That means you don't necessarily need supplements.

We also looked at what happens when there is repeated exertion. To do that we monitored walkers on a four-day walking event. I was surprised by how fast these people recovered, even though they were not high-level athletes. On the first day, we saw a big spike in inflammation markers, and their iron levels went all over the place. Their bodies were challenged, but adapted fast and on the third and fourth days we didn't see much going on. People are resilient.'

Why does exercise interest you so much?
'There are so many different facets to exercise. You can use it for so much more than just losing weight, for instance. It can strengthen your immune system or improve your mood. I am tremendously curious as to

'A LOW-CARB DIET DOES NOTHING FOR YOUR SPORTING ACHIEVEMENTS'

'I do triathlons for fun. As a PhD student I could easily go for a bike ride in my spare time or go running with my colleagues in the lunch hour.' Photo Hendrik Walda

how this all works, and also how you can influence it with diet. For example, it's possible that diet and exercise contribute to how well a vaccine works.'

What's the role of diet in training for a sport?

'We looked specifically at the ketogenic or the low-carbohydrate diet, which is popular with athletes and gets recommended by various influencers. The idea is that you eat very little carbohydrate – two slices of bread and an apple is too much even – but plenty of fat. That is supposed to stimulate your fat metabolism and enable you to go on exercising for longer. Only there hasn't been enough research on that yet. Our conclusion, anyway, was that such a diet does nothing for your sporting achievements. We also saw in our test subjects that their levels of the stress hormone cortisol went through the roof after a couple of days. Now there is still disagreement as to whether that is harmful. But we do know that chronically raised levels of cortisol suppress your immune system. We didn't measure them for that long, though.'

Did you carry on with sport?

'After swimming I started doing triathlons. I was used to cycling as training for swimming. Running was new and took some getting used to, I have to say. I do triathlons for fun and I don't have to train for 25 hours a week anymore. As a PhD student I could easily go for a bike ride in my spare time or go running with in the lunch hour. It's easy to combine that with the work and it's relaxing.'

Did you learn anything new from your PhD research on nutrition and sport?

'I talked to numerous nutrition researchers and gained a lot of new insight into the importance of diet. If I had known all that when I was swimming competitively, I could have adjusted my diet to my training programme better. At that time I tended to eat the same things all year round.'

'I hope that we can make more use of the combination of exercise and nutrition to improve people's health and help patients make a good recovery. Now it is often either exercise or nutrition. I am now working at the Gelderse Vallei hospital, where I support sports doctors and SportsValley. One of the things I research there is how to prevent ligament injuries using diet and exercise. I'm still doing that in the Eat2Move project, which WUR is involved in too.' ■

Rieneke Terink (36)
Graduated with a PhD last month in the department of Human Nutrition & Health. She studied the effects of exertion on micronutrient status, stress and immune response, including among athletes. Before she started her PhD she herself was a top swimmer, participating in European Championships and a World Cup. Terink lives in Wageningen with her husband and two daughters (Puck of two and a half and Zoey of four months).

Melanie Peters, director of the Rathenau Institute:

‘Science and technology have become political’

China does not influence WUR’s research because that research takes place in the public domain and everything is published, claimed Wageningen researchers in *Resource* (5 November). That is naïve, says Melanie Peters, director of the Rathenau Institute.

Text Albert Sikkema

Wageningse researchers send the DNA of plant varieties to China for DNA sequencing on a regular basis. The Beijing Genomics Institute (BGI), which has hundreds of DNA sequencers, does the research fast and cheaply. No problem, surely? Watch out, says Melanie Peters. BGI provides the DNA information, but keeps a copy of it too. China is working on a digital gene bank, a database in which the DNA of all animal and plant species is stored, including the variation in characteristics within those species. ‘The DNA of Dutch citizens, coming from our hospitals, is sent there for sequencing too. That DNA information is crucial. Do we have access to it? It’s noticeable that China doesn’t send blood samples to Europe or the United States. China is building a sort of Google for DNA information.’

Melanie Peters
Director of the Rathenau Institute

Does that harm anyone? Don’t we have gene banks too?

‘There is nothing against it, as long as everyone shares their information. But the world has changed and there is a global competition going on for knowledge. Knowledge about gene technology and artificial intelligence is protected, big companies monopolize knowledge, and intelligence services hack knowledge. In this world, knowledge is a political weapon. That is why China wants to be autonomous and ahead of the field in gene technology, as does the European Union. Because it can also be used against you.’

How?

‘Take techniques like facial recognition, for example. You can use them for behavioural research, but also for surveillance of population groups. I think you have to

‘CONSIDER BEFOREHAND WHO YOU COLLABORATE WITH AND UNDER WHAT CONDITIONS.’

consider beforehand what the potential dangers of your technology could be and that you should set conditions for its use.’

Surely you don’t want to kill innovations like CRISPR-Cas?

‘CRISPR-Cas was partly discovered in the Netherlands, the French turned it into a tool, and the Americans patented it. That is a rough summary, but the point is: this technology is not freely available, and the Americans now decide the conditions and costs of using it. That doesn’t align with WUR’s mission or with Dutch and European policy. For precisely that reason, a university should consider beforehand who it collaborates with and under what conditions.’

This is not just about China, is it?

‘This applies to all research partners. I think universities must continue to collaborate internationally, but you don’t want an American company or the Chinese government gaining an exclusive position in an area like human DNA data. Which is why the European Union, like China, is now setting up a large sequencing centre so that all that DNA information stays in Europe. And it is why the EU is also investing in artificial intelligence. It wants to be autonomous, precisely because there’s a technology war on.’

Response from WUR

We are aware of the sensitive nature of work with countries like China. WUR does business with BGI Group, a listed company. WUR has commercial contracts with this company and on completion of the contracts, BGI destroys all samples and sequence data. The Chinese national gene bank CNGB falls under BGI Group too. The gene bank is a not-for-profit organization that our gene bank works with.

We make carefully considered decisions about who we work with and on what, following strict norms to guarantee the independence of research. In the internal memo ‘Guidelines for WUR business in China’ there are guidelines on integrity, intellectual property, ethics and anti-corruption, and a clear decision-making procedure. We do not enter into a collaboration if it would compromise WUR’s reliability.

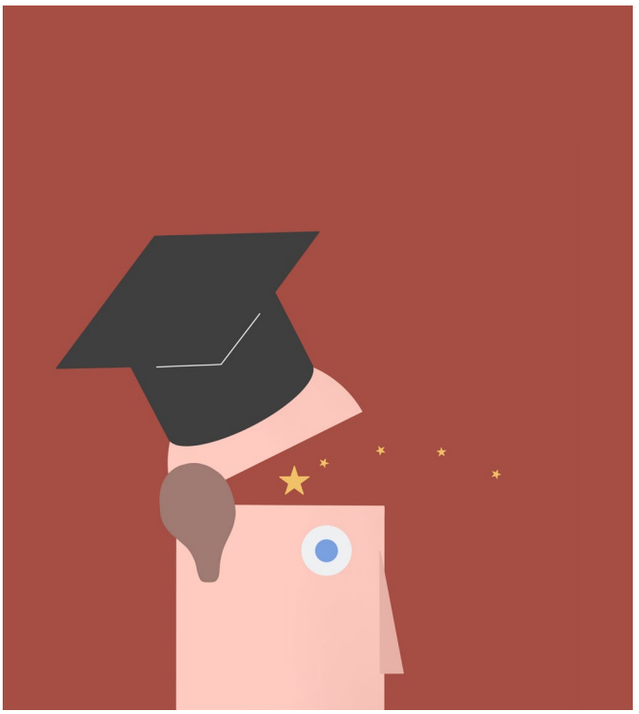


Illustration Studio Geniek

What can a research institute do, practically?

‘First, opt for long-term research with public and private sector partners who you know to be willing to make the technology widely available. As a university, you can select your partners on that basis. And your research strategy can address the question: what impact do I want to have and with which partners do I want to work towards it?’

‘Secondly: protect your data properly. We used to do that: Dutch data on nuclear energy and weapons was well protected after it was found to have been leaked to Pakistan. Now you have to think about digital and genetic information and geo-data. You need to establish who gets access to that data. When researchers work with datasets belonging to the police or a supermarket chain, they work in that organization’s building, so the data stay there. That’s how organizations protect their data. Universities and institutes can protect their data in the same way. Find out where the sensitive data are, and create a kind of biosafety lab there that nothing is allowed to leak from. You have to establish access rules that apply to everyone.’ ■

In other news science with a wink

I KNOW YOU (1)

Do you always remember a face? Then researchers at the University of New South Wales in Australia have the perfect test for you. The UNSW Face Test (google it) was developed to identify so-called super-recognizers: people with an absurd ability to recognize faces. The researchers are investigating what is behind that ability.

I KNOW YOU (2)

About one to two per cent of people are super-recognizers. It's a genetically determined ability. The test is designed to be so difficult that only super-recognizers will succeed. So far, nobody has achieved a perfect score. Most participants manage around 50-60 per cent. The test is free and takes about 20 minutes to complete. Fancy a challenge? Your editor got 68 per cent, almost in the top 10 per cent.

BETWEEN THE EARS

The structure of our brains bears a strong resemblance to that of galaxies in space. That is what a brain surgeon and an astrophysicist from the universities of Verona and Bologna have concluded. They suspect neurons and galaxies are subject to similar structuring principles, though caused by different physical forces. Could it be true after all that there's a universe inside our heads?

UNDER PRESSURE

Researchers at the Australian National University have managed to make diamonds at room temperature. In nature, diamonds form deep inside the Earth when carbon is subjected to high temperatures (>1000 degrees Celsius) and pressure. In the lab, it proved possible with just the high pressure. To be precise: a pressure equivalent to 640 African elephants standing on the point of a ballet shoe. Weighty research. RK

Diary of a caretaker

Bedroom

In January I had an appointment for a pre-move inspection of a PhD house on the Salverdaplein, occupied by an Indian family. I rang the bell around eight in the morning, while it was still dark and cold outside. A friendly man opened the door, wished me good morning and asked me to take off my shoes. Luckily I didn't have any holes in my socks, but in the dark that morning I had put on an odd pair with different colours. Wasn't paying attention.

'He asked me to be quiet because everyone in the house was still asleep'

The resident whispered that he would be working for the university for another month and then he would return to India together with his wife and three children. He asked me to be quiet because everyone in the house was still asleep. I carried out my inspection, quietly shuffling around in my mismatched socks. His wife was sleeping in a dark room and in the other bedroom I saw two children fast asleep. 'Didn't he mention three children?' I thought to myself as I reached the boiler room: a small, warm space without carpeting, ventilation or windows.

'Please be very quiet,' the man said. I carefully opened the door and got quite a shock: a small boy of around five was sleeping on a mattress on the floor. I turned around and looked at the man in astonishment, whispering: 'What is this! Why is he sleeping in the boiler room?' 'We only have two bedrooms,' the man said, 'and this is a sort of private bedroom.'

I proposed that we discuss it further outside, where I told him I would return the following afternoon, when everyone was awake, for a proper inspection.

I asked him to create a space somewhere more normal for his son to sleep. When I came back to the house the next day I found the bed in the living room.

Eugene van Meteren works for student housing provider Idealis as a caretaker. He writes about his experiences for Resource. Read all his columns on resource-online.nl.

Campus ◆ companies

KWS Vegetables

'I'm the first vegetable guy at KWS,' says Paul Degreef, head of the KWS Vegetables business unit. With a revenue of 1.5 billion euros, the German company KWS is the fourth largest plant-breeding company in the world. Having grown to this size producing seeds for cereals, sugar beets and maize, KWS is now targeting the fast-growing market in vegetable seeds. Degreef's job is to set up his own division from his office in Plus Ultra II. KWS has bought a plant-breeding company in Andijk and set up testing locations in Spain, Turkey and Brazil, with more on the way in Italy, India, China and Mexico. Ten employees work at the Wageningen campus now, but plans to establish their own research lab are at an advanced stage. In three years' time there will be 40 to 50 people working for KWS Vegetables in Wageningen.

'The atmosphere is fantastic with so many young people around'

KWS is developing new varieties of tomato, bell pepper, cucumber, melon and watermelon. The company already had projects with WUR on agricultural crops before coming to Wageningen, but now it also wants to collaborate on vegetables. Degreef envisions partnerships with the Plant Physiology and Genetics research groups and WUR's flavour research team. Degreef has worked for various plant-breeding companies since graduating from Wageningen in 1986. Now he is happy to be back: 'There are lots of good researchers at the campus and the atmosphere is fantastic with so many young people around.' AS

There are about 100 companies on campus. We introduce them to you in Resource. This time: KWS in Plus Ultra II.

All the flavours of the world can be found in the WUR community. Fatma Akın (30), a PhD candidate in the Animal Breeding and Genomics group, takes us to her home country, Turkey.

Flavours of WUR

Dolma

'Turkish cuisine is best known in the western world for the kebab, but it also offers vegetarian dishes like this dolma. My mother makes this for special occasions like Eid, the end of Ramadan.'

1. Boil the sun-dried vegetables for 3-5 minutes until soft. Rinse them under cold water in a sieve. Leave to dry.
2. Heat 2 tbsp of olive oil and fry the onion and garlic. Add the rinsed and strained rice and tomatoes. Cook the rice mixture until it's almost done. Put the rice mixture into a bowl.
3. Mix the remaining ingredients with 1 tbsp of olive oil. Stir this mix through the rice mixture.
4. Stuff the vegetables halfway with the filling. Arrange the stuffed vegetables tightly side by side on the bottom of a large pan (so the filling doesn't spill out).
5. Mix the sauce ingredients and pour the sauce over the dolmas. Then add water so the dolmas are half immersed. Bring to the boil and then simmer on a low heat for 30 minutes. Done!
6. Serve hot or cold with yoghurt and/or dried mint. *Afiyet olsun!*

Ingredients for 2 people:

- 9 sun-dried aubergines
- 18 bell peppers
- Yoghurt

Rice filling

- Half a cup of rice, rinsed
- 1 onion and 2 cloves of garlic, finely chopped
- 2 tomatoes, grated
- 1 tbsp biber salçası (red pepper paste)
- One handful of flat parsley, finely chopped
- 2 tsp each of salt, dried mint and red pepper flakes; 1 teaspoon each of cayenne pepper, cumin and black pepper (all ground)
- The juice of half a lemon
- Olive oil

Sauce

- 1 tbsp tomato puree (salça)
- tsp salt
- 1 tbsp olive oil
- 1 tbsp pomegranate molasses
- Hot water

Fatima Akin (30)
PhD student at Animal Breeding and Genomics

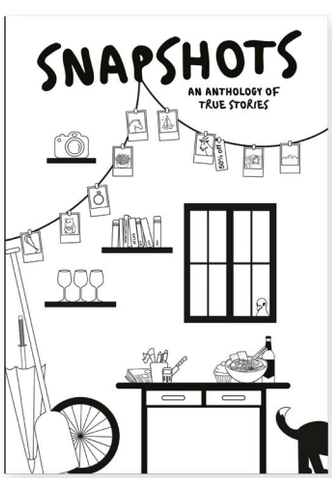
Laughter and tears: a book of the best Wageningen stories

In the absence of live events, Wageningen Storytelling Nights is publishing a book.

Emma Holmes and Sarah Haimes of Fun Times Wageningen used to run six to eight events per month, with storytelling and poetry evenings and workshops as well as the Wageningen Comedy Club. They hardly got rich, but it was enough to get by. Until Covid-19 showed up, everything got cancelled, and they were stuck at home. What to do?

Midnight inspiration

One silver lining to the crisis was the realization that they have a horde of loyal fans. Holmes: 'The messages flooded in. People were asking if they could donate to help us. It was very touching, but I did want to do something in return for that help.' Hence the idea of a book that would immortalize all the stories usually only told in person at their events. 'It came to me late one evening in May. I lay awake half the night thinking about it and immediately started sending out emails the next morning. I approached everyone who had ever participated in one of our storytelling nights. They aren't just funny or feelgood stories. There's all sorts, from bad dates and embarrassing family dramas to stories about abuse or near-death experiences. These storytelling evenings create a real bond between the storytellers and the audience. That's the feeling I wanted to capture in a book.'



International

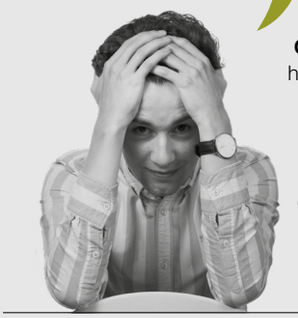
The result is 35 stories set on 5 continents and told by people of 18 different nationalities. 'Wageningen is the common factor. All these people studied in Wageningen, live here, or have done in the past. Some stories happened years ago, but there's also a more recent story about what a day in the life of a student looks like during quarantine.'

'They aren't just funny or feelgood stories. There's all sorts'

Compiling a book and organizing comedy nights turned out to be two different ball games. Emma: 'Sometimes I wondered why we ever started the project. Collecting the stories is one thing, but then you have to edit them all. You reach a point where you've read a text so often you start to question the spelling of words you've been using for years. But now I can hold the first proofs in my hands I'm really proud.' CJ

The book *Snapshots, an anthology of true stories* will go on sale on Wednesday 2 December, via www.funtimeswageningen.com

Blog: Nothing at all



Geert van Zandbrink has almost completed his Bachelor's in Economics & Governance. In February, he will continue his studies at the University of Amsterdam.

For the average Dutch Bachelor's student, the drill for Wageningen nightlife is crystal clear: Monday is year-club evening, Tuesday is your evening at home, Wednesday is reserved for the debating club or societies. That is, if you are a member. Finally, the whole gang goes out on Thursday evening, member or not, to open parties at Loburg, Nji-Sri or discos in Felisco or Utopia, the Ceres and KSV basements.

When the coronavirus disrupted the fixed structure of student society life, some members found this quite refreshing. It meant your week was no longer pre-planned. There was a whole lot of nothing at all, except what you considered sufficiently essential to risk contracting Covid for, so to speak.

I myself had already put my association life on the back burner to create more freedom. However, since the start of the coronavirus pandemic in March, Wageningen student housing culture has also been affected. Typically, a student house is a home you can fall back on while running this way and that outside. Now, our social life takes place mostly indoors. This may be enough for some, but others may live alone, or with housemates who have returned to their parents for the duration of the pandemic. Although I am blessed with my house, I, too, need a break now and then.

> When a housemate returns from one of these important strolls, the entire house is all ears.

Social contacts outside consist of walks with friends. I now meet fellow year-club members, debating club members or students who I normally saw in a group one by one, and one on one. When a housemate returns from one such important walk, the entire house is all ears, eager to hear news from other sources.

Students are resilient, but even our flexibility has its limits. The most pressing wish may well be to finally enjoy a party again. I, for one, can't wait to find myself in one of Wageningen's dirty disco basements.

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.

Contact Questions and comments for the editors: resource@wur.nl | www.resource-online.nl

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[no]WURries

I have a question I'd rather ask anonymously. It's about my neighbour upstairs, whose bed seems to be up against the radiator. Since central heating pipes carry sound very well, I am sometimes kept awake at night by the 'rhythmic banging' of the bed against the radiator. How can I mention this to my neighbour without being too explicit?

Student S.
(full name known to the editor)

Joke

'I can imagine that you want to stay on good terms with your upstairs neighbour. Instead of raising it directly, you could make a light-hearted, apparently naïve comment. Say how impressed you are by his musical talent on the radiator. That way you break the ice from the start. Then you could jokingly ask whether he could tone down his drumming practice and avoid practising after bedtime.'
Janneke Elzinga – PhD Microbiology

Raise it

'This is quite a common problem. But I would suggest raising it carefully with your neighbour. I know from experience that housemates nearly always respond well. If you can't face raising it, you could get in touch with the caretaker of your complex. He could talk to the guy upstairs about the nightly banging noises.'
Eugene van Meteren – Idealis caretaker

Fight back

'Quite an embarrassing situation. If you know who's living upstairs, you could say something when you run into them: ''I often hear your bed banging against the radiator. Great that you're having such a good time, but maybe you could move your bed so I can get some sleep?'' If you say it good-humouredly, the person is sure not to mind. And if that doesn't work, you can always start banging on the radiator yourself to make clear how noisy it is.'
Kim Hartman – online editor

Read this mag

'No one likes finding out they've been audible during intimate moments. Maybe this feature is the most indirect way of letting your upstairs neighbour know. So, students: check whether your bed is next to a radiator. If it is, push it out a bit and put a soft pillow between your bed and the radiator. S, if the noise goes on, just knock on your neighbour's door and say the knocking against the radiator is bothering you. It's nicer for them if their intimate moments are just between the two of them.'
Steven Bernsen – student of Agrotechnology

NEXT WURRY

It's nearly Christmas and many of our international colleagues can't go home, for example because they would have to go into quarantine there for two weeks first. Who has tips for international WUR staff and how we can help one another this Christmas?

Guido Camps, researcher in the Nutrition & Health group and OnePlanet Research Centre

Do you have advice or tips for this Wurrier? **Email us (max. 100 words) before 8 December at resource@wur.nl** *with subject 'noWURries #8' Need some advice yourself? Email your problem (max. 100 words) to resource@wur.nl with subject 'noWURries'.*