WUR from within: straight, sharp, transparent

No 16

Resource

APRIL 2021 VOLUME 15

Finally!
Field trips for students

Just 2000
mosquitoes to go

Sky rivers:
how rain travels

How will we work
after Covid?

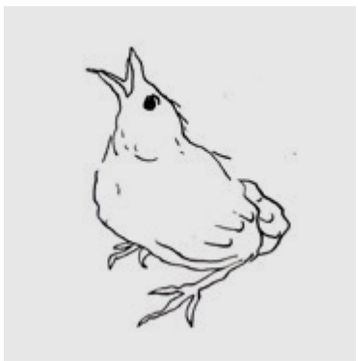
Catching bugs
with light

Safer education with self-testing? | p18

EN

Contents

NO 16 VOLUME 15



FOREWORD

Covid lesson

Staff are getting another opportunity to think about their campus workplaces (see page 12). How many days a week do they want to work from home, what criteria must the work areas meet, how can they share desks? But this time it's post-Covid. When the Executive Board last wanted to roll out MyWURspace, you had enthusiastic supporters of shared office space and adamant opponents. Wishful thinking and fear reigned supreme, leading to widespread negativity in WUR Council's surveys. I think the situation's different now. Everyone has relevant experience thanks to the Covid crisis. Some people I speak to are desperate to get back on campus; others love working from home. Everyone has a better picture of what you need from a campus workspace. We've become knowledgeable, realistic and assertive. So *something* good has come from that annoying virus.

Albert Sikkema
Resource editor

Read the latest news and background stories at resource-online.nl

BEES

Ten ‘bee hotels’ have been fitted onto lamp posts in Wageningen town centre by students involved in Enactus, an organization that introduces students to social entrepreneurialism. ‘The idea is simple but new,’ says Food Digestion and Health Master’s student Zoe van Helvoirt (up the ladder), who is in the project team. ‘We make insect hotels and attach them to lamp posts.’ Wageningen town council helped the students by giving them money and letting them use certain lamp posts. Urban ecologist Taric Schrader helped the students choose the sites. LZ

Read more and see the photo series at resource-online.nl

Photo Florine Zegers

Big Data professor

Ioannis Athanasiadis from Greece has been appointed professor of Artificial Intelligence and Data Science. The Executive Board says this demonstrates the increasing importance of Big Data and artificial intelligence in science and education. Athanasiadis is in the Geo-information Science and Remote Sensing chair group. He has previously worked in the Social Sciences Group (SSG) and Environmental Sciences Group (ESG). Athanasiadis teaches the Deep Learning and Smart Environment courses and he was the man behind the Data Science minor. The new professor is also the co-founder of the start-up AgOS. Athanasiadis graduated from the Aristotle University of Thessaloniki. He is Wageningen's first Greek professor. RK

Photo WUR

Vici grant for Ewout Frankema

Ewout Frankema, professor of Rural and Environmental History at WUR, has received a Vici grant from the Dutch Research Council of 1.5 million euros. This will let him study the underlying historical reasons why countries in Southeast Asia have experienced rapid economic development since 1970 while economic growth has been sluggish in almost all African countries. Various explanations have been given for this 'South-South divergence', says Frankema, including the Green Revolution and differences in education. 'But the deeper historical factors have barely been studied.' He will try to identify these factors by examining historical sources about trade, migration and capital flows in Africa and Asia. The Vici grant will let him take on a postdoc and three PhD candidates. RK

More campus teaching from period 6

The government has given the go-ahead for on-campus teaching one day a week.

As of Monday 26 April, students have been allowed to attend classes on campus one day a week. The caretaker prime minister Mark Rutte announced this at the Covid press conference on Tuesday 20 April.
The relaxation of the restrictions does not mean all Wageningen students are getting on-campus lessons straight away, but more will be possible in period 6 — which starts on Monday 10 May. Essentially, the situation will to return to how it was last autumn, but with the addition of self-testing. So on-campus education is possible but the mandate for making the choice between on-campus and online teaching lies with the teacher. Fieldwork was already permitted in groups of up to 30 students; now multi-day excursions will be allowed again too. But you can only take part in these if you do a coronavirus self-test every day.

Self-testing

Self-testing is not compulsory for the on-campus education but it is highly recommended (see too the article on pages 18-19). WUR recommends doing one self-test a week. Students and teaching staff should have received information about ordering free self--tests via their WUR mailbox. All other rules, including the 1.5 metres rule, still apply.
Other measures to relax the rules will also affect students but the Cabinet had not yet taken a final decision on them when we went to press. The plan is for outdoor cafe seating to open (from 12:00 to 18:00 with two people per table), the curfew to end and the number of permitted guests in your home to increase to two per day.

> The mandate for deciding between on-campus and online teaching lies with the teacher

For more stories about the Covid measures, self-testing, relaxation of the rules and protocols for students and teachers, see www.resource-online.nl LZ

72

That is how many students took part in the biggest event in WUR's student sports calendar this year: the student chess championship. It was held for the eighth time on 12 April, online and starting at 19:30. The 72 participants played seven games each in a tournament that lasted two hours. Four chess players won six of their seven games. Thomas van Polen (23) won the tournament based on inter-player results and performance points. 'I came fourth last year. I'm pleased with my win; everything went my way.' LZ

How are things?

We've been working and studying from home for over a year now. How are you feeling? How's your motivation? What do you expect from the future? We'd like to know! Various independent university news organizations (including Resource) have joined forces with the firm Newcom to produce a survey of the well-being of students and staff. We hope *you* will fill in the questionnaire too. It takes about seven minutes to complete and it's anonymous. Scan this QR code to start it or see our website. We expect to come up with the first results in mid-May.

Typical (old) Dutch Queenlessness

Illustration Henk van Ruitenbeek

'In 2010 I had an assignment to use participant observation on Queen's Day (30 April). Interestingly, the main finding was: the 'Queenlessness' of Queen's Day. Queen's Day is a national holiday to celebrate the birthday of the Dutch Queen. My Asiatic background led me to expect to see pictures of the royal family on the street, on people's T-shirts, or as souvenirs that people sell in the market. For example, it is common to see pictures of the King of Thailand in every corner of the country. One may generalize that in Asian countries there is an overflowing admiration of the king, the royal family or other leaders. But as I partied among the orange crowds, I found no pictures of the Queen; I hardly even heard any talk about her. Talking with my Dutch friends, I found out that the emphasis is more about taking a day off, checking out the 'free market' (*vrijmarkt*), and enjoying music performances. The Queen is not present in pictures, but by being thoughtful enough to give the nation a day off on a lovely spring day instead of on her real birthday in the horrible winter.'

'It is common to see pictures of the King of Thailand in every corner of the country'

If you have a nice anecdote about your experience of going Dutch, send it in (300 words max). Send it to resource@wur.nl and earn 25 euros and Dutch candy.

This Typical Dutch was previously published in Resource on 21 April 2011 and was sent in by **Steisianasari Mileiva (Indonesia)**, doing an MSc in Development & Rural Innovation at the time.

Swans are colonizing the campus

One pair of swans has used the Forum pond for breeding for years, always in the same spot. But this year they are not alone, as the pond near the Dassenbos wood also has breeding swans. That pair has found a spot literally in the shade of the new Aurora building.

The two pairs share a complete disregard for the human activity around them. 'The degree to which a bird is bothered by that depends on the species,' says ecologist Wieger Wamelink. 'The Aurora swans chose to build their nest there at a time when construction was long underway. At Forum, where they are now installing the thermal storage system, a screen was put up at my request. Apparently that was enough.'
Wamelink is, however, surprised that the two pairs don't mind being so close together. 'I would have expected the Forum swans to chase the others away, which is what happened last year. But perhaps they are related, which would explain their tolerance.' RK

Photo Roelof Kleis

Photo Roelof Kleis

Requiem for an artwork

Pieter Blaauboer's artwork in front of the Transitorium building at De Dreijen is set to be demolished soon. The work, a '3D brick creation' of raised pyramid-like sections in the paving, was made in 1971. The artwork was the first work in the landscape art genre by Pieter Blaauboer, who studied landscape architecture at Wageningen. But now the work is in danger of being destroyed. The Transitorium is due to be demolished any day now. Attempts by people including the artist Laurens van der Zee (who manages a website about the sculptures of Wageningen) to save the work seem likely to be too late. 'We already have so little landscape art in Wageningen. This is the only work by Blaauboer in the town.' RK

New plan for campus accommodation

The Executive Board is working on a new strategic accommodation plan that will go to the WUR Council in June, says Board member Rens Buchwaldt.

The plan will set out how much office space and other working space the Board wants to create on campus. Part of this post-Covid accommodation plan is a Working Environment Concept that the Board already sent to the Council this month. The concept describes elements for setting up office space on campus if staff are going to be working from home more (see page 12). This concept will help departments develop a plan for an optimum set-up that lets employees share the working area on campus. The Board wants to have additional training and tools in place for these accommodation plans by the start of the new academic year.

> 'The directors will decide what is needed for their divisions and draw up proposals for the layout and required investments'

The Working Environment Concept provides for the possible refurbishment of the office units on campus. 'The various directors will decide what is needed for their divisions and draw up proposals for the layout and required investments,' explains Buchwaldt. 'The strategic accommodation plan sets the parameters for this.' The process will take several years. There will probably also be a budget for facilitating staff working at home. That budget will be determined in the national collective labour agreement negotiations. AS

See page 12 for a long read on the plans for remote working and the Working Environment Concept.

Brassicas use necrosis selectively

Some brassicas kill off parts of their leaves if certain butterflies lay eggs on them.

Some crops in the brassica family (*Brassicaceae*) have an unusual mechanism for defending themselves against hungry butterfly caterpillars. After butterflies have laid their eggs on a leaf, necrosis occurs (the plant tissue dies). That makes the eggs die too, so no caterpillars can develop. Scientists have known about this 'scorched earth' tactic since the 1980s but recent Wageningen research has provided new insights. The tactic is only used by a closely related group of plants within the brassica family and only for certain butterflies.

Eggs

Nina Fatouros, a researcher in the Biosystematics group, and her colleagues studied 31 species of this family. They put a fluid on the leaves that contained the eggs of butterfly species that commonly lay eggs on that plant. Four closely related plant species developed necrosis after the fluid was applied, but only if the eggs were of the cabbage white butterfly (*Pieris*). This suggests that specific butterfly species trigger the necrosis in brassicas, argues Fatouros in an article in *New Phytologist*. The necrosis is part of an evolutionary arms race between the brassicas and the cabbage whites. AS

Specific butterfly species trigger necrosis in brassicas

Diatoms reveal where water comes from

Algae known as diatoms in water samples can tell you where the water in a river comes from. This finding is from a study by the Belgian Jasper Foets.

Diatoms are unicellular algae invisible to the naked eye. They have a hard outer shell made of silica. The geometric patterns on this skeleton are real works of art, as can be seen under an electron microscope. Over 64,000 different species are currently known, but there are many more.

'I regularly had to look them up in identification guides'

Each soil has its own diatom community. That diversity makes it possible to use them as 'informers' in river currents. Water that was discharged from soil upstream carries the soil's diatoms with it. So analysing the diatoms in a water sample can tell you where that water originated.

Foets studied hundreds of soil samples in the drainage basin of the River Attert, in southern Belgium, under the microscope to identify the characteristic communities of diatoms. It was a painstaking endeavour. 'Sometimes I could only manage two samples in a day. There were about 200 species that occurred frequently. They included common species but I often had to look up a species in identification guides.'

Ploughed up

Foets found good indicator species for the acidity, moisture content and land use of the water's place of origin. He also showed that farming the land has a big impact on diatom communities. Ploughing, for example, changes the composition of the diatom community. That makes it difficult to trace water's origins when the countryside is not left undisturbed.

Using diatoms to trace water is currently too laborious and therefore too expensive. But Foets says genetic analysis of the samples using DNA barcoding could speed up the process a lot. 'It will eventually become much easier and quicker.' RK

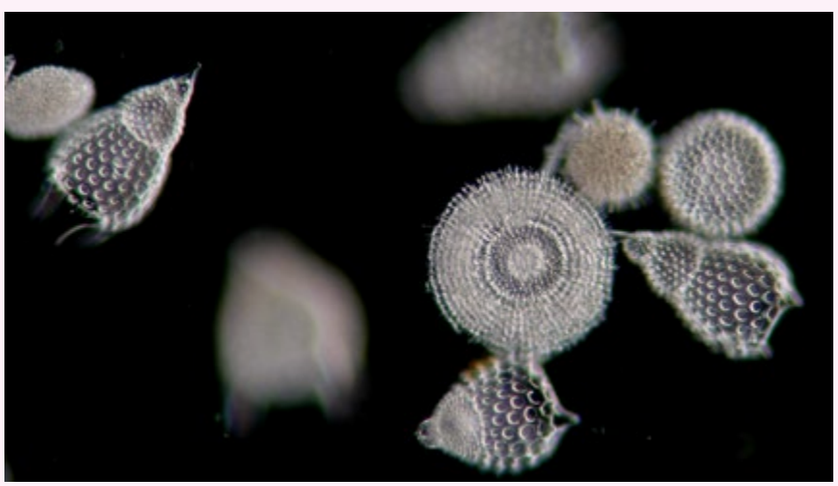


Photo Shutterstock

A Little Wiser

Do birds kick out their young if they smell of humans?

Your intentions might be good, but if chicks fall out of a nest you mustn't try to put them back. That's what you were always told as a kid. Because if you touch them, they will smell of humans and the parent birds will reject them. Well-meant advice, but it's nonsense. 'Birds can smell,' says Marc Naguib, professor of Behavioural Ecology. 'But with a few exceptions — such as the nearly blind kiwi which hunts for food at night and depends on its nose — the sense of smell isn't nearly as well developed in birds as the sense of hearing, for instance. A lot of studies have been done around the world in which chicks are taken from the nest to ring them and take blood samples. They're put back and there's never any problem. So the human scent isn't that important and the parents won't reject their young.'

However, it is not a good idea to move young birds. 'When the chicks leave the nest, they still need to practise flying,' says Naguib. 'Sometimes they end up on the ground. The parents are often nearby and still feeding their young but they will only approach once you are out of sight again. So keep watch from a distance. If you still don't see the parents, then you can put the young ones back. Check first whether there are other chicks in the nest: if it's empty, the parents are unlikely to come back because the offspring have flown the nest.'

If you think the parents are gone, you can phone the animal ambulance or take the young bird to a bird shelter. Naguib: 'It's difficult to raise a chick by hand because they often need very specific food.' And death is a fact of life, however sad. There are good reasons why blue tits lay an average of ten eggs: eight of the chicks die before reaching adulthood. Naguib advises against opening nest boxes to look at the chicks. 'That can cause stress and prompt the parents to leave the nest, or else the chicks fly off too soon and don't survive.' TL

'If you want to put a chick back, check that the nest isn't already empty'

Marc Naguib, professor of Behavioural Ecology

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

Catching bugs with LED lights

The European tarnished plant bug is a pest for growers. LED lights under a water trap can put a stop to this.

The European tarnished plant bug (*Lygus rugulipennis* Poppius) is a serious problem for farmers who grow crops such as aubergines, cucumbers and chrysanthemums. The bugs damage the flower buds, causing fruit deformation or rejection and big losses as a result. Restrictions in the use of pesticides makes catching the bugs the only option. This is currently done using pheromones, but with limited success.

Pheromones (sexual attractants) only catch a fraction of the bugs and only the males. Entomologist Rob van Tol can catch 20 to 30 times as many using a trap with light and water. And he gets both male and female bugs. The trap consists of a tub with a transparent bottom, illuminated from below by white LED light. The bugs are attracted to the light, get into the water and drown.

Photo Wikimedia commons

White light

The use of light to lure insects into water is not new. However, Van Tol explains that previous methods lit the water from above. 'This causes reflection and polarization of the light, which actually repels the insects.' To tackle this issue, Van Tol mounted the LED light under the water. This has the added benefit of protecting the light from the greenhouse sprinklers. Tests in chrysanthemum growers' greenhouses proved the trap works. And surprisingly, it works best with ordinary white LED light. 'That's surprising and frustrating,' says Van Tol. Frustrating because he has no idea why. Wind tunnel tests in the lab show that the bugs have a marked preference for UV-A light (340-400 nm) over other colours.

'In the greenhouse, what works best is all colours combined, i.e. white light,' Van Tol explains. 'In the wind tunnel, a single colour, UV-A, works best. That's odd. We don't yet know why this is. Perhaps the brightness of the light is relevant. In the wind tunnel, the bugs are released close to the light, while the distance to the trap in the greenhouse may be many metres.'

'All colours combined, i.e. white light, works best in the greenhouse'

Test case

Whatever the reason, the result still stands: the light-plus-water trap works. In follow-up studies, Van Tol aims to optimize the setup. 'What proportion of the bugs flying into the greenhouse can we catch? Can we catch large numbers of bugs, and if so, how many traps do we need per square metre? And importantly, do the results outweigh the investment?'

European tarnished plant bugs must be caught when they migrate, which occurs for a few weeks twice a year in the spring and autumn. It is then that they enter the greenhouse through the open roof vents. Timely detection is of the essence. Van Tol: 'I am currently involved in a new project in which we'll be monitoring pest insects using automatic detection. The light-plus-water trap for European tarnished plant bugs is one of the possible test cases.' RK

Just 2000 envelopes to go

In February, WUR entomologists asked the Dutch to 'swat a mosquito and send it in' so they could study the dead mosquitoes. The Entomology Mosquito Radar project can't complain about the response. Photos Guy Ackermans

They have received between 5000 and 6000 envelopes with mosquitoes, says PhD candidate Rody Blom. His task is to open them, along with any colleagues who have time to spare on Mondays and Fridays. They have already sifted through 3500 envelopes.

Today Blom, Master's student Jet Griep and postdoc Emily Pascoe are working at tables with piles of envelopes. First, they check whether the envelope contains a mosquito. They distinguish between *Culex* (the common Dutch house mosquito), *Culiseta* (a larger mosquito) and *Anopheles* (the genus that transmits malaria). Everyone who sends in a mosquito also fills in a form with their details including their postcode, so Blom knows where the mosquitoes come from. That lets him see for example whether more mosquitoes survive the winter on the coast compared with inland.

If the dead mosquitoes still contain blood, the researchers can do a blood meal analysis. They use the DNA in the blood to try and work out what animal the mosquito bit last. The mosquitoes will eventually be sent to Erasmus University in Rotterdam where they will be examined to see if they contain pathogenic viruses. Examples are the West Nile virus, which can cause fever and flu symptoms in humans and horses, and the Usutu virus, which can kill songbirds. 'We want to get a better understanding of how viruses spread in mosquito populations,' explains Blom.

He still has 2000 envelopes to go.

PhD candidate Rody Blom.

'We want to understand how viruses spread in mosquito populations'

A lot of people included a card or drawing in their envelope. Nearly all contributors wrapped the mosquitoes in empty bottle tops, just as instructed. Blom keeps the bottle tops, which will go to the foundation for guide dogs for the blind. AS

Entrepreneurial

Guido Camps

When I came to WUR to work, I didn't have much experience of WUR as an academic entity but I had spent some time at various other universities. One of the big differences between technical universities and other universities that struck me was the strong focus on inventing new things and the way students were encouraged to quickly come up with solutions and market them in a real or imaginary start-up. Not only were students trained in developing an entrepreneurial spirit, many of the professors I had met in Delft and Eindhoven had their own companies, start-ups or at the very least patents registered in their name. Things were different in Wageningen. My first experience with entrepreneurial thinking was the instruction I got to report all my sidelines and only undertake something once I had explicit permission to do so from my manager. I also saw hardly any Wageningen professors who had their own companies or start-ups.

'What could be more inspiring than a teacher talking about their own experience with a business?'

I think we should actually be asking our staff to undertake more such side activities. In my opinion, entrepreneurial thinking and starting an enterprise are important experiences that not only let you earn revenue from your research but can also enrich university education. Not all the students we teach want to become academics; some want to be entrepreneurs. What could be more inspiring than a teacher who can talk about their own experience of setting up a business, whether it was a success or —perhaps actually more educational — a failure? My proposal is for the new *recognition and appreciation* to be based not just on publications, PhDs and other academic factors but also on whether someone has started a company or been able to license a patent. Entrepreneurial students deserve entrepreneurial teachers, and research will only end up at the heart of society if people take it there.

Guido Camps (37) is a vet and a postdoc at the Human Nutrition department. He enjoys baking, beekeeping and unusual animals.

What will work be like after Covid?

Work@Home@Work

Once the pandemic is over, how will we combine working from home with our desks on campus? Each department can come up with its own solution, according to WUR's new Working Environment Concept, but we will definitely be sharing desks with colleagues more.

Text Albert Sikkema

Only last year, WUR had plans to build thousands of square metres of extra office space on campus to accommodate the rapid growth in students and staff. But then the coronavirus hit, emptying the campus for over a year. We worked and studied from home, seemingly without end. But once we have got a grip on Covid — by September 2021, say — we can return to campus.

Surveys last year showed that most members of staff would like to carry on working from home one or two days a week. Based on those results, WUR has drawn up two memorandums under the title Working@WUR. The Remote Working project group wrote a memorandum on working from home. The basic principle is that working from home is not a right or a duty but it *is* an option. And the Strategic Accommodation Plan project group drew up a Working Environment Concept. That includes elements for setting up office space on campus if staff are going to be working from home more. These memorandums will be discussed by the WUR Council in the next two months.

Mix

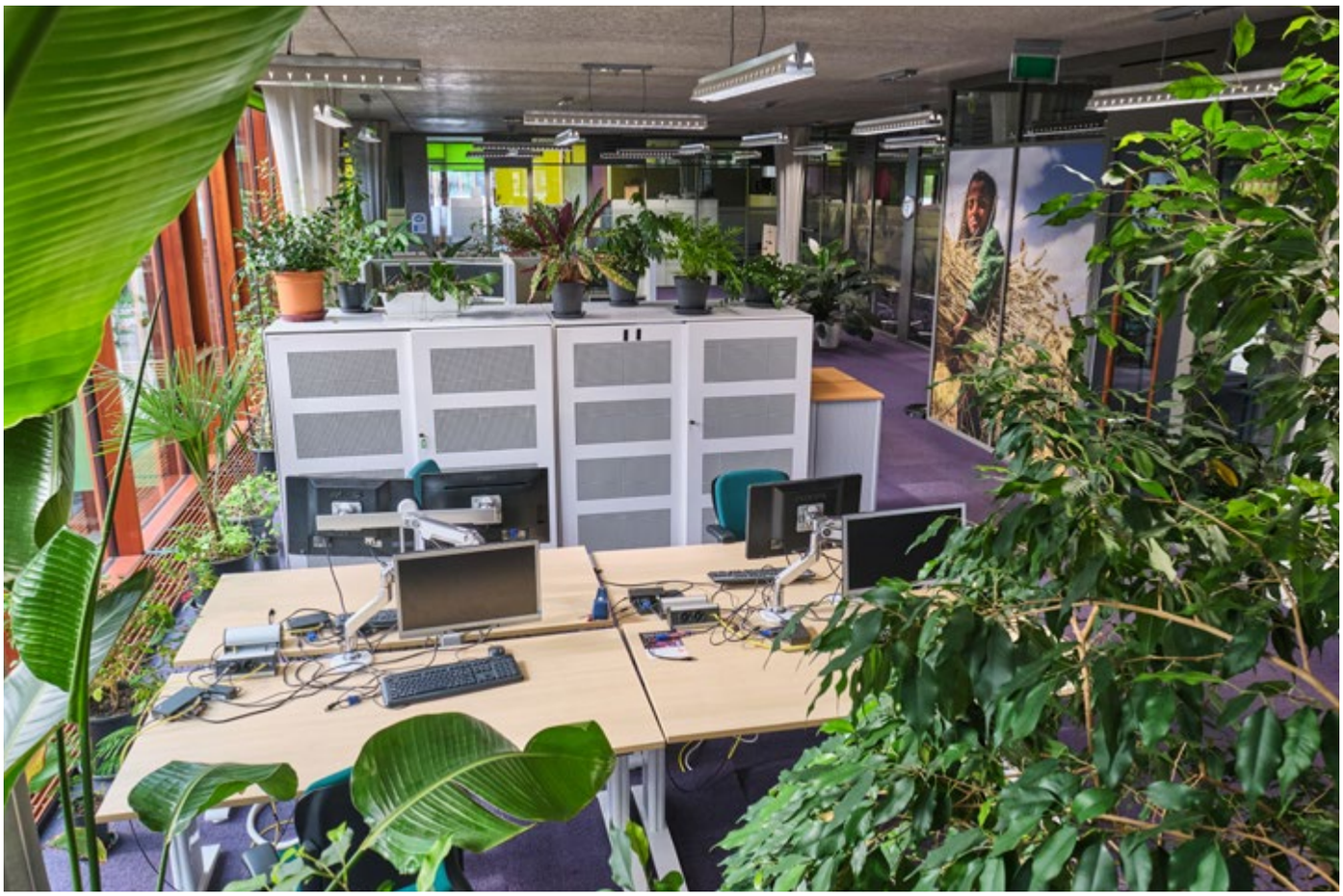
The first memorandum concludes that being forced to work from home during the coronavirus crisis has given us a good understanding of the pros and cons of remote working. The number of WUR staff expecting to work from home more grew during the pandemic from 25 per cent (March 2020) to 45 per cent (July 2020).

Most home workers (60 per cent) expect to work one or two days a week from home in the future. WUR wants to key into this development with 'a flexible mix of physical working and meeting areas on campus and a robust IT infrastructure that is accessible at all times from all places'.

This does require a change in the mindset of directors and managers who like to see what their employees are up to. During the pandemic, they have had trust their employees to continue carrying out their tasks. Which they did: employees' productivity actually rose during the pandemic! A new management approach is required with fewer 'operational processes' (such as progress checks and approvals), says the project group.

The Remote Working project group sketches a picture of the future in 2025 in which employees 'work on global issues in labs, in the field, at home, on the road, on campus, at conferences and at partner organizations'. In other words, all over the place. The project group is currently

WORKING FROM HOME IS NOT A RIGHT OR A DUTY BUT IT *IS* AN OPTION



Radix. Photo Guy Ackermans

assuming 15 per cent of time will be spent working from home on average. That is a conservative estimate but there are WUR employees who have to work entirely on campus, for example because they need to be in the lab or don't have a place to work at home.
WUR will help staff to work autonomously: they will get the scope and be trusted to make their own choices about their work. In this model, the campus becomes a hub where staff meet their colleagues, discuss matters and attend social gatherings. The campus should be designed so that staff feel they are part of the organization and that they are appreciated and acknowledged by their colleagues.
That is precisely what has been lacking during the pandemic. 94 per cent of WUR staff say working remotely is perfectly doable and they like having more control over their working hours. The biggest disadvantage of working from home, they say, is the lack of direct contact with your co-workers. Informal contact in particular has suffered. Employees no longer know what other people are doing in their work and they no longer chat about their private lives. The project group notes that this has affected employee engagement. People may also feel less appreciated because others no longer see what they have achieved.

Blended working, focus rooms, desk sharing, always on call, an app to book a workstation... what do you think of this? How would *you* prefer to work post-Covid? Let us know, and we will report on this in subsequent issues of *Resource*. Send your comments to resource@wur.nl or post them on our website (where you can also find this article): resource-online.nl

Shared desk

Over the past year, a lot of WUR employees have taken part in workshops where they shared ideas about how to combine working from home and on campus and what facilities they need for that. That has led to a new Working Environment Concept. The basic assumption is that staff will share workstations on campus, but can be sure there will always be a workstation available. The employees will share working areas within a department of 60 to 100 people and make their own agreements about how to jointly use the working areas in that department.

WUR WANTS 'A FLEXIBLE MIX OF WORKING AND MEETING AREAS ON CAMPUS AND A ROBUST IT INFRASTRUCTURE'

There will be zones with a department-specific mix of working areas, such as desks, focus rooms and rooms for small meetings (up to six people). Departments can also request 'living rooms' for spontaneous, informal discussions. 'Crumple zones' will be introduced on the perimeter of these zones, with facilities for large meetings that the department can book, as well as extra working areas for if the department grows further.

Model employees

Each department will therefore first make agreements with its staff on when and how often they want to work from home, and then see what mix of working and meeting areas is needed on campus. As inspiration for this process, the project group used 10 'personas': fictitious employees with different jobs and requirements. One of them is Heleen, the professor, who manages 40 employees. She is on the road a lot but when she is on campus, she wants her own office with a table for four people so that she can have meetings with staff and everyone knows where to find her. What will her work look like? In the Working Environment Concept, she will have to book her office for 'her days', so that the room can be used by other people when she is working elsewhere. On other days, she can use the meeting room or living room for informal meetings. So Heleen will have to share her office and tell her colleagues when she will be there. To do that, she can use the new room booking app.

Another persona is Matthijs, an analyst at Wageningen Livestock Research. He works a lot in the labs and animal housing, and when he is not there he wants to be able to concentrate on his work in the office he shares with colleagues. He also needs to be accessible and available because colleagues come to him a lot with questions. How could he achieve this? According to the Working Environment Concept, Matthijs could share the focus area with his co-workers and liaise with them about when he will be in the lab and when in the focus room.

Does everyone have to share their desk? No. Desiree the secretary has her own desk. That is because Desiree plays a key role in the department, she has fixed tasks, people come to her with questions and she is nearly always in the office. So she gets her own room together with her fellow secretaries.

But researcher Tim will not be on campus much, even after the pandemic. He does a lot of desk research on water systems and spends time on site and at conferences. It is easy for him to share a workstation on campus and when he is there, it is mainly for the contact with colleagues. He doesn't need a focus space.

Lecturers

Many lecturers are somewhere in between these examples. They might be teaching a lot in one period and only occasionally in the office to prepare their lessons while in another period they have time for research and supervising student and PhD theses. How can they arrange a workstation when they also work one or two days a week from home? The Working Environment Concept suggests lecturers can work in two rooms. They can reserve a focus-room place for tasks that require concentration and they use a meeting room or living room for supervisor chats. By timetabling this in half-days, they tell students and colleagues when they are available and when they do not want to be disturbed. The concept is intended to get discussions going about blended working. It helps that with our Covid experience, we are now all experts on why we want to work on campus or from home. ■

Photo Shutterstock

THE FACTS

BRAZILIAN DEFORESTATION CAUSED BY LIVESTOCK FARMERS?

Dutch farmers are responsible for a lot of global deforestation, wrote Dutch newspaper *De Volkskrant* on 14 April following a report by WWF. In the Facts section, we check whether this is correct. Text Albert Sikkema

The issue

The *Volkskrant* article was prompted by a report published by the international nature organization WWF. 'The report shows that the Netherlands is one of the biggest European importers of soya. Dutch farmers use soya as animal feed, which is ultimately re-exported as meat. Partly because of this, the Netherlands is responsible for the clearance of nearly 30,000 hectares of virgin forest and other forms of nature every year.'
WWF also published a report on deforestation three months ago. Then too, the WWF press release and various media drew a link between deforestation and the use of soya-based animal feed in the Netherlands. WUR researcher Niki de Sy, who supplied information for the WWF report, called that analysis 'correct but one-sided'.

The facts

First, WWF presented deforestation figures for the period 2005 to 2017. In that period, about five million hectares of nature were turned into farmland every year. What caused this deforestation, according to the report? About one third of the new farmland was used to grow soya for animal feed, and two thirds was used for other agricultural products such as palm oil, coffee, cocoa and beef.
Secondly, WWF used soya import figures, which made the Netherlands a major source of deforestation: 30,000 hectares a year. But a lot of the soya entering the port of Rotterdam is re-exported, in particular to Germany. Statistics Netherlands reports that soya imports in the first six months of 2020 totalled 1.3 billion euros while exports in the same period were 1 billion euros. The exports include processed, more expensive soya so these sums don't necessarily correspond to the same number of kilos. Even so, we can safely conclude that at most a third of the imported soya ends up with Dutch livestock farmers. So 10,000 hectares at most.
But is this lower deforestation figure correct? According to the WWF report, deforestation due to EU soya imports fell by 40 per cent between 2005 and 2017. That was because more and more soya had sustainability certification, saying that no deforestation had taken place. In 2018, 62 per cent of the soya imported by the EU had a sustainability certificate.
What percentage of Dutch animal feed is sustainable? All of it, says Nevedi, the association for the Dutch animal feed sector. Dutch farmers use just over half of one per cent of all the soya produced globally, says Nevedi. 'All the soya used in the Netherlands for animal feed is certified and meets strict sustainability criteria.' Interestingly, WWF knows this as it joined Nevedi and Unilever in establishing the Round Table on Responsible Soy (RTRS) and the EU Soy Sourcing Guidelines.
That puts the deforestation due to Dutch livestock farmers at zero hectares. What WWF wants to achieve with its report is for *all* soya imports to the EU to meet these sustainability criteria — or even stricter rules. WWF is targeting the EU as the latter will be proposing legislation on deforestation in May.

The conclusion

Global deforestation is still continuing at a frightening rate. The EU can help stop this by making sure all soya imports are sustainable. But Dutch livestock farmers already use sustainable animal feed anyway.

FINALLY

Going out on the lake, lifting traps, identifying the catch and other research tasks on the water. Not to mention Covid self-tests, face masks, gloves, disinfecting and one-person tents for students. From Friday 16 to Sunday 18 April, 16 students and five members of staff on the Practical Aquatic Ecology & Water Quality course did their first multi-day WUR field trip since the start of the pandemic. It was a pilot to check whether the Covid protocols work. And also a welcome diversion after a year of online education, says Master's student Judith Epping (23). 'Finally we could do all the things ourselves that we'd seen in the online videos.' LZ

More pics? Check
www.resource-online.nl

Photo Sven Menschel

DIY Covid test

NOT A CAMPUS ENTRY TICKET

As of 26 April, university students will be able to attend classes on campus one day a week. The idea is that free self-tests will make that safer. A good idea or not? Text Marieke Enter

It is doable but takes some getting used to. That was the opinion of the Human Nutrition students who (voluntarily) tried out the Roche self-test at the start of the month for the Human Infectious Diseases practical. If the Ministry of Education has its way, it will soon be perfectly normal for university students and teachers to take a self-test twice a week at home. At least then you know for certain that you can come to campus for face-to-face education without any worries. Well, almost for certain, because there will be no checks for the time being to make sure you really did the test, let alone whether the result was negative. Of course, that also applies to your fellow students and teachers. That free-and-easy approach means you are just as much in the dark about their infectiousness as in the pre-test days. You have to trust that their self-testing regimen has not been undermined by a lack of time, principled objections, anti-vaxxer conspiracy theories or other factors of varying degrees of validity.

False security

Perhaps this false sense of security explains why WUR students do not seem enthusiastic about the rapid-testing university. At least, that is what a quick poll among *Resource* readers shows. Of the 86 people who replied to our Instagram poll, fewer than half said 'yes' unreservedly to the idea of self-tests twice a week. And do they trust their fellow students to religiously perform *their* tests? Hmmm. Perhaps for the first week, but over 70 per cent think that discipline will soon go once the novelty has worn off. And nearly 15 per cent ticked the statement 'No way are students going to do it!' That scepticism seems justified. When the Avans and HAS universities of applied sciences and Koning Willem I regional training college tried out self-testing, it turned out only 30 per cent of students actually did the tests.
So should the tests be made mandatory? WUR is not keen on the idea, the Executive Board says via spokesperson Annet Blanken. 'Of course, we are looking forward eagerly to the moment when we can accommodate all students safely again. But a test is not a campus entry ticket'. Outgoing minister De Jonge said earlier in an interview that he did not expect to see mandatory tests at universities.
However, the possibility that you might one day be required to show a negative test result to be allowed into the lecture hall or lab has not been ruled out. On Friday 16 April, the Cabinet sent proposed legislation to Parliament for the introduction of 'proofs of testing' as

‘A SELF-TEST IS NOT A CAMPUS ENTRY TICKET‘

‘YOU KNOW WHAT STUDENTS ARE LIKE: NO WAY THEY’LL DO IT’

an entry requirement, in principle letting institutions choose whether to use them. But this proposal allows for the possibility of making proofs of testing compulsory in the future in higher education, deemed to be an essential sector. Not immediately maybe, but in extreme circumstances a decree can be issued demanding proof of a negative test for students. But not for teachers, says the Higher Education Press Office. That would be too great an infringement of their rights because refusal could cost them their job.

Double the work

As long as Parliament has not yet had its say on the proposed law on proofs of testing, teaching staff do not know whether they need to allow for stubborn conscientious objectors who refuse to take the tests: the idea is that they will have to develop an alternative to face-to-face education for them if compulsory testing is introduced. A strange idea really, because what teacher is going to prepare equally fantastic face-to-face and online versions of their course? Didn’t we already have a working pressure problem with academics sounding the alarm? Assistant professor Michiel Köhne, who put the red protest cap on *The Sower* during the recent day of action: ‘They undoubtedly haven’t made any arrangements for funding that alternative, which means lecturers will have to develop the alternative version of the course in their research hours or free time.’ And keep it simple by just offering online videos of the on-campus teaching? ‘Sometimes you have no choice, but the worrying thing is that video lectures soon become the norm. Whereas academic education – turning young people into scientists – is obviously much more than that.’

Proof of testing as an entry requirement is not part of the plan at the moment but the Executive Board is an advocate of voluntary tests. ‘The government’s self-tests will make it possible to detect a significant number of asymptomatic Covid patients even before they come to campus,’ says Executive Board spokesperson Blanken. ‘We are currently carrying out some small-scale logistical pilots to make sure we are well prepared when self-tests become available in large numbers.’ She also announces that the ‘Before you come to a WUR location’ checklist will soon be updated to incorporate the new situation.

While more on-campus teaching will be possible from 26 April, the actual distribution of the self-tests still has to be arranged. Minister of Education Van Engelshoven told Parliament that SURF – the collaborative IT venture for the education sector – will have set up a digital portal by early May that students and staff can use to order free tests for delivery to their home. Universities can still ‘open up’ before that is in place. Then you have to hope your fellow students and staff will use the self-tests properly and that the universities are not erecting a huge testing factory just to give people a false sense of security. ■

Illustration Shutterstock

Insects as mini-cattle

On the moral distinction between a cow and a cricket

Do insects have consciousness? Do they feel pain? Can they think? And what does that mean for insect farming? These are some of the questions animal ethics specialist Bernice Bovenkerk considers.

Text Tessa Louwerens

It is dark and sweltering in the barn, with the animals packed in tightly. Some are sick. They will never grow old or leave the barn. They exist purely because they are food. Distressing? Unacceptable? What if we tell you the animals are mealworms?

It is a topic you may not ever have thought about but it has been on Bernice Bovenkerk's research wish list for years. Bovenkerk is an associate professor of Animal Ethics. Now her wish now being fulfilled: she will be investigating the ethical side of insect farming together with PhD candidate Martijn van Loon in the Insectfeed programme headed by entomologist Marcel Dicke.

Sustainable

Insects are nutritious and need relatively little food to grow fast. They eat waste products, use little land and water and don't produce much CO_2. Yet insects are not necessarily the holy grail in the protein transition, says Bovenkerk. 'I have doubts whether they will ever replace other animal protein. In countries that do have insects on the menu, they are usually eaten as snacks. Bolivians for example eat deep-fried grasshoppers rather than popcorn in the cinema. That is as a substitute for sweetcorn, not meat.'

Bovenkerk expects insects to mainly end up in animal feed. 'That produces interesting ethical dilemmas. Because that gives livestock farming a more sustainable image, which in turn allows it to be scaled up. But that is not good for animal welfare and the environment. However, if people don't reduce their meat consumption, it is better to make it more sustainable. Insects can also increase animal welfare: chickens like to peck at insects, and you might be able to encourage less intensive farming by feeding animals insects.'

According to Bovenkerk, it is difficult to determine the precise benefits of insects. 'It depends on what you compare them with. Do you weigh them up against cows, chickens or pigs? Or do you compare them with plant protein sources such as pulses? Insects aren't

'We find it hard to imagine that insects feel pain because they are so small and different'

Animal ethicist Bernice Bovenkerk: 'If you rear animals in production systems, you turn them into objects that exist to serve us rather than their own interests. That is morally problematic, regardless of whether it's a cow, pig or mealworm.' Photo Duncan de Fey

necessarily an improvement on pulses. You have to keep the insects warm and feed them, which costs energy. You could also invest that energy in growing plant food for people. There is also a risk that insects escape and become a plague that damages the environment and biodiversity.'

Moral status

Aside from these practical aspects, Bovenkerk wonders how ethical it is to farm and kill insects on a large scale. 'I was surprised to find insect burgers in the vegetarian section a few years ago. They are animals too! Can you assume vegetarians are willing to eat them?'

Perhaps people think: 'What difference does it make? They're only insects. We swat mosquitoes mercilessly, don't we?' As a specialist in animal ethics, Bovenkerk sees things differently. 'Ethics is about when our acts as humans are "right". Animal ethicists say we should assign a moral status to certain animals and take account of their interests in how we treat them.'

But how do you decide which animals get that moral status? Bovenkerk: 'An important question is whether the animal consciously experiences pain and pleasure. We don't know much about that for insects. But absence of evidence is not the same as evidence of absence. We find it hard to imagine insects feel pain because they are so small and different. But we used to think that of fish, whereas now we know they do feel pain and our treatment of them is horrific.'

Most animal ethicists assume you are only aware of pain when signals are sent to the brain via pain receptors and the spinal cord. Bovenkerk: 'That is why they assume that invertebrates such as insects don't consciously feel pain and therefore don't need a moral status.'

But there may be other ways of experiencing pain. Like most insects, fruit flies don't have a spinal cord, for example, but they do have a ventral cord that runs across the abdomen and fulfils the same function as a spinal cord. If they get close to something hot, they fly away. Bovenkerk: 'A reaction to a painful stimulus doesn't necessarily mean the animal consciously feels pain; it could be a reflex. Pain prevents damage as it makes the animal avoid the painful stimuli. But the animal has to learn and remember this. Most insects have short lifecycles so the trade-off – the energy required to maintain all those extra structures – probably isn't worth it from an evolutionary perspective.'

Yet Bovenkerk warns against drawing conclusions too soon. A simple nervous

Irregular Opening Hours – May 2021

Forum

	2021	The Building	The Library	Student Desk	IT Service point	WURshop	Restaurant	Grand Café	Wageningen in'to Languages
Ascencion Day	**13 May**	10 am - 6 pm	closed	closed	closed	closed	closed	closed	closed
Friday	**14 May**	8 am - 11 pm	8 am - 10 pm	closed	8 am - 5:30pm	closed	closed	closed	closed
Saturday	**15 May**	10 am - 6 pm	10 am - 6 pm	closed	closed	closed	closed	closed	closed
Sunday	**16 May**	10 am - 6 pm	10 am - 6 pm	closed	closed	closed	closed	closed	closed
Monday	**17 May**	8 am - 11 pm	8 am - 10 pm	10 am - 5 pm	8 am - 5.30 pm	9 am - 4.30 pm	closed	10 am - 2 pm	9 am - 5 pm
Tuesday	**18 May**	8 am - 11 pm	8 am - 10 pm	10 am - 5 pm	8 am - 5.30 pm	9 am - 4.30 pm	closed	10 am - 2 pm	9 am - 5 pm
Wednesday	**19 May**	8 am - 11 pm	8 am - 10 pm	10 am - 5 pm	8 am - 5.30 pm	9 am - 4.30 pm	closed	10 am - 2 pm	9 am - 5 pm
Thursday	**20 May**	8 am - 11 pm	8 am - 10 pm	10 am - 5 pm	8 am - 5.30 pm	9 am - 4.30 pm	closed	10 am - 2 pm	9 am - 5 pm
Friday	**21 May**	8 am - 11 pm	8 am - 10 pm	10 am - 5 pm	8 am - 5.30 pm	9 am - 2.30 pm	closed	10 am - 2 pm	9 am - 5 pm
Saturday	**22 May**	10 am - 6 pm	10 am - 6 pm	closed	closed	closed	closed	closed	closed
Whit Sunday	**23 May**	closed	closed	closed	closed	closed	closed	closed	closed
Whit Monday	**24 May**	10 am - 6 pm	10 am - 6 pm	closed	8 am - 5.30 pm	closed	closed	closed	closed

During working hours, the building is open to the public. After working hours, entrance is only possible with a WUR card. Due to precautionary measures regarding the Corona virus, opening hours may change.

Orion

	2021	The Building	Bike Basement	Restaurant (only grab&go)
Ascencion Day	**13 May**	closed	closed	closed
Friday	**14 May**	8 am - 6 pm	closed	8 am - 6 pm
Saturday	**15 May**	closed	closed	closed
Sunday	**16 May**	closed	closed	closed
Monday	**17 May**	8 am - 7 pm	closed	8 am - 7 pm
Tuesday	**18 May**	8 am - 7 pm	closed	8 am - 7 pm
Wednesday	**19 May**	8 am - 7 pm	closed	8 am - 7 pm
Thursday	**20 May**	8 am - 7 pm	closed	8 am - 7 pm
Friday	**21 May**	8 am - 6 pm	closed	8 am - 6 pm
Saturday	**22 May**	closed	closed	closed
Whit Sunday	**23 May**	closed	closed	closed
Whit Monday	**24 May**	closed	closed	closed

Orion is closed on Saturday and Sunday. Due to precautionary measures regarding the Corona virus, opening hours may change.

Leeuwenborch

	2021	The Building	The Library	Coffee Bar / Restaurant
Ascencion Day	**13 May**	closed	closed	closed
Friday	**14 May**	7 am - 10 pm	closed	closed
Saturday	**15 May**	10 am - 5 pm	closed	closed
Sunday	**16 May**	closed	closed	closed
Monday	**17 May**	7 am - 10 pm	8.30 am - 6 pm	10 am - 2 pm
Tuesday	**18 May**	7 am - 10 pm	8.30 am - 6 pm	10 am - 2 pm
Wednesday	**19 May**	7 am - 10 pm	8.30 am - 6 pm	10 am - 2 pm
Thursday	**20 May**	7 am - 10 pm	8.30 am - 6 pm	10 am - 2 pm
Friday	**21 May**	7 am - 10 pm	8.30 am - 6 pm	10 am - 2 pm
Saturday	**22 May**	10 am - 5 pm	closed	closed
Whit Sunday	**23 May**	closed	closed	closed
Whit Monday	**24 May**	closed	closed	closed

30 Minutes before closing time you will be requested to leave the building. After 6 pm entrance is only possible after registration at the reception desk. Due to precautionary measures regarding the Corona virus, opening hours may change.

WAGENINGEN
UNIVERSITY & RESEARCH

system doesn't mean the animal is 'simple'. Research shows that other invertebrates exhibit pain behaviour that is more than just a reflex. A hermit crab may have a favourite shell that it chooses in preference to other shells. If the crab is given an electric pulse every time it tries to get into its favourite shell, it makes do with an inferior shell. So a central nervous system does not seem to be a precondition for feeling pain. Bovenkerk: 'The question is whether this also applies to insects. Invertebrates are a diverse collection of creatures and there are about a million species of insects, which you can't just lump together. Male praying mantises carry on mating while they are being eaten by the female.' Don't they feel that? It is not clear, says Bovenkerk. 'A painful stimulus doesn't necessarily lead to pain behaviour. Perhaps the pain is suppressed to give priority to another behaviour, such as mating.'

Photo Duncan de Fey

Mini-cattle

Even if insects feel nothing and we can farm them without affecting their welfare, Bovenkerk still sees other objections. 'For example, we know that certain insects such as bees can be very intelligent despite their small brains.' A bumblebee that is allowed to choose between green and blue flowers will always go for the blue ones after researchers train it by repeatedly placing a sugar solution in the blue flowers. It has also proved possible to use rewards to teach bees to do sums and recognize faces. 'Perhaps insects don't experience life the same way we do,' says Bovenkerk. 'How does it feel to be a bee? No idea. That is hard enough to imagine with another human. But researchers can look for similarities, for example in brain structures. We know that the prefrontal cortex in humans is used in learning, setting goals and planning. Birds, fish and insects have similar brain structures that could serve the same functions.'

According to Bovenkerk, animals, possibly including insects, have goals and desires, consciously or otherwise. 'They probably don't have expectations for the future, although we don't know that for certain. But they definitely want to eat, mate and survive. Animals have just as much right to life as us. Most of the insects we eat are larvae. That deprives them of the opportunity to become adults and live to their full potential. If you rear animals in large production systems, you are also turning them into objects that exist to serve us rather than having interests of their own. That is morally problematic, regardless of whether the object is a cow, pig or mealworm.'

Perhaps the image sketched at the start of this article isn't remotely distressing for insects because they live at close quarters in nature too. But insects deserve at least the benefit of the doubt, believes Bovenkerk. 'Let's try to study their consciousness properly before we introduce factory farming for these mini-cattle. Insect farming is in its infancy and that offers scope for innovations that make the sector more sustainable and ethical. Now we have an opportunity to get it right from the start and avoid the mistakes of intensive farming in terms of animal welfare and the environment, because it's hard to undo the damage afterwards.' ■

'Let's study their consciousness properly before we introduce factory farming for these mini-cattle'

What corona measures?

‘There’s a party every week in Wageningen’

After more than a year of lockdowns and bans on get-togethers, sometimes a student can’t help reverting to type. Almost every weekend, students party and dance the night away, ignoring the curfew. ‘A dozen people meeting up is pretty normal these days.’ All names in this article have been changed for obvious reasons.

Text Coretta Jongeling

‘The change was very gradual. In the first few months, everyone kept strictly to the rules,’ stresses Lucia, who graduated last year. ‘At a certain point, I guess around New Year, people started getting together more often in bigger groups. Someone invites some friends round, puts on some music and before you know it everyone is dancing. Not like the student parties of old with packed living rooms — it’s more intimate now. You might have 20 or 30 people at most. But small parties like that have become a real habit. It’s common knowledge that there are parties nearly every week.’

The outcome of a social media poll by *Resource* confirms this. 58 per cent of the 200 or so respondents say there are parties somewhere in Wageningen every week. Master’s student Jonathan hardly keeps to the curfew at all in the weekend. ‘I have more sleepover parties now than during my secondary school days. A lot of international students are finding the situation really hard to deal with. There is a lot of loneliness. You’re a long way from home, in a lengthy lockdown... I haven’t seen my family for 18 months because I can’t travel home. All my lessons are online. If I kept to all the rules, I wouldn’t see anyone.’ Jonathan sticks to small gatherings. ‘Even the idea of a large party makes me nervous. But I think there are parties in virtually every student house.’

Frustrating

Understandable, say many students who responded to our poll. But also irresponsible and frustrating. Master’s student Mila: ‘It seems as if a lot of students have stopped social distancing completely. There are often parties in my building, sometimes with up to 50 people. I can understand the need: the situation has been going on so long and I’m fed up too. But it makes me so angry. I’m depressed, I miss my family hugely and this behaviour will only make it take even longer.’

Don’t the party-goers feel guilty? Felix (‘I go to more parties than the average student’): ‘Yes, sometimes. It’s hypocritical. I criticize other people for irresponsible behaviour, for example if they don’t wear a face mask or are negative about vaccines. But then I go to potential super-spreader

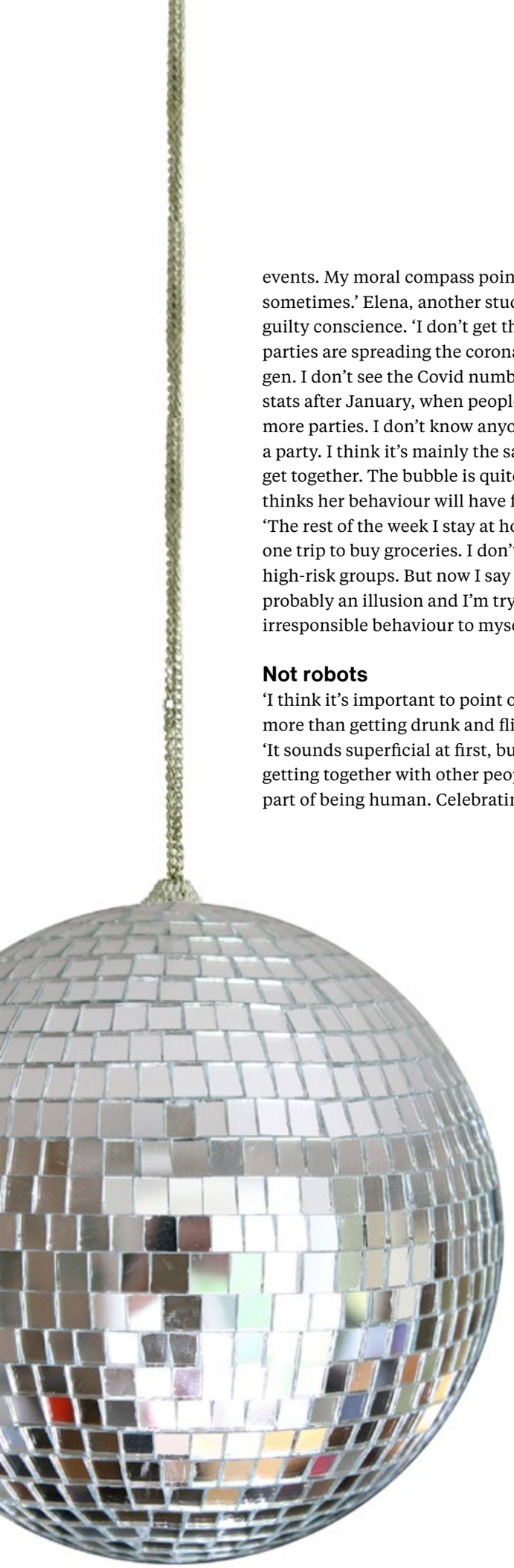


Photo Shutterstock

events. My moral compass points in two directions sometimes.' Elena, another student, doesn't have a guilty conscience. 'I don't get the impression these parties are spreading the coronavirus in Wageningen. I don't see the Covid numbers going up in the stats after January, when people started having more parties. I don't know anyone who got ill after a party. I think it's mainly the same people who get together. The bubble is quite small.' Lucia also thinks her behaviour will have few consequences. 'The rest of the week I stay at home, perhaps with one trip to buy groceries. I don't see anyone from high-risk groups. But now I say this, I realize it's probably an illusion and I'm trying to justify my irresponsible behaviour to myself.'

Not robots

'I think it's important to point out that a party is more than getting drunk and flirting,' says Felix. 'It sounds superficial at first, but I do believe getting together with other people is an essential part of being human. Celebrating life in a social environment where you can be yourself. Lots of students were always able to do that, every week, and suddenly it's no longer allowed. Does the government really think people can keep this up for more than a year? People aren't robots you can program with a new law and change their behaviour without any complaints.'

Elena agrees. 'I missed the parties a lot, and not because of the beer. If I've spent a few hours dancing in the weekend with some great people, my battery's recharged for the rest of the week. I can't speak for others, of course, but I reckon everyone needs to be able to let off steam.' ■

'I miss my family hugely and this behaviour will only make it take even longer'

'Everyone needs to be able to let off steam'

As of yesterday

By the time this issue of *Resource* appears, we will have had our first curfew-less evening. The 'urgent advice' to have just one guest per day has been relaxed to two guests. That will make it easier to meet up with friends and put an end to sneaky night-time visits. But parties are still a no-no. At least, in legal terms.

Police figures show that 255 'Covid fines' were handed out in the past year in Wageningen. Not bad, given that our poll shows that one in four students didn't keep to the curfew...

Where wind and water meet

Sky rivers: how rain travels

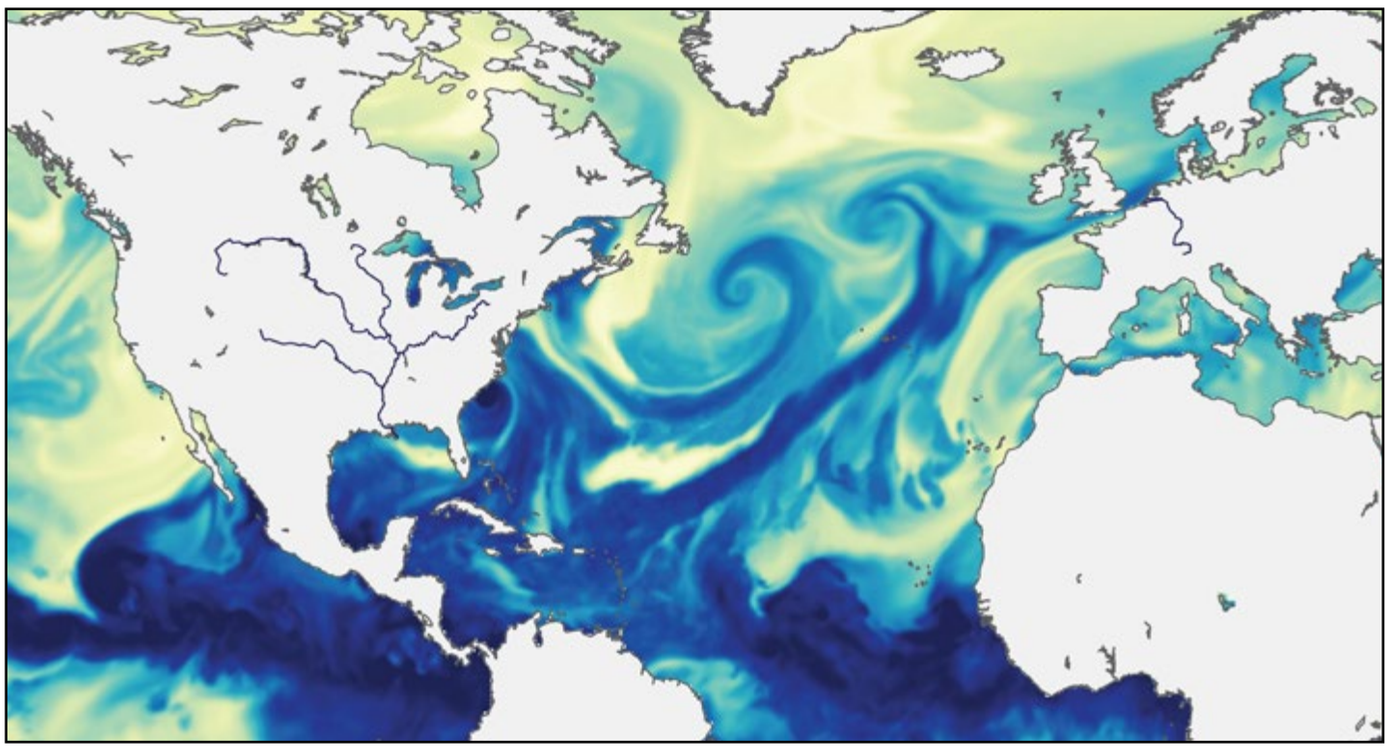
In recent years, WUR researchers have seen a clear increase in what are termed ‘atmospheric rivers’, which can cause extreme rainfall in Western Europe. Predicting this interaction between wind and water is a major challenge.

Text Stijn Schreven

In February, the Rhine’s floodplains were under water. Meltwater and rain in southern Germany and Switzerland led to a high water level of more than 14 metres above sea level at Lobith. But in fact water levels in the Rhine are largely determined by the moisture brought across from the other side of the ocean, says Imme Benedict. She obtained her PhD last year on moisture transport in the atmosphere and the water discharge from rivers. Now she is a lecturer and researcher in the Meteorology and Air Quality group.
‘A lot of evaporation takes place in the Atlantic Ocean, especially close to the tropics, in the Caribbean. Storms start there that travel towards Europe along with the west winds, bringing with them a trail of water vapour.’ That trail can extend more than 2000 kilometres and transport about 15 times as much water as the Rhine; it is then called an atmospheric river. A new one reaches Europe’s Atlantic coast every 10 days. These atmospheric rivers have a big impact on the precipitation in Western Europe, especially in winter when there is little evaporation above land.
So an atmospheric river is part of one or more storms. Chris Weijenborg, an assistant professor in the same group, studies how such storms originate and how climate change is altering their dynamics. ‘A storm originates as a small change in the air pressure, an anomaly, at the point where warm air from the equator and cold air from the Arctic meet. If the temperature difference between the warm and cold air is big enough, that anomaly automatically grows into a low-pressure area, a storm.’

Storms forecast?

Climate change is making the atmosphere become warmer and making evaporation above the sea increase. Warmer air can hold more moisture: 7 per cent more water for every degree increase in temperature. That is leading to more atmospheric rivers, as Benedict found when working with a Master’s student: ‘We’re already seeing a clear increase in the frequency and intensity of these atmospheric rivers.’
But it’s not clear what will happen with the storms. Weijenborg: ‘Climate change has conflicting effects on storms. On the one hand, the temperature difference between the poles and the equator will become smaller because the poles heat up faster than the equator. That would lead to fewer storms.’ But a storm can also grow due to latent heat, the heat that is released by condensation and rain. More moisture in the atmosphere means



An atmospheric river in a satellite image on 14 September 2005. The darker blue the colour, the more moisture. Figure produced by Imme Benedict

more latent heat. ‘The hypothesis is that atmospheric rivers will increase the temperature difference. That would make storms more frequent or more intense.’ Weijenborg suspects the current climate models are not yet able to predict storms very well: ‘They predict that there will be fewer storms and their path will on average shift northwards.’ But it is difficult to say whether that will actually happen because the models are still imperfect. ‘They aren’t accurate when it comes to small storms where latent heat plays a big role. The models’ resolution is not refined enough.’

Jet stream

Whereas atmospheric rivers can lead to extreme rainfall, in recent summers we have suffered extreme drought. The supply of moisture is then blocked for a relatively long period, explains Benedict. This is caused by the jet stream: the strong westerly winds at an altitude of eight to ten kilometres. The temperature gradient between the pole and the equator determines how strong the winds are. Weijenborg: ‘The bigger the temperature difference, the stronger the jet stream.’ But as explained above, that temperature difference will decline with climate change; one theory is that the jet stream will weaken and start meandering more. ‘One such major meander caused a persistent high pressure area above Western Europe in 2018 and blocked the supply of moisture from the sea,’ says Benedict.

‘Climate change has conflicting effects on storms’

If the hypothesis is correct, we can expect such blockages more often in the future. But that is far from certain. Benedict: ‘Not all models predict this trend and there is quite a debate about it at the moment.’ Benedict says the jet stream is the factor driving weather phenomena such as storms and atmospheric rivers but we don’t understand it well enough to make sound predictions. That is cutting-edge research not only in this field but also when extrapolating to predict the impact on land. Benedict: ‘You have to understand the jet stream, but in the end you want to know what effect it will have on us, and then you need to look at atmospheric rivers and droughts.’ So while Weijenborg will be trying to figure out storms over the next few years, Benedict will be focusing on the next time water levels rise. ■

Key people: Helma Eleveld

They are indispensable on campus: cleaners, caretakers, catering staff, gardeners, receptionists — it's a long list. *Resource* looks up these key people. This time, meet Helma Eleveld (58), Wageningen Bioveterinary Research service employee in Lelystad.

Text Milou van der Horst Photo Guy Ackermans

'Together with Anita, I run the laundry, buy in the clothes and sterilize them. It has been a madhouse here recently because they've also been analysing Covid tests. We were suddenly washing an extra 100 kilos of clothing a day, up to 250 kilos in one day! They're no longer doing the corona analyses: there was a bird flu outbreak and it got too busy. Anything that is worn in the High Containment Unit (HCU) could become infected with viruses. Those clothes have to be sterilized at the unit and then we wash and dry them. After that, we fold them up and put them on a shelf like in a shop. We've got something for everyone in every size and shape: sterile clothing, lab coats, ordinary clothes for animal keepers and technical service staff, even socks and underwear.
Next year, I will have been here 40 years. I like the contact with people. If I see people are feeling down, I ask them if everything's OK and sometimes they talk about it and feel better. I listen to them and they like that. I am naturally a cheerful person and I don't like complaining, however hard the work is. Sometimes the pain in my hands is so bad it wakes me up. But now I have a brace and that makes things go better.
I wanted to work with animals when I was young but after doing animal care training, I couldn't get a job. Then I ended up here. It sometimes feels a bit wrong for an animal lover like me to be working here because we do work with lab animals. I once saw 10 ponies brought in and I felt awful because they'd never be coming out again. But of course you do save other animals that way.
The laundry is underneath the destruction room. Sometimes you hear the carcass shredder that takes all the dead animals. Then Anita and I cover our ears. When I retire, I want to start working with animals. I wish I'd had a small farm but I do have eight cats at the moment, which is also nice.'

'Sometimes you hear the shredder that takes the dead animals'

Campus ◆ residents

OpenGeoHub

Tom Hengl transforms data into maps with open-source software and geo-information systems. He is co-founder of two start-ups: OpenGeoHub and EnvirometriX. Commercial projects go to EnvirometriX, while other customers are welcome at the non-profit foundation OpenGeoHub. These 'research organizations' were founded in 2018 and have 12 employees. OpenGeoHub started with summer schools for students from all over the world who wanted to learn how to collect, integrate and visualize spatial data. Most of the employees are 'modern nerds', from Germany, Brazil, Australia, Italy and the Netherlands, who now work at the Agro Business Park in Wageningen. The foundation has just finished harmonizing several datasets to construct a map of land cover in Europe for the period 2000 to 2019. Hengl shows on this map how Veenendaal has grown over the past 20 years and how the vineyards in the Italian province of Puglia have increased.

'We go further where Google Maps stops'

'We go further where Google Maps stops,' says Hengl. His company also developed a map of soil types and vegetation in Africa for the Bill and Melinda Gates Foundation as input for a soil and agronomy information system. OpenGeoHub is collaborating closely with the Laboratory of Geo-Information Science and Remote Sensing at WUR, with two joint PhD students. It has also started collaboration with the university's Farming Systems Ecology group. If you are a student in Geo Information Science or Environmetrics, you might want to contact them for a potential internship. AS

There are about 100 companies on campus. We introduce them to you in *Resource*. This time, meet OpenGeoHub in the Agro Business Park.

All the flavours of the world can be found in our WUR community. Food Technology Master's student Keumwoo Lee (25) takes us to Korea.

Flavours of WUR

Kimchi fried rice

'Kimchi fried rice (or kimchi-bokkeum-bap) is a type of bokkeum-bap, a fried and flavoured rice dish. You find it in every Korean snack-food restaurant. This dish reminds me of my school days. Like every other student in Korea, I went to the snack-food restaurant whenever I felt hungry during a break. This quick meal is affordable and nutritious. Above all, it's delicious!'

Ingredients:

- 1 cup chopped kimchi (pickled vegetables)
- pinch of salt and pepper
- 1 cup steamed rice
- 2 tbsp kimchi juice
- 1 tbsp sugar
- 1 tbsp soy sauce
- 1/2 tbsp chilli powder
- 1/2 onion (chopped)
- 1/2 spring onion (chopped)
- 1/2 tbsp butter
- 1/2 tbsp sesame oil
- 2 sheets of dried seaweed (Nori sheets or 'GIM' in Korean)
- Sesame seeds to decorate
- 1 egg, fried sunny-side up

1. Heat a frying pan. Add the vegetable oil.
2. Fry chopped spring onion and onion with butter. Add a pinch of salt and pepper.
3. Add kimchi and kimchi juice with soy sauce. Fry all together.
4. Add the chilli powder and the sugar.
5. Add 1 cup of steamed rice.
6. Fry all ingredients together and add the sesame oil.
7. Sprinkle with roasted seaweed and sesame seeds.
8. Put the fried egg on top. Serve right away.

Keumwoo Lee (25)
Food Technology Master's student from Korea

In other news science with a wink

HUMONK

Researchers at the Salk Institute for Biological Sciences (San Diego, US) have created 'humonk' embryos: monkey embryos with human stem cells. The embryos were kept alive for about 20 days. The development of these chimeras serves a purpose as the researchers hope experimenting with human models will help cure diseases. The ethical committee thought it was OK.

DRONES

Drones are commonplace on Earth but Mars's first drone, Ingenuity, is definitely not. It cost 85 million dollars, and that's excluding transport. Though it does have to do more than the Earth-bound drones: fly in a rarefied atmosphere (1 per cent of the density on Earth). More planetary drones will follow. NASA is building one (Dragonfly) that will be sent to Titan, one of Saturn's moons, in 2027. The atmosphere there is four times denser than on Earth.

ULTRA-FLYING

Fruit flies can fly up to 12 kilometres non-stop looking for food. Scientists at Caltech discovered this in tests in the Mojave desert. The insects flew a kilometre in 15 minutes and lab trials showed that they could fly for at least three hours without stopping. With tailwind, that means 12 kilometres, or almost 5 million times their body length. Ultra-far, in other words.

ULTRA-RUNNING

That performance puts fruit flies ahead of many migratory birds. What about humans? In 2005, the American Dean Karnazes ran 560 kilometres non-stop in 80 hours and 44 minutes. That is a respectable average of 7 kilometres per hour. As a comparison, it's 324,000 times his body length. A pretty pathetic performance for a fruit fly, though. RK

Indigenous knowledge

Blog

Luuk Slegers
Luuk Slegers is a Master's student of Sociology, majoring in International Development. He lives on Droevendaal in Wageningen with his five housemates.

The wind is creeping in between my pants and my leather jacket, and I swear under my breath, tugging around a bunch of willow branches. '*Salix alba*' branches to be exact, for you bunch of natural science freaks. Anyway, we have one with a nice gnarly ball-shape on the top, from all the pruning. I have had many foreigners asking me why we mutilate our trees. I have taken offence every single time. 'We used to make fences, and tools, and baskets, and... stuff, from them,' I would explain proudly. 'We are just honouring the tradition. They belong in our cultural landscape.'

'We start weaving, crack, the third branch snaps'

There is a whole technique to pruning them, so that both you and the tree survive. If you are not Dutch, you could not possibly understand, the richness of our culture is not just limited to our exquisite cuisine.
So, I am now tugging these branches around because we are going to weave a willow fence—a nice traditional, zero-waste, 'climate-proof' and whatnot fence of woven branches. Thick pieces we will use for poles, the thin supple ones for weaving. Driving the poles into the ground, most get stuck on a root or something almost immediately. After a bit of screaming and crying, they are standing, a five-year-old could pull them out with one hand, but surely they will be reinforced by the rest of the structure.
We start weaving, going well, looking good, crack, the third branch snaps. Okay, okay, no problem; we replace it. We have a few layers already. Over, under, over, crack, one of the supporting poles breaks, and the structure is compromised. I scream internally, staring at the broken pole. It's cold. Tomorrow will be warmer. Inside, at my computer, I consult YouTube. A scruffy old Scot demonstrates to me, again, how to grow, harvest, sort, store, and weave the willow. He is a magician, speaking so slowly and moving his hands so fast. He seems thoroughly content with his life. How far we've come, from building simple fences, to watching YouTube videos of somebody building a simple fence while wondering why we feel so empty.

Colofon

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

Editorial staff Willem Andrée (editor-in-chief), Helene Seevinck (managing editor), Roelof Kleis (editor), Tessa Louwerens (editor), Albert Sikkema (editor), Luuk Zegers (editor), Nicole van 't Wout Hofland (freelance editor), Coretta Jongeling (online coordinator), Thea Kuijpers (secretariat).
Translations Clare McGregor, Meira van der Spa, Clare Wilkinson
Design Alfred Heikamp, Larissa Mulder

Overall design Marinka Reuten
Printing Tuijtel, Hardinxveld-Giessendam
Cover image Sven Menschel

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

klimaatneutraal
natureOffice.com | NL-077-434311
gedrukt

MIX
Papier van verantwoorde herkomst
FSC® C007225
FSC www.fsc.org

[no]WURries

‘Because of Covid, I eat my meals with my housemates nearly every day. We take it in turns to cook but unfortunately half my housemates can’t really cook. They just throw it all together and it tastes awful. There’s no chance of a flavoursome sauce either. I don’t want to hurt people’s feelings but it simply doesn’t taste nice. What should I do?’

Rijnveste student
(name known to the editors)

Cook more often

‘If their cooking isn’t up to scratch, perhaps they don’t enjoy cooking. You could offer to take more turns yourself. You then get to practise your hobby of cooking while everyone, including you, gets to enjoy your culinary skills. Perhaps that will even inspire your housemates to pick up a cookbook themselves.’
Bram, Nutrition and Health student
(full name known to the editors)

Apple sauce

‘If your housemates just throw ingredients together, like I do, there is a high chance they are not particularly passionate about cooking. You could indicate that you do enjoy preparing meals and wouldn’t mind doing so more often. Alternatively, if you don’t feel like spending more time at the stove, you can add some apple sauce to the mix. In Dutch cuisine, it goes with anything.’
Henry Abbink, recently graduated in International Development Studies

Enjoyment

‘Try to discuss it. Do your housemates themselves think they are good cooks or did they agree reluctantly to this arrangement? People who enjoy cooking are usually more likely to prepare things that taste nice. It’s more difficult if cooking is a chore. If they want to learn (from you) how to cook better, why not cook together? If they don’t enjoy cooking and you don’t enjoy eating their food, you could suggest you cook more often. In return, they could wash the dishes or do more cleaning tasks.’
Franciska Sprong, Happietaria Wageningen 2021 kitchen coordinator

Call your mum

‘There are loads of videos on YouTube and cookery programmes on the TV where a chef shows you how to cook great dishes. Turn it into an activity with your housemates where you all get into the kitchen to try and make one of those dishes. Enjoy a sociable occasion and a tasty meal! And if that doesn’t work, you can always call your mum for a delicious recipe.’
Jolanda Meurs, Facilities Service Desk employee

Cook together

‘In Covid times, lots of people don’t attach much importance to cooking and eating; they just see it as a question of getting their nutrients. Your housemates may well not realize that the others don’t think their food doesn’t tastes nice. Try to cook together occasionally rather than taking it in turns. That’ll let your housemates learn from one another. Tastes differ, but you are bound to find recipes together than everyone can enjoy. Anyway, cooking together is much more fun.’
Colin de Bruijn, International Land and Water Management Bachelor’s student

NEXT WURRY

‘I am a student from China. Recently, a group of young kids - all around 10 years old - cycled up to me, one of them shouted “China virus” at me and they all laughed. Although I am mentally prepared that something like this could happen, it was unpleasant and hurtful. I am probably not the first person to experience this in Wageningen. I could use some help processing what happened to me. How should I react or deal with it?’

Master’s student at Wageningen
(name known to the editors)

If you have advice or tips for this Wurrier or if you need some advice yourself, ***email your tips or question (100 words max) by 13 May to resource@wur.nl*** *subject noWURries.*