

Resource

MARCH 2022 VOLUME 16

Helium
to be rationed

War will affect
food supplies

Student sports
on the rise

Universities stop
collaboration with
Russia

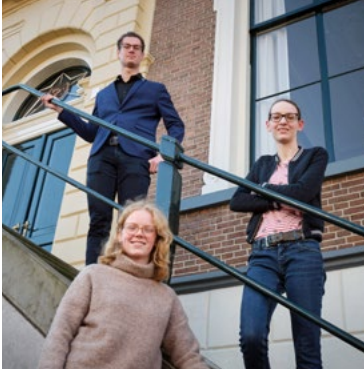
Arnhem in
100 years' time

Their countries are at war
'But here we are equal' | p.18



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FOREWORD

War and truth

At first glance they are just ordinary guys. Andrei comes from Russia, Slava from Ukraine. They are both studying at WUR and they live in the same student house. *Resource* interviewed them about what unites them: anger, incomprehension and defiance (p. 18). We saw the same emotions in assistant professor Maryna Stokal (from Ukraine) during an informal drop-in where Ukrainians, Russians, Belarussians and others discussed the situation with one another (p. 6).

The war is everywhere, with new developments every day. It was only a matter of time before the Dutch universities took a stand. They are now boycotting all scientific institutions in Russia, but 'we are united in solidarity with the students and staff in Ukraine and we embrace those academic communities in Russia that condemn the invasion,' rector Arthur Mol told *Resource* last week. I thought that was a good statement: now is the time for scientific institutions to act together. So informal contacts will be maintained. As Maryna says, 'Universities can play a role in the war. Let them spread the truth.'

Willem André
Editor-in-chief





HOELAHOEP

Students Yonna Bouwman, Kaat Borstlap and Marieke Willaert have just come out of class. They heard on the grapevine about the PauseXpress run by De Bongerd Sports Centre. The programme for today (Thursday 3 March) on the field between Atlas and the Forum is hula hooping with instructor Inge Evers – who kept up this pose for the photo till she began to see stars. Yonna: ‘Nice idea, this. I dragged the others along – it makes a very pleasant change from sitting on a chair all day.’ ^{WA}

Photo Willem Andréé

Boycott research with Russia

The Dutch universities are stopping cooperation with knowledge institutions in Russia and Belarus. WUR too is putting its collaboration with the Higher School of Economics in Moscow on hold.

The ministry of Education made an 'urgent plea' last week to the Dutch universities to end cooperation with Russian and Belarusian knowledge institutions. The call applies to formal relationships with knowledge institutions and not to informal, personal relationships between Dutch and Russian scientists. There is no

need to break off those, just as there is no need to end student and staff exchanges.

WUR does not have many research projects with Russia

The ministry also says that students from Ukraine, Russia and Belarus who are studying in the Netherlands must be able to complete their studies. Given that they could end up in financial problems due to the war or the boycott, the Education ministry is reserving one million euros for the support of these students.



Higher School of Economics, Moscow • Photo Shutterstock/BestPhotoPlus

Occasional exchange

A stock-take shows that WUR does not have many research projects with Russia. The main Russian partner at present is the Higher School of Economics (HSE) in Moscow, which has an Institute for Agrarian Studies. The projects with HSE ended in late 2021. In November 2021, WUR signed an agreement with HSE to extend the collaboration; the boycott means that agreement now ceases to apply.

WUR also has contacts with Moscow

State University, Timiryazev Agricultural Academy in Moscow, Tomsk Polytechnical University, Tomsk State University and the Russian Academy of Sciences. These contacts are mostly for the occasional exchange of students and sharing educational programmes and training courses.

On 4 March, the Union of Rectors of the Russian universities expressed its support for the Russian invasion of Ukraine in an official letter. AS

Education Innovation Award for Transformative Research



The innovations ranged from new teaching methods to apps and teacher support initiatives. A jury of education specialists named Transformative Research for Global Social-Environmental Challenges the winner. This new PhD course revolves around the question of how research can help transform society and the environment. The course brings together

teachers and PhD students from all parts of WUR and international partners like the Stockholm Resilience Centre. This makes Transformative Change 'an innovation in the true WUR spirit of finding answers together', says the jury. Furthermore, the course uses innovative playful and art-based teaching methods, including forms of theatre like role play.

According to course coordinator Josie Chambers, 'This course taught me the power of creating a learning space that challenges our own assumptions in ways that allow us to see the humanity in others and feel hopeful about what we can achieve together.' Co-coordinator Professor Esther Turnhout says, 'PhD students across natural-science and social-science

disciplines are looking for reflection and want to explore options to change research practices.' Chambers and Turnhout want to use the prize money (1000 euros) to develop the course further and get their own institutions involved (Utrecht University and University of Twente respectively). LZ

5

Five new specialist Master's programmes will replace the current Master's in Management, Economics and Consumer Studies (MME). That Master's programme has always had a very good reputation but students felt it was too broad.

The new Master's programmes (Sustainable Business and Innovation; Supply Chain Analytics; Consumer Studies; Economics of Sustainability; Governance of Sustainability Transformations) will be offered from next academic year and will have a strong focus on sustainability, just like MME. ^{LZ}

Argo is helping Ukraine

The students of Wageningen rowing club Argo have collected tins of food, medicines, clothes, tents, money for electricity generators and other goods for Ukraine. They did this after a call from former Argo chair Kees Huizinga, who has a farm in Ukraine. The boatshed got turned into a storage space. Over 6000 euros were raised for generators. The club members plan to evaluate the campaign, says chair Luwe Groot (23). 'I would love it if we could do more.' ^{LZ}



PUT-IN TAKE-OUT

COWARD'S GOING NUTS
TO FALSELY CLAIM
REIGN IN UKRAINE
AND IS MET BY GUTS

HERSCHO DUDS

Helium rationed at WUR

The worldwide shortage of helium is making itself felt on campus. Supplier SOL Nederland can no longer deliver the gas.

'Research and education will have to make do with the limited supply that is still available,' says Ineke Rus, contract manager for technical gases at Facilities and Services.

The supply of helium, a by-product of gas extraction, has been problematic for years. The main suppliers are the US, Qatar, Algeria and Russia. According to Rus, the temporary loss of production capacity, on top of the current war, is causing a dip in the supply of this inert gas. And prices are sky-high. 'The price has risen by 240 per cent since 2013,' says Rus.

Supply

The consequences of the shortage for WUR are currently being mapped out.

Helium (in liquid form) is indispensable for cooling the large magnets in NMR equipment. It is also used as a carrier gas in gas chromatographs and mass spectrometers, which are essential for chemical analysis.

'Research and education will have to make do with the limited supply available'

The NMR Centre can keep going for now, says director Maarten Smulders. 'We use liquid helium (at -269°C) to cool the magnets. We replenish this a few times a year. It's time to do so again next week. We still have the 250 litres we need in stock.'

Last year, WUR used 146,000 euros worth of helium. Most of that is for the NMR equipment, and there are no



NMR equipment at WUR • Photo Maarten Smulders

alternatives according to Smulders. Alternatives do exist for the gas chromatographs, says Rus, but they may have a negative impact on the quality of the analysis. ^{RK}

'Help us in any way you can'

At least 50 people of various nationalities gathered in Atlas on Thursday, 3 March: Ukrainians, Russians, Romanians, Chinese, Belarusians and Dutch. They shared their concerns and feelings during an informal 'drop-in'.

'While we sat here talking for an hour and a half, bombs were falling on our cities, including the city where my family lives,' said university lecturer Maryna Strokak afterwards. She is sad and angry: 'I think the statement WUR made is too soft. I would also like WUR to respond more proactively, and take these kinds of initiatives itself. Another suggestion I have is to get in touch with Russian universities, which can play a role in honest communication with the Russians. Whatever the case, my appeal to WUR is: help us, in any way you can.'

Guilt

The idea of the drop-in came from Susan Urbanus (PhD programme coordinator and PhD advisor), among others. 'An open drop-in seemed like a way to bring different parties together. We submitted the idea to the Executive Board, which gave its approval.' All those present were able to share with each other how the war is affecting them. Susan heard, for example, that the Russian people present had guilt feelings. 'The others felt they didn't need to feel guilty, and that was discussed.' Does Strokak see any light on the horizon? 'While this meeting was going on, besides the bombing, there were also peace talks. And I am impressed by all those people who try to help, both here and in Ukraine. And don't forget: this is Putin's war against freedom in Ukraine and not that of most Russians!' *wa*

Student sports on the rise

Clubs for outdoor sports have seen member numbers double thanks to Covid.

All the clubs combined got 800 extra members over the past two years. When the first lockdown started in March 2020, the number of students with a sports card soon declined as students left Wageningen. That was particularly clear from sales of the monthly rights. But that dip in sporting activity is long past, concludes Henri ten Klooster, head of De Bongerd Sports Centre. 'We are back at pre-Covid levels: 55 per cent of students have an active sports card.' But there has been a significant change too, as far more students have joined a sports club: 43 per cent compared with 30 per cent before.

Outdoor sports in particular have become more popular. Football club GVC has over double the number of members (114) compared with two years ago. Cycling club Hellingproof (98 members), tennis club Walhalla (314) and climbing club IBEX (178) have also all grown a lot. IBEX also benefitted from the completion of the climbing hall. Ten Klooster says the growth can be explained by the lack of social contact during the pandemic. 'Students became aware of the importance of doing things together and belonging to a group.' But he also sees a new trend. 'Sports clubs are becoming increasingly like the traditional student societies. They offer more or less the same things.' *RK*

Read more on resource-online.nl



'What a waste'

Davide Bottacini (26), Master's student of Biology and Plant Sciences, collects and sells discarded furniture. The money he makes goes to a good cause. Davide thinks it is a waste to throw so much away. In his experience, many students simply dump their furniture for rubbish collection when they move house. He hopes to use the money he makes to stop the New Zealand kakapo bird from becoming extinct. *sw*

Scan the QR code for the whole story.



War in Ukraine has big impact on food supply

Wageningen Economic Research (WEcR) is launching a website this week to provide information to the Ministry of Agriculture, Nature and Food Quality, the farming community and other interested parties on the impact of the war in Ukraine on the food situation.

Firstly, Ukraine and Russia are major global exporters of grain. Russia normally accounts for 20 per cent of grain exports, Ukraine for 10 per cent. A lot of grain now lies in storage in both countries. Because of the sanctions against Russia and the obliterated ports in Ukraine, little or none of that grain is reaching the world market. Moreover, now is the time for Ukrainian farmers to sow for the next harvest, says WUR alumnus Kees Huizinga, who has a large farm in the Ukraine. But the war makes that impossible. It is too early for WEcR to say how much effect this will have on global grain prices. 'It takes time to calculate scenarios with our economic models,' says researcher Ron Bergevoet. Meanwhile, farmer Huizinga has fled the country and his farm is at a standstill.

Drivers are becoming soldiers

Bergevoet foresees many more economic effects of the war besides the loss of grain production in Ukraine. The export of Dutch agricultural products to the Ukraine and Russia – such as flowers and seed potatoes – has stopped abruptly. The import of artificial fertilizer and wood from Belarus has been halted by the European boycott. And agricultural production in Europe is hampered by the high energy prices. Bergevoet foresees transport problems too, now that many Ukrainian truck drivers have returned to Ukraine to fight the Russian army. And organic meat producers in the Netherlands have got to find alternatives to the GM-free soya they have always imported from Ukraine. AS



Photo Frans Bongers

Oman's frankincense trees on the map

The inventory must be the prelude to more sustainable management.

Bongers has been working on frankincense since the late 1990s. On several occasions, he has sounded the alarm about the decline of the frankincense tree *Boswellia Papyrifera* in African countries such as Eritrea, Sudan and Ethiopia. This tree is pretty much doomed there, due to overproduction and a lack of new growth.

But a different species grows in Oman: *Boswellia sacra*. 'Boswellia sacra is the holy frankincense tree that is mentioned in the Bible,' says Bongers. 'It is used for applications in perfumes and oils.' The study he is now leading is documenting the state of this species in Oman. 'We are looking at the distribution of the tree, its health status and how sustainably the frankincense is tapped.'

Above all, this work means a lot of driving. Oman's surface area is more than seven times that of the Netherlands. The frankincense trees are found in the southern coastal region of Dhofar. Bongers: 'An extremely rugged desert area of 30 by 150 kilometres. So we drive

around a lot and map the trees using a system with which you can enter data on your mobile phone.

Camels

Probably the greatest threat to the frankincense tree is grazing by camels, says Bongers. 'There are more than a quarter of a million camels in Oman

'Camels eat everything in sight'

and they eat everything in sight, including all the frankincense trees. You see bare trees everywhere with just a small crown

of leaves. We are documenting all this.' 'We hope to be able to present a solid report of the actual situation,' he continues. 'Then it's up to the politicians, ministries and organizations to tackle the issue.' The aim is to make the exploitation of the frankincense tree more sustainable. Bongers is doing this work on behalf of the Environmental Society of Oman. RK



A Little Wiser

Why are bird droppings white?

No doubt you've been annoyed by them at times: those white droppings on your car windscreen, or worse still, on your head! Why are bird droppings so white, actually?

Flying is best done with as little ballast as possible. A full bladder is heavy and not very handy, so it has been taken out of the blueprint for birds. 'Unlike mammals, birds do not have separate exits for urine and faeces,' says Ingrid Tulp, researcher at Wageningen Marine Research. Birds defecate and urinate simultaneously through one orifice: the cloaca. Both the kidneys and the intestines are connected to the cloaca. It is also where eggs and sperm leave the body.

As protein is digested, the toxic waste product ammonia is produced. This must be diluted in the body to protect the animal. Aquatic animals dilute ammonia with water and then excrete it. Tulp: 'In mammals, ammonia is converted in the liver to the less toxic urea, which can more easily be concentrated and leaves the body in urine.' Birds and reptiles take a different approach: they are designed to use water very sparingly, probably because they have a limited water supply in the egg. 'The thicker excrement is also useful because the parent birds of many species remove their chicks' excrement from the nest to prevent it from standing out too much due to the white colour,' says Tulp.

Birds do not have sweat glands, but they do lose moisture through breathing and defecation. Instead of urine, which is

fairly watery, birds (and reptiles) produce uric acid, which is much more concentrated and is excreted as a white sticky paste. Tulp: 'So the white bit is actually bird pee, and the dark bit in the middle is faeces. Because uric acid does not easily dissolve in water, it remains in place for a long time – on your car windscreen, for example.'

The colour of the droppings also depends on what the bird has eaten, Tulp says. 'Geese eat grass and have green poop, while birds that eat a lot of meat and fish have whiter poop. That's because they eat bones as well, and the calcium in those bones turns the faeces white. Some predators such as hyenas have white poop for the same reason. Thrushes can have purple poop when they have snacked on elderberries, for example.' TL



'Birds that eat a lot of meat and fish have whiter poop'

Ingrid Tulp, researcher at Wageningen Marine Research

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



Risky aphrodisiacs in Ghana

The mixes can cause prolonged painful erections and even be fatal.

An estimated 320 million men are expected to suffer erectile dysfunctions by 2025. The treatment options include approved synthetic drugs known as PDE5 inhibitors that widen the blood vessels in the penis, causing an erection. In Ghana and other African countries, men are more likely to resort to herbal mixes to improve their sexual performance rather than synthetic drugs like Viagra. However, the use of such herbal remedies sometimes leads to priapism (prolonged, painful erections) and extreme loss of blood pressure that can result in strokes, cardiac arrests and even death. The herbal mixes often turn out to include synthetic drugs, sometimes in dangerous quantities, as Felicia Akuamo (Toxicology) discovered in her PhD research.

Side effects

Akuamo studied 40 herbal mixes that are sold in the Ghanaian capital Accra as remedies for erectile dysfunction, testing them for the illegal addition of synthetic PDE5 inhibitors. More than half the herbal mixes contained synthetic inhibitors such as sildenafil (the active ingredient in Viagra). In 13 products, the concentration was between 25 and 100 mg, which is comparable to the pharmaceutical drug. Six mixtures had concentrations of over 100 mg. A high dose of the inhibitors can cause extreme relaxation of the smooth muscle cells, which could explain the side effects. The tests Akuamo developed can easily be applied in Ghana and neighbouring countries to detect the presence of illegally added inhibitors. ss

Arnhem in 2120

After sketching a green version of the Netherlands in 2120, Wageningen scientists are now picturing the city of 2120, taking Arnhem as an example.

Floating wooden tower blocks, ventilation corridors channelling cool breezes to the city centre, hydroelectric power via a system of underground pipes and lakes: Wageningen's vision of Arnhem in the 22nd century has numerous eye-catching elements.

This vision of the future is not afraid of sacred cows either: panoramic views of tower blocks and wind turbines on the Veluwe may raise a few eyebrows. 'But if you take into account climate change plus the potential of the Veluwe landscape, building on higher land and generating energy in a windy zone is the logical solution. The underlying idea is that the natural system is the determining factor in the choices we make in urban development,' explains Ilse Voskamp, a research-

er in Wageningen Environmental Research.

It is no coincidence that they chose Arnhem as the example for this study. The city is located at the point where two key Dutch landscape types meet: the river area and the higher-lying sandy land. 'The same principles can be applied to other locations with a comparable natural context,' says Voskamp. The study is a co-production between Wageningen Environmental Research and the Landscape Architecture chair group. ME

See the QR code for the map.



IPCC report: 'adapt and act'

The latest IPCC report calls for action on the climate, but the tone has changed. There is more of an emphasis on climate adaptation: learning to live with the consequences of climate change. In some cases, there is no way back, says Robbert Biesbroek (WUR Public Administration and Policy), a co-author of the report. The Covid recovery period holds out opportunities for a transition to climate-proof cities. Biesbroek: 'But a lot depends on how resolute governments are. The time for waiting to see what happens really is over.' ss • PHOTO DRONEWAGENINGEN

'Conventional agriculture' is a loaded term

Stakeholders groups and scientists increasingly use the term 'conventional agriculture', thus lumping together a number of different forms of agriculture. This frame hampers the quest for sustainable agriculture, say agronomists James Sumberg and Ken Giller.

Imagine reducing a whole range of approaches to agriculture, such as traditional agriculture, small-scale agriculture, mechanized agriculture, intensive agriculture, commercial agriculture and industrial agriculture, to the blanket term 'conventional agriculture'. It would be disastrous for our capacity to analyse different farming systems. 'We need these distinctions in order to develop specific strategies for making agriculture more sustainable,' say Sumberg and Giller in the journal *Global Food Security*. Sumberg is emeritus professor at the University of Sussex and Giller is professor of Plant Production Systems at WUR.

Increasingly, however, all current farming systems are lumped together and set

against alternative farming systems such as organic farming, climate-smart or regenerative farming, which are precisely differentiated. The implicit message is often that conventional agriculture is not sustainable, bad for the climate and environment, highly mechanized, large-scale and harmful to the rural community. In political debate on the agricultural transition, 'conventional' is portrayed as homogenous, conservative, inflexible, old-fashioned, and therefore due for replacement, say the agronomists.

Image

This image frames 'conventional' agriculture as running on fertilizers and pesticides. As a result, we fail to notice other variables such as the availability of resources, climate and political context, suggest the professors. Because



Photo Shutterstock

'conventional' farms can be very small or very large, commercial or not, and highly intensive or extensive.

The agricultural sector faces huge challenges, so the quest for sustainable farming systems is ill-served by simplifications that deny the rich diversity of existing farming systems, state Sumberg and Giller. They decline to comment on whether 'conventional' or 'ecological' farming is a better way to feed the world. They prefer to study how the various systems can contribute to sustainable agriculture. AS

In other news science with a wink

◆ GENEALOGY

Genealogists are happy if they can trace their ancestors back as far as 400 years. With genes, Oxford researchers can now go back tens of thousands of years. By making a family tree of individual genes, and superimposing those family trees, they can trace a direct line back to the moment when a genetic variant arose. Putting the gene in genealogy.

◆ GENEALOGY (2)

The researchers used the genomes of 3609 people worldwide, going back 100,000 years. This is big data science. By adding

information about the location of the gene under investigation, it is possible to deduce where common ancestors must have lived. The gene family tree is the ultimate evidence of how we are all connected.

◆ AUTUMN

The impact of the asteroid in Mexico that wiped out the dinosaurs took place in our springtime, scientists at VU University Amsterdam and elsewhere have concluded from research on fish fossils. The fish were literally buried alive within an hour of the impact. Exact dating is impossible. At the

site, of course, it was more like autumn. A memorable moment.

◆ SHORT STRAW

Women are twice as likely as men to develop Alzheimer's disease. This is due to the menopause, researchers from the Chinese Academy of Sciences have shown. During this period, women produce extra FSH, the hormone that plays an important role in ovulation. That hormone sets off a chain reaction that leads to Alzheimer's disease. Women always get the short straw. RK

BKO: a fantastic deal?

Imagine that you, a WUR employee, decide to take on an additional task alongside your usual work. The task comprises roughly 30 ECTS, which is six months' work. Would your manager accept this just like that? At the very least, they would want a plan of action detailing how you would combine your current work with this task, whether you planned to take leave, etc. And they might not agree to you taking on the task at all.

'Where do teachers get the time from?'

But that's not how it works for teachers training for the Basic Teaching Qualification (BKO, or UTQ in English). As a matter of fact, this whole course comes on top of your existing set of duties – and every teacher takes it. The Dutch universities association VSNU has established a standard qualification for lecturers. This 'Basic' Teaching Qualification attests to the lecturers' didactic competence. The BKO trajectory was completely revised recently and has been turned into an even more

extensive and thorough programme. Wonderful! We get better education thanks to this instrument.

But where do lecturers get the time required for this BKO training? Do they get six months off? Are they exempted from teaching? Do they not have to publish as much? Or is it just added to all the tasks they already have, and do they have to just make sure they fit it in somehow so their evaluation is not affected?

Of course we must keep up the quality of our teaching, and solid teacher training is part of that. But it is crazy to oblige employees to follow such extensive training without giving them the time to do so. Well, crazy? For WUR it's a fantastic deal if people do this on top of their regular work. But it's not quite such a fantastic deal for the individual lecturer.

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Guido Camps

Guido Camps (38) is a vet and a researcher at Human Nutrition and One Planet. He enjoys baking, beekeeping and unusual animals.

Students up for election

Numerous students are up for election in the upcoming municipal elections on 16 March. How did they find their way into politics, and what are their views? *Resource* interviewed three of these students.



Text Luuk Zegers

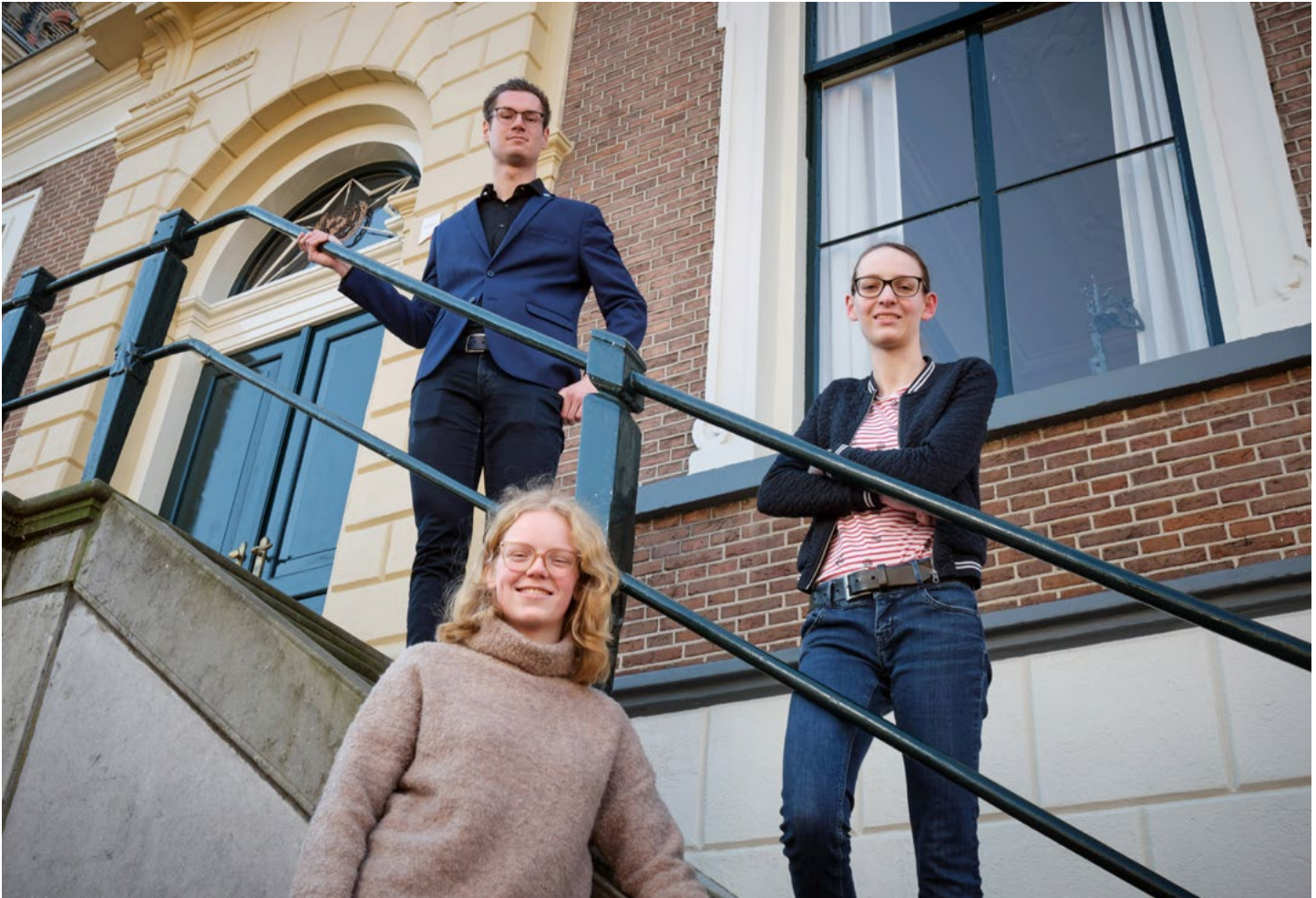
Sarah Alen
(Bachelor's student of Landscape Architecture and Spatial Planning) is only 20. Still, she already tops the list for Connect Wageningen, a local political party run by students, young adults and internationals. 'I was recruited during an AID market. They asked whether I was interested in politics and willing to help. I figured I would probably have a lot to do with provincial and municipal governments during my studies, and I knew nothing about that world, so I was interested.' And so Alen became a support group member for Connect. One and a half years later, she tops the list of candidates. 'I have learned much about how a municipal government works in a short time. It is, however, still a large step and exciting. I am following courses with municipalities in the area to ensure I can be a good municipal councillor.' According to Alen, being politically active and studying at the same time is an excellent combination. 'One week, you may have a political evening where councillors and group members get together to discuss cases, and the next week you have a group

meeting. That leaves you with a week in between to prepare at your convenience. And when you have exams, you simply skip a week. Being a municipal councillor is also a part-time activity.' Connect represents young people, students and starters, a group that is underrepresented in the municipal council, according to Alen. 'Ultimately, however, we are here for all Wageningen inhabitants. Connect actively keeps in touch with Wageningen residents such as students and entrepreneurs. Our party is very accessible, and we endeavour to involve as many people as we can in the political arena. Our strongest quality is that we lower the threshold for people to get involved.' Should Alen be elected to the municipal council, she aims to take steps in making Wageningen more sustainable. 'Currently, leaf-blowers with two-stroke engines are still being used. This can easily be done with electric equipment, reducing noise and emissions. Moreover, there are

'We fought for a night bus'

still fossil fuel-powered municipal cars.' The topic of accessibility is also important to Alen. 'There are plenty of young people who would like to go to parties in Utrecht. We fought for a night bus on Fridays and Saturdays to make this possible.' The campus' accessibility also features on her list. 'Take busy crossings, for example, where long queues of cyclists have to wait for cars at the traffic lights. Cars are still number one, and we feel that this position should be reserved for pedestrians and cyclists.'

Dirk Wevers
(Master's student of Molecular Life Sciences) has been active for VVD Wageningen since March 2021. 'It began with sitting in during group meetings, after which I joined a political evening. Soon thereafter, I was asked whether I would like to work on dossiers such as Beter Bereikbaar Wageningen (improved accessibility in Wageningen, referring to the redesign of the Nijenoord Allee, ed.)' Now, Wevers is fourth on the



From the left: Dirk, Sarah and Melissa in front of Wageningen town hall • Photo Guy Ackermans

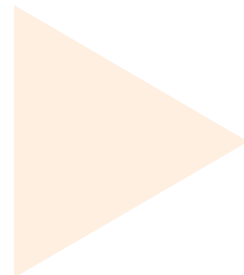
‘It is better to consider how much energy something gives you than how much time it consumes.’

VVD list of candidates. So far, he is well able to combine politics with his studies. ‘Working long hours and doing many different things gives me energy,’ Wevers says. He is currently doing an internship and has plans to launch a new student association. ‘It is better to consider how much energy something gives you than how much time it consumes.’ Should he make it to the council, there are several topics Wevers would like to address. ‘Wageningen climate neutral,

WUR CANDIDATES IN ALL PARTIES

WUR students and/or employees feature in the candidate lists of all eight parties that have joined the election. The numbers vary, however: CDA and VVD each have one student listed. D66 has one student and two employees, while ChristenUnie’s list of candidates includes three employees. Four students and one employee are listed for the PvdA, while GroenLinks has two students and four employees. The Wageningen Stadspartij has six employees. Connect comes top with 29 WUR names, almost all of them students.

for example. A huge challenge that has to be met in a realistic way and with a broad base of support. The current coalition of GroenLinks, D66, PvdA and ChristenUnie felt we would have to achieve climate neutrality in 2030. That was overambitious and has since been amended to 2040. We say: focus on 2050. That way, you avoid taking decisions you may later regret. Consider, for example, that you discover many of the houses in Wageningen cannot be made sustainable. You could choose to compensate through



solar farms and wind turbines. Still, you may also want to conserve nature around Wageningen. The VVD focuses on insulating houses, solar panels on roofs in as many places as possible, and cutting back on energy consumption. We also have high expectations for technological innovations.'

Another important topic for Wevers is for all citizens to feel free in Wageningen. 'Recently, we visited LHBTQ+ association SHOUT to discuss how the municipality might support this group and what their needs are.'

The lack of housing is also a major issue for Wevers. 'VVD has one critical precondition: the finances must be managed correctly. In recent years, expenditure was structurally too high, which was compensated by one-off windfalls, and reserves have been depleted. This approach can only last so long, and when it fails, the results are serious.'

Melissa van der Lingen (Bachelor's student of Business and Consumer Sciences and Economy & Governance) is fourth on the PvdA list of candidates. She has been politically active for some four and a half years. 'When I came to Wageningen to study, I needed to build a network. I was injured and therefore unable to play volleyball. When I heard about the political party Connect Wageningen, that was being established at that time, I became active.' Studying and local politics can be combined, says Van der Lingen. 'It requires diligent planning and accepting that you may sometimes be unable to achieve the highest grades or fall back a little.' After four years with youth party Connect, in which Van der Lingen held different positions, among which that of a municipal councillor (including bursar, support group member and councillor),

THE MUNICIPAL COUNCIL, HOW DOES IT WORK?

The municipal council is the highest governing body within the municipality. The council decides what is to happen in the municipality. The Municipal Executive implements the council's decisions, after which the council monitors whether the decisions are implemented in accordance with its wishes. Residents may elect council members in the municipal council elections every four years. The number of council members varies per municipality. Wageningen's council has 25 members. This year, eight parties have joined the elections. If they get enough votes, candidates from all of these parties may sit on the council.

Members of the same party are called a group. Groups that agree on major issues may collaborate and form a coalition. In general, groups will try to achieve a coalition that holds a majority in the council. A plan can only be ratified with a majority agreement. Groups that are not part of the coalition are called the opposition.

'You need to plan and accept that you may not always get top grades'

she switched to the PvdA in January 2022. 'Connect represents the voice of the younger generation, a perspective that I take with me to the PvdA, while at the same time leaving that bubble. It is not a move against Connect but rather a move for PvdA. I hope we both end up on the council.'

Van Lingen focused on mental health with Connect, a topic that will remain her focus of attention within the PvdA. It is partly thanks to her efforts that "chat jars" have been placed in cafeterias in Wageningen. These jars contain cards with questions relating to mental health. 'The idea is to take a card and strike up a conversation.' There are also subsidies available for organisations that support young people and their mental health during the covid pandemic. 'But there is still much room for improvement in this area, and the need certainly was not reduced during the pandemic. Thus, I call for attention for mental health in every issue where it

may be relevant.' Van der Lingen feels that the municipality should collaborate with education and the business sector in favour of prevention. 'The municipality is unable to solve the long waiting lists for the mental health service, but with a better prevention policy, fewer people would need that service.'

Van der Linden will continue to fight for young people and students from within the PvdA. 'That includes the aforementioned mental health issues, but also housing for starters and the climate transition. In the climate transition, we must strive to include everyone, also those with a limited spending capacity. We must prevent people from being literally left out in the cold due to the price of heating. These people will often stop inviting guests over, resulting in social isolation. We can't have that. Ultimately, we must solve this together.' ■

Unsure on who to vote for in the municipal council elections? Do the test on [wageningen.stemwijzer.nl](https://www.stemwijzer.nl). (in Dutch)

Ghana eats cheap Dutch chicken

Only with high import tariffs can Ghana build up its own poultry sector, says economist Peter van Horne.

On 1 April, the TV series 'Prijsknaller' (Price Buster) will focus on the export of Dutch chicken to Ghana, which is killing the local poultry sector there. The programme shows numerous abandoned poultry farms and talks to poultry expert Peter van Horne of Wageningen Economic Research about the causes of this problem.

Van Horne investigated the Ghanaian poultry sector last year on behalf of the Dutch embassy in Ghana. The sector cannot compete with imported chicken from countries such as the United States, Brazil and the Netherlands. The poultry farms in Ghana have poor housing and management, more expensive feed, and inferior chick hatcheries and slaughterhouses. All this leads to a less efficiently organized production chain.

The Gambia and Ghana

Van Horne also conducted research in the Gambia which imports 90 per cent of its chicken, just like Ghana. The EU has now opened an economic development office in the country, as it wants to stimulate the economy and reduce the flow of refugees from Africa. From that point of view, it would be good for

'The governments want cheap chicken to be available'

the Gambia to develop its own poultry sector and provide employment for a lot of people. This will not be possible, Van Horne concluded after research for the EU, because the production of poultry in the Gambia is more expensive than in Europe. Meanwhile, extremely cheap chicken legs from the Netherlands are



Photo Shutterstock

imported into the Gambia and Ghana. Activist groups call this dumping chicken in Africa, but that allegation is unfair, according to Van Horne. 'Dumping would mean that the chicken legs are sold for less than the cost price. And that is not the case. Dutch poultry farmers make a profit on their chicken fillets. Because there is little demand for chicken legs in the Netherlands, these are sold at low prices. There is no export subsidy, and the world market price is low.'

Protection

The Gambia has no import duty on chicken, while Ghana has a very low one. According to Van Horne, there is too little protection for farmers. The governments want cheap chicken to be available for the population and do not want protection. Senegal however bans imports of chicken from countries outside Africa and *does* have its own poultry sector. According to the researcher, import levies could contribute to a competitive poultry sector in Africa.

Ghana had a strong poultry sector in the last century. In the 1960s, the gov-

ernment supported the development of commercial poultry farming. And in the 1970s, the government reduced import tariffs on inputs (such as equipment and breeding materials), creating a competitive sector which supplied 80 per cent of Ghana's chicken meat and even exported some. But in the 1990s, Ghana implemented a series of trade liberalizations, resulting in more free trade and increased imports of chicken products. By 2000, most poultry farms had gone bankrupt or downsized, and currently Ghanaian poultry farmers produce less than 10 per cent of domestic demand. Dutch consumers have contributed to this development too. Since the 1990s, broiler chickens have been increasingly cut up into different products such as chicken fillets, drumsticks, chicken thighs and wings. Chickens are rarely sold whole anymore. Dutch consumers eat more fillets than chicken legs. The surplus chicken legs therefore end up on the world market at knock-down prices. AS

CAPSULE TRAVELS THROUGH THE GUT

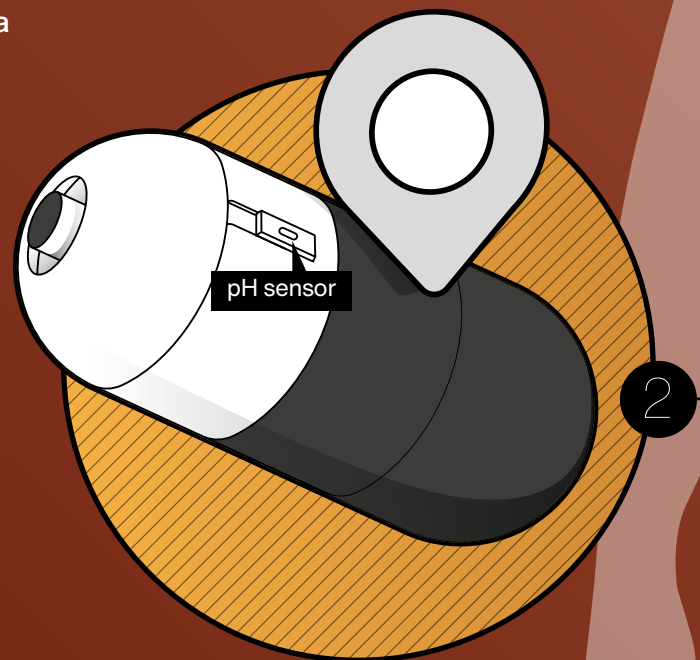
Smart capsules are going to improve our understanding of how food affects the bacteria and processes in our intestines, and what effects that has on our health. During her PhD research, Mara van Trijp developed a liquid that stabilizes the intestinal sample in the capsule, as well as methods of analysing the samples.

Text Stijn Schreven
Infographic Pixels&inkt



20 MM

The capsule has a length of about 20 millimetres.



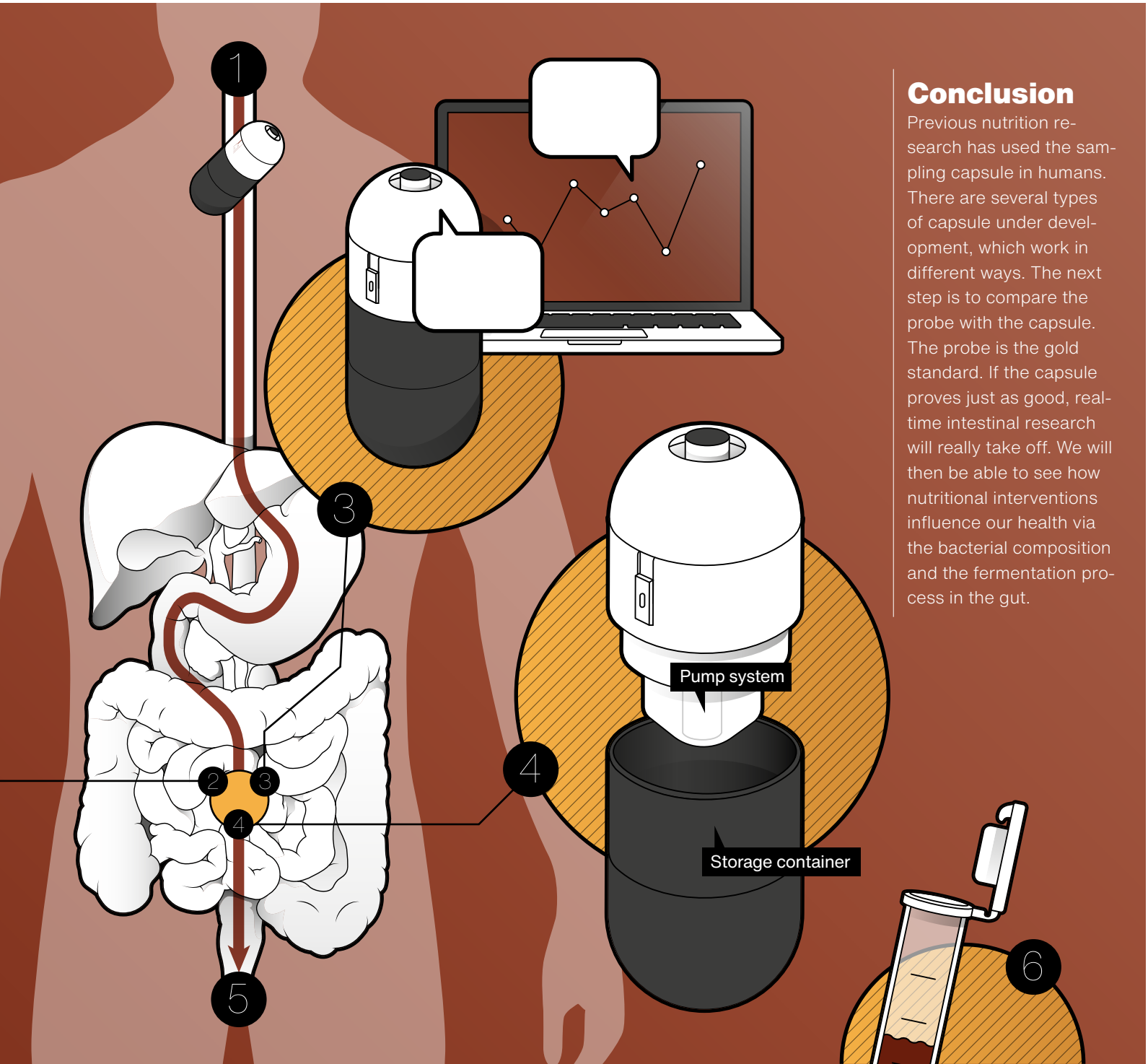
Dietary fibre is good for our health. Bacteria in the gut break it down through fermentation into short-chain fatty acids that can inhibit inflammation and nourish our intestinal cells. But quite how fermentation works in our guts is pretty much a black box. Mara van Trijp (Human Nutrition and Health) gained a better understanding of this by taking samples from the gut in real time via intestinal probes. However, inserting and removing the three-metre probe causes discomfort to the test subject. A small pill-shaped capsule is a sampling method that would be easier to swallow. Unfortunately, Van Trijp could not test the capsules, but she did make improvements to methods of using them. So how might such capsules work in the future?

1 SWALLOWING

Before a test subject swallows the capsule, the researcher adds a stabilizing liquid to the reservoir of the capsule. The liquid neutralizes the sample (see step 4).

2 THE RIGHT PLACE

The capsule contains a pH sensor. When the sensor detects from the pH that it is in the right place, it sends a signal. The pH in the stomach is low (2-3), while the digestive juices in the small intestine are less acidic and the pH rises to 7. In the large intestine, the pH decreases again to pH 5.5 due to bacterial acids.



Conclusion

Previous nutrition research has used the sampling capsule in humans. There are several types of capsule under development, which work in different ways. The next step is to compare the probe with the capsule. The probe is the gold standard. If the capsule proves just as good, real-time intestinal research will really take off. We will then be able to see how nutritional interventions influence our health via the bacterial composition and the fermentation process in the gut.

3 ACTIVATION

A device in the test subject's trouser pocket captures the signal and transmits it to a computer. There, the researcher can activate the capsule using a special program. Inside the capsule, a mechanism starts running and a valve opens.

4 ABSORBING

The capsule sucks gut contents into the reservoir until the examiner stops sampling and the valve closes. The test subject does not notice this. Van Trijp's stabilizing fluid stops fermentation in the sample, kills the bacteria and protects their DNA so that the sample remains stable until the capsule leaves the body.

5 EXCRETING

The capsule also contains a temperature sensor, which emits a signal as soon as the temperature drops below 37 degrees. The capsule has now left the body and is in the faeces. This takes anywhere between a number of hours and a few days after it was swallowed.

6 IN THE LAB

The researcher can analyse the sample in the laboratory. Van Trijp combined protocols for analysing bacterial composition, bacterial substances (short-chain fatty acids), and dietary fibres in order to use the sample of just 200 milligrams as efficiently as possible.

‘My friends in Russia don’t support this war’

Slava Shevchuk is from Ukraine and Andrei Tertienko is from Russia. They both study in Wageningen and live in the same student house. How do they feel about the war in Ukraine? *Resource* asked the two students on 25 February.



Text Albert Sikkema

Slava: ‘I am from Kyiv. It is sad that the city I grew up in will never be the same again. Some of my family are still in Kyiv, and some live in Italy.’

Andrei: ‘I am from Volgograd, a city in the south of Russia. I feel terrified by the situation. People are dying because of the war. I am angry with my government; I don’t want people to be killed.’

Andrei, do you know what Putin wants?

Andrei: ‘I think his goals are different from the goals of the Russian people. He doesn’t care about the economic situation of the population. He only cares about political power. But we don’t know anything for certain. A few weeks ago, Putin said that he wouldn’t attack, and now he has attacked. His slogan now is “demilitarization and denazification”, but I don’t know the real reason. Our government lies to us all the time. We, the Russian people, have little influence. They can do whatever they like.’

Slava: ‘Ukraine was always seen as a buffer zone between Europe and Russia. But we have higher aspirations. We have looked into the options for joining the EU and NATO. Over the past eight years, we have fought a war against the Russian-backed separatists in Donbas, so Ukraine was a shield and a reliable partner for Europe. We kept the conflict out of Europe, but now this conflict

is on Europe’s doorstep. A line has been crossed. I believe the EU needs to support us and send weapons and aid. Not for us to attack Russia but to keep what we have. I have friends and family in Kyiv who now have to live in bomb shelters. It is surreal. The metro line in Kyiv was constructed deep under the ground so that it could serve as a bomb shelter back during the Soviet Union days at the height of the Cold War. I just never thought that people would have to use it as such during my lifetime.’

Is Ukraine a divided country, with a Russian-oriented eastern part and a Europe-oriented western part?

Slava: ‘It is a fact that we have different people, but we are a sovereign nation, and we decided to look to the West. But we have a lot of cultural connections with Russia. My grandmother is Russian, she spoke Russian, and she has never felt discriminated against in Ukraine. Some speak Ukrainian, and some speak Russian. We don’t have a problem with people using the Russian language. It is a free country.’

Andrei: ‘We are interconnected. My family is Russian, but I have a Ukrainian last name, Tertienko. Ukrainian names are quite common in Russia.’

How can we achieve peace?

Andrei: ‘I just read that they want to meet to discuss the status of Ukraine. I don’t know if they can find a compromise.’

Slava: ‘Friends and family in Kyiv are living in bomb shelters now’

Slava: ‘The people of Ukraine are determined to stand their ground. The government of Ukraine will not surrender. That is not an option after this invasion. But we must find a compromise to stop the war. There can be no compromise on sovereignty and integrity for any nation. Still, we can discuss and find a way to respect each other’s security and strategic choices. For the breakaway regions in Donbas, we can discuss a solution where the local population will have a chance to have their voices heard, but in democratic and fair elections, not under threat.’

Andrei: ‘Putin will not go for such an agreement. He wants to change the government of Ukraine. He wants a pro-Russian government.’

Slava: ‘That will not last long. We will have a new Maidan revolution.’

Andrei: ‘It might be possible to end the war, but we cannot predict what our government will do. It is important to understand that our government doesn’t represent Russia and the values of the population. We do not know how many people actually support the war or the independence of Donbas because we no longer have reliable opinion polls. The thing is that the population is subjected to propaganda every day. Still, in spite of this

Andrei: ‘It’s important to know that the Russian population is not the government’

propaganda, my friends in Russia don’t support this war and are disgusted. We see an increasing number of open letters and public speeches by celebrities, and several oligarchs are even asking the government to stop the violence. It is important to know that the Russian population is not the government.’

‘The government is using fake news to legitimize its actions and has created a police state in the past ten years to suppress mass protests. In Russia, you get arrested and beaten when you express your opinion. Many people get sentenced to prison just for joining a peaceful protest. Russian people would protest a lot, but propaganda, the risk of arrest and violence, and the destruction of the whole opposition really suppresses protest activities.’

Do you want to go back to your country?

Slava: ‘I don’t see myself working in Ukraine at the moment. My goal is to do research on biodiversity in agroforestry in tropical regions in the world. However, I would love to go back and visit my friends and family when this is all over, and I hope that will be sooner rather than later.’

Andrei: ‘I would like to go back to see my friends in Russia, but I don’t want to live in Russia. The problems in Russia get worse every year. Life in Russia isn’t good. Here, we are equal to everybody else. I am studying Environmental Sciences, and I hope to help the Earth.’ ■



Andrei (left) and Slava in their student house • Photo Guy Ackermans

THE SMILING TOMATO

The oldest tomato in the world can be found in the basement of Naturalis natural history museum, shows a study by botanist Tinde van Anandel and her right-hand person Anastasia Stefanaki.



Text Roelof Kleis

So there it is, the *En Tibi*. One of the oldest herbarium books in the world. Supported by two cushions, on a trolley in the catacombs of Naturalis natural history museum in Leiden. And this reporter is allowed to pick it up and hold it. Just like the scholar and book collector Isaac Vossius did in Stockholm, when he was a librarian indexing the Swedish queen Christina's treasury. As did Christina herself when she received the book as war booty at the end of the Thirty Years' War. As did the Habsburg Emperor Rudolph II in Prague, in whose treasury it once lay. And his grandfather Emperor Ferdinand I, the probable patron of the masterpiece.

Herbarium

And of course, as did the Italian botanist Francesco Petrollini, who made the herbarium in 1558. We know this since Anastasia Stefanaki (Biosystematics, WUR) conducted an extensive study of the contents and origin of the book. She not only identified the 500 dried plants in it, but after a meticulous study done with a team of specialists, she came to the

conclusion that the creator of the famous herbarium must have been Petrollini.

That put an end to a previous assumption that the *En Tibi* was the oldest herbarium in the world to include a tomato plant. Thanks to Stefanaki's research, we now know that honour belongs to a herbarium by Petrollini's contemporary and colleague Ulisse Aldrovandi. In 1551, he started a herbarium that would eventually fill 16 (!) volumes and include no fewer than 4000 plants. The tomato plant is in the first volume.

Dried

'The two books are seven years apart. But it's not a competition, is it?' is Stefanaki's laconic comment on that second place. And after all, the *En Tibi* (Latin: 'Here for you') is special enough in itself. It contains the oldest tomato plant with a ripe fruit. Dried, of course, but still. There, that's the one! The little plant is halfway through the book, labelled number 294. *Salunca Puma Amoris*, it says. The colours have faded slightly over the past half millennium. But the red is still clearly visible.

The tomato is in 2D. How is that possible? 'Petrollini peeled the skin off the

tomato and put it in the book in a round shape so that it looked just like a real tomato,' explains Tinde van Anandel, special professor of Ethnobotany. It is not known exactly how the botanist did this, but the dried tomato is certainly unusual. 'None of the other herbaria from that time have one, or only unripe or very small ones. Or botanists painted one in. This is a really good tomato.'

Looted art

The *En Tibi*'s full name is *En Tibi perpetuis ridentem floribus hortem*. In other words: 'For You, an eternally smiling flower garden'. The 16th century herbarium is one of the top pieces from the Naturalis collection. Queen Christina

'IT GOT COMPLETELY OUT OF HAND, IT'S INCREDIBLY COMPLICATED'



The oldest tomato in the world

gave it in payment to Vossius, who sold it - together with several thousand other books - to Leiden University in 1690. The university gave it to the Leiden Herbarium, which was merged with Naturalis in 2009. 'Actually, it is looted art,' Van Anandel remarks dryly. 'Not by the Dutch, but by the Swedish bibliophile Queen Christina, who got it as war booty.'

Van Anandel calls the *En Tibi* a 'masterpiece of art and science'. But its contents and history have long been kept obscure. That is not uncommon, she

says. 'The more you have in your house and the more valuable it is, the stronger the locks on our doors need to be.' This is one of the difficulties she encounters in her work. Administrators are careful with their treasures. 'Only after digitization was it possible to study the book properly,' Stefanaki adds. 'That determination of the plants was in fact the first step towards finding out where the book came from.' The digitization took place on the initiative of Van Anandel and the then-new collection manager of Naturalis in 2009. 'We thought it was a shame that the book was just lying around in the warehouse and nobody was looking at it. The digitization was a costly undertaking, though. These are

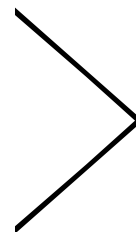


The scholar Isaac Vossius sold the *En Tibi* to Leiden University in 1690

not flat sheets that you can scan quickly. And the book is fragile and has to lie on cushions. A whole cage was built around it in order to take the photos. Cost: Six euros per page. At the same time, we engaged Anastasia to identify the plants. She is Greek and knows the Mediterranean flora. But believe me, it was quite a tough job. There are 500 of them and not all of them are clearly recognisable.'

Dan Brown

The research into the origins of *En Tibi* led to a follow-up study on the arrival of the tomato in Europe. Van Anandel: 'Anastasia had discovered that the maker of the *En Tibi* had made an even older herbarium with a tomato plant. So ours was not the oldest. She had also looked for various illustrations from that time. Then Covid hit and suddenly we had



nothing in our diaries. So I was crazy enough to say: come on, let's look into this properly. And that got totally out of hand, because it is incredibly complicated.'

Anyone who imagines this detective work to be some kind of Dan Brown-like tour of old libraries is in for a disappointment. Most of the research is done online and at a desk. That is, if books have already been digitized. Van Anandel: 'Sometimes books have been photographed, but then they are not always online. Sometimes they have not even been photographed and you have to ask for a high-res photo. Or there are drawings, but there are 500 of them and you just have to search through them to find out which one is the tomato. It was a huge quest.'

The search eventually resulted in an overview of eight surviving 16th century herbaria with a tomato plant, various descriptions of the new plant and 13 illustrations from that time. These show the enormous diversity of tomato plants that were brought to Europe from the New World. 'There were a lot of different varieties,' says Van Anandel. 'Some were long and ribbed, others more like small bulbs. There was a great diversity of shapes and colours.' And

'THESE WERE THE FIRST HERBARIA BOOKS EVER MADE'



Tinde van Anandel (left) and Anastasia Stefanaki carried out in-depth investigations into the content and origins of the *En Tibi* • Photo Roelof Kleis

perhaps even greater than we realized up to now. 'You can only look up the published drawings by famous botanists. All the scribbles just below that level have fallen into oblivion. Their work is stored anonymously in libraries and gets forgotten.'

Drying process

Nevertheless, Stefaniki thinks you are unlikely to find any tomato plants or illustrations of tomatoes that are even older than these. 'These were the first herbaria books ever made. They mark the beginning of botany as a distinct science. These people were the first to go out into nature and collect plants, dry them and glue them into books,' Van Anandel adds: 'They are also all botanists who knew each other and were in the same class. Their teacher was Luca Ghini, who taught botany in Pisa. He discovered the drying process. Those tomato plants probably all come from the same gardens in Florence, Bologna and Pisa. By the way, we know of other students of Ghini who made herbaria, but their books have sunk without trace. Perhaps they will be discovered one day.' ■

LOVE APPLE?

The tomato in the *En Tibi* is labelled *Salunca Puma Amoris*. That is a mistake. *Salunca* is the name of the other plant on the same page. Nor is the tomato a 'love apple'. According to Van Anandel, the plant was confused with the aubergine (*Pomes da Mouri*) that was brought from Asia by the Moors. The corruption into 'love apple' is thought to refer to the supposed aphrodisiac properties of the tomato. The name 'tomato' is actually derived from Nahuatl, the language of the Aztecs. They call the plant *tomatl*.



UNIQUE houses

There are student houses and there are weird and wonderful student houses. In this column we visit the latter. This time it's Emmepark.

Sander: 'There are about ten Argo houses. Most of them are fairly recent. This house has been a student house for five years now.'

Roos: 'There was even a court case about it. The neighbourhood was afraid that a student house would disrupt the "cohesion of the neighbourhood". That case is still used as a case study in law degrees.'

Ate: 'We have good relations with the neighbours, by the way.'

Roos: 'Of course they hear a bit of noise sometimes, but we have each other's telephone number so it is always quickly solved.'

Ate: 'We don't do as much maintenance as the neighbours. Drilling in the walls when you're studying at home is as big a problem as a party at night.'

Roos: 'It's because of the landlord that

only Argo members live here. Or actually, because of his wife, who was once a fanatical rower with Argo.'

Ate: 'To start with, a lot of competitive rowers lived here, and it was a really healthy house. You had to watch your diet, your sleep, and not drink...'

Sander: 'It's not like that anymore, though.'

Ate: 'It is nice to be a club house, but also a bit limiting. It can make it difficult to find a new housemate, especially now that there are lots of rooms available.'

At the start of the year there was a room shortage, but now a lot of people are looking for housemates.'

Roos: 'When we have new housemates, we take them to all the Argo houses to show them off. Then they know where all the houses are from the start.'

Sander: 'And everyone knows the new resident.'

Floor: 'I moved in just after New Year's



Emmapark

Residents:

Ate Frijters, Floor Kutsch Lojenga, Roos van Haeff, Sander Eradus, Tijmen van Rietbergen, Veronica Leonard

Unique because:

everyone is a member of Argo rowing club

Eve. We had picked up a Christmas tree somewhere nearby, which I had to take along with me and offer to every house. Of course, no one wanted a Christmas tree on 15 January so I had to lug it everywhere with me.'

Sander: 'In the end, it ended up in the Hoogstraat, where it stayed until last week.'

Would you like to be in *Resource* with your UNIQUE house? Email us at resource@wur.nl.



From the left: Roos, Floor, Ate and Sander • Photo Guy Ackermans

Lecture halls still emptier than expected

COLD FEET?

The campus already looks a lot livelier than it did just after the lockdown. But the lecture halls are still not full, say lecturers from Wageningen.



Text Marieke Enter

More than 100 students register for 'your' course. You factor in a few dropouts, because there always are some. But you obviously book a large lecture hall. You also ask for not one but two student assistants, so that your students get exactly the kind of personal support everyone so sorely missed during the lockdown.

So it's a bit disappointing when only 15 students show up for the first lecture, and no more than 20 for the practical sessions. There you are then, in an awkwardly empty lecture hall... Yann de Mey, associate professor of Business Economics, knows how it feels. And he is not the only one. Lecturers from WUR and from other universities have found themselves with emptier classrooms than expected since the latest return to campus education.

Was it hard to take that meagre interest in your live lectures?

'My pride was a little hurt, yes. But then again, I was a student once too; I can imagine the reasons for not coming to lectures. That it felt uncomfortable was mainly to do with expectations. If I suspect in advance that there is not much enthusiasm for live lectures or

practical sessions, then I take a different approach: I plan a shorter session for the students who appreciate personal contact, and the rest can do it at their own pace. That is generally fine by me, it just wasn't what I expected in this period. I had to change my mindset.'

Apart from denting your pride, is the low level of interest detrimental in other ways? Does it detract from the quality of education, for example?

'Yes, I think it does actually. The lockdowns have taught us that you can do more through online education than we always thought. For example, I was forced to make my materials more suitable for students to work with independently. It is certainly possible to master the material independently, but that does have an impact on the quality. Like many teachers, I like looking for ways to interact with students. When you respond to their questions you can delve quite deep and really get to the heart of the matter. The dynamics of that are much more limited online. Online education also gives me less of a sense of where the students stand in

terms of their level. I can't see whether they make mistakes and which ones, so I can't help them to correct them as much.'

Are you worried about the upcoming exam period?

'No, I still have a lot of faith in my students - they will deal with it and they are used to online education by now. And maybe I miss the connection more than they do; as a teacher, it recharges my batteries. Some academics dread teaching large groups of students and are completely exhausted afterwards. I never have that. My voice gets hoarse, yes, but the interaction with students gives me tremendous energy. And I feel that much less online. The dynamics are just not the same.'

'EVERYONE IS READY TO WELCOME THE STUDENTS BACK, SO DO COME'



Are the somewhat empty lecture halls just teething trouble as we get back to normal? Will they fill up again in time? Lecturer Yann de Mey fervently hopes so.
 ♦ Photo Yann de Mey

Do the students know that their teachers miss them so much; have you told them that?

‘I tried to, in a lighthearted way with a jokey message on BrightSpace. Since then, participation has increased a little, but there are still quite a few students who prefer to attend lectures from home.’

Time for compulsory attendance then?

‘Preferably not. Do lecturers really have to dangle a carrot in front of their students to lure them to the campus? That is not our responsibility. Besides, it is at odds with the need for people to stay away because of illness or quarantine.’

So is this just teething trouble as we get ‘back to normal’ again?

‘No doubt there’s an element of that. Campus education is no longer an automatic routine. And because we started 2022 online - against our will, but we had to – we couldn’t create much of a

group feeling. Then it can be quite scary as a student to leave your comfort zone at home for a campus you don’t know that well, with people you don’t know very well yet.’

And what if the preference for online classes is permanent?

‘Teaching online gives me less energy and is a waste of the marvelous educa-

tional facilities we have here in Wageningen. But I can make my peace with keeping some of the education online.’

Really?! Even when you think back to that big, disappointingly empty Aurora hall?

‘Well, yes, okay - that did feel very strange and a bit sad even. But that was due to a mismatch in expectations. I can definitely handle teaching online as well. But I’m still hoping the lecture theatres will soon be full again.’ ■

INSTA POLL: 80/20

Most students (80 per cent) prefer campus-based education to the online option (20 per cent). This is evident from a (by no means representative) poll conducted by *Resource* on Instagram. In the poll, *Resource* also asked why students prefer campus education. The following advantages of campus education were mentioned: interaction with fellow students, prevents loneliness, easier to ask questions, fewer distractions. The home variant scored points such as ‘because you can pause lectures if your attention wanders’ and obvious reasons such as ‘nicer if you have a hangover’, ‘I don’t have to get up so early’ or ‘don’t feel like cycling to the campus (especially when it rains)’. And also: ‘Because I can knit at home during boring lectures.’

Keep the blaze contained

By altering the design of the landscape, wildfires can be kept under control. The new course in Pyrogeography teaches students the tricks of the trade.



Text Roelof Kleis

The cartoon depicts a forest with a fully decked out firefighter standing by a small fire, hands on hips and taking no action. The speech bubble makes it clear why: small fires prevent larger ones. ‘Many fires make light work’, in other words.

The illustration is one of a series made by Ivo Verhaar (Master’s student in Environmental Sciences) and his group as the final assignment for the new course in Pyrogeography. In a sense, the cartoon summarises the new way of thinking that lies at the foundation of Pyrogeography. Wildfires are a natural phenomenon but must be contained.

‘Fire is a good servant, but a bad master,’ says Cathelijne Stoof, quoting an English proverb. ‘Wildfires are a natural phenomenon that you cannot always prevent, nor should you. Nature can handle the odd fire and even benefits from it. Fire has a purpose in the landscape, much like floods do.’ The analogy between water management and fire is one Stoof enjoys making. She refers to the new approach as integrated fire

management. ‘It means looking at fires from a holistic perspective, involving everyone who has an influence on how fires start or is affected by them.’

Increasing

Prevention is key in this new approach. Prevent fires from becoming so large that they rage out of control. Stoof: ‘Increasingly, fires become so large that we are no longer able to suppress them, while nature is unable to handle their impact.’ The rising temperatures on our planet will cause the number of wildfires to increase significantly. Funds and focus are directed primarily at fighting the fires, Stoof says. ‘The fires are never linked to landscape management. What circumstances allow a fire to spark and spread so easily? The idea behind Pyrogeography is that we need people who have an integrated perspective.’

The course focuses on environmental science: how does a fire start and how does it impact nature, but also on social sciences. Stoof developed the course in collaboration with Jasper de Vries of Strategic Communication. ‘There is a significant social driver behind wildfires,’ Stoof states. ‘In southern Europe, for example, it is depopulation of rural areas. Fewer people live in rural areas, which means there are fewer people to manage the landscape. Previously, small-scale farming ensured landscape management.

‘We need people who have an integrated perspective’



The new approach to wildfires focuses on prevention • Photo Shutterstock

Not anymore. This means there is literally more fuel available in nature.’

Fire expertise

Pyrogeography focuses strongly on practice. Stoof invited speakers from all over the world to apply their expertise to different geographical contexts. She stresses the importance of interdisciplinarity and the link between science and practice. One of the speakers, for example, is Marc Castellnou, the fire chief from Catalonia who is currently doing a PhD in Wageningen under Stoof. It is precisely that input from the field that makes the course extra interesting, agrees MSc student Verhaar. ‘Because Cathelijne has such an extensive network in that domain, we had many guest speakers. People from the field who are not just academics but also have a firm base in the field. They really fight fire.’

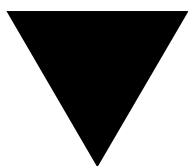
This link with practice is also featured in the final assignments. Guest speakers and other ‘informants’ presented a problem related to wildfires. ‘The assignment was to develop a creative solution,’ Verhaar says. ‘Our informant was Jelmer Dam, wildfire coordinator of the Dutch fire brigade. His issue was that people in the Netherlands are insufficiently aware of the causes and risks of wildfires.

And even if they are interested, their focus is on suppression rather than prevention. And as soon as there is some rainfall, everyone immediately forgets the issue.’

Creative

Verhaar and his group made two series of cartoons that illustrate the current situation and the desired situation. They also linked their solution to water management. Verhaar: ‘What would happen if we approached water management in a manner similar to fire management, reactively instead of proactively? The country would be flooded. The other series of cartoons shows a situation in which we approach fire management as we currently do water management. If we collaborate and manage the landscape properly.’

‘If you are creative, you process information in a different way,’ Stoof says, explaining the assignment. ‘It is a way to teach students to apply their acquired knowledge differently. They received a class in creativity from Simon Bennet, a teacher at the Rietveld Academy.’ This resulted in animations, cartoons and games, all of which will be shared with the public. Verhaar is convinced: ‘I will write my thesis on wildfires, and Cathelijne will supervise.’ ■



Key people: Floris Gerritsen

They are indispensable on the campus: the cleaners, caretakers, caterers, gardeners, receptionists - the list is long. *Resource* looks up these key people. This time, meet Floris Gerritsen (28), a technical and teaching assistant for the Physics and Physical Chemistry of Foods, in AXIS. Text Milou van der Horst • Photo Guy Ackermans

‘Basically, I make sure that everything in the lab works so students can do experiments for their thesis. My fellow technical assistants and I give students introductions on how equipment works and we do the maintenance of equipment ourselves whenever possible. I regularly walk around the lab to see how things are going and check that students are working safely. I tell them when there’s a better way of doing something or if a dangerous situation arises. For example, I point out that they shouldn’t wear shorts, because dangerous substances can burn bare skin. It’s not nice when they get irritated by

‘Working with students is fun because they are motivated and keen’

that or when I have to say it several times. I also coordinate the practicals for physical food technology courses. I make sure that all the necessary equipment is available, the supervisors know which experiment they are helping with, and the students know what to expect from the practical. In Covid times, we could still run the practicals, but they did involve extra work. We had to enforce rules and keep track of more things, such as who was operating which apparatus, who was in which lab, and who had Covid. I hope I will soon have more time for other things, like my own little research projects. If interns or companies want to know something about samples they’ve received, I look into it for them. School didn’t really interest me when I was young. After secondary school, I

did a vocational course on laboratory technology and then an applied science chemistry degree. I liked the combination of ‘cooking’ with chemicals and the technical equipment. After my studies, I worked in a lab where I did exactly the same thing every day - extremely boring. Now I have been working here for one and a half years and it is much more fun. The work is more varied and you learn more from it, partly because of all the different students. Everyone is different and you learn and hear something new from everyone. Working with students is fun because they are motivated and keen. For example, I noticed how pleased they were to be able to come to the campus to do experiments. Some of them are the same age as me, so I have to be careful to maintain a bit of distance and not get too chummy.’





Campus ♦ residents

Becanex

Cannabis. The word automatically makes you think of joints, getting high and Dutch coffee shops. But Becanex, a company on the Wageningen campus, processes cannabis into what it calls a tincture that makes you sleep well.

Becanex has now been going for three years. One of the company founders was Eral Osmanoglou, who graduated in Food Process Engineering 11 years ago. He developed and patented a special extraction technique for getting all the cannabinoids out of the cannabis plant. These are cannabis plants with little or no THC - which gets you stoned - but with useful cannabinoids such as CBD. This substance is widely used for pain relief, stress reduction and better sleep.

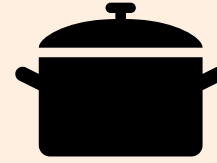
Osmanoglou runs the company with Sebastian Kamphorst, from Germany, and they have set up a new extraction plant in Berlin. The company now has a turnover of 2.5 million

euros, and its bottles of cannabis tincture can be found in retail chains such as Jumbo and Etos. It can be a healthy alternative to sleeping pills, says Osmanoglou.

Becanex is now working on a project with Renger Witkamp, professor of Nutrition and Pharmacology at WUR, to determine how many cannabinoids are effectively absorbed by the body. 'We want to know that in order to determine the right doses.' The company deliberately chose the combination of Berlin and Wageningen. 'Berlin is the online marketing capital of Europe and Wageningen is the knowledge capital,' says Osmanoglou. The company, which has an opium exemption, now also makes pharmaceutical ingredients with a lot of THC in them, for epileptic patients, for example. As

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

All the flavours of the world can be found in the WUR community. Mariana Custódio (22), a Master's student of Plant Sciences, takes us to Portugal.



Flavours of WUR

Bacalhau com Grão

(Cod with chickpeas)

'My parents used to make this salad in the summer holidays in southern Portugal. It's a light and flavour-some dish that always reminds me of warmer days. It's really easy to make, I always have it when I need a 'pick-me-up', and I love that it's a convenient dish I can bring to campus. I prefer to eat it cold, but it is also OK to have it warm. The key ingredients of this dish are good quality olive oil and cod.'

- 1 Boil the cod in water with salt for 5-8 minutes (or according to the instructions on the package).
- 2 Remove the cod, let it cool down and shred it into small pieces.
- 3 Boil 2 eggs.
- 4 Rinse the chickpeas.
*This recipe uses cooked chickpeas. If you are using dry chickpeas, soak and cook them first.
- 5 Finely chop the onion.
- 6 Put the fish, chickpeas and onion into a bowl.
- 7 Season with 3 tablespoons of virgin olive oil, a pinch of salt and pepper and a bit of chopped parsley.
- 8 Peel the eggs and cut them into small pieces.
- 9 Add the eggs and mix everything together.
- 10 Optional: add a few black olives.
- 11 Adjust the salt, olive oil and parsley to taste.
- 12 Enjoy!

Ingredients (for two people):

- 2 cod fillets
- 1 can of chickpeas (around 300g)
- 1/2 medium onion
- 2 eggs
- Fresh parsley
- Virgin olive oil
- Salt
- Black pepper
- Black olives (optional)



Mariana Custódio
MSc student of Plant Sciences
from Portugal

10-euro lunch voucher

Share your recipe with *Resource* and get an **Aurora voucher worth 10 euros**.
resource@wur.nl

IN MEMORIAM

DREW SMITH

We heard on 5 February that Drew Smith had passed away. We are deeply shocked by the sudden death of Drew, who was a first-year Master's student of Plant Sciences. She died of natural causes.

Drew was a very talented student. She started on her Master's last September as one of the students who were awarded a scholarship through the WUR Excellence programme. And actually, we were proud that, with all the talent and academic capacities that were clear from her application, she chose Wageningen University for her Master's.

Drew came to Wageningen from Canada, and lost no time in

drawing up an ambitious study plan with the aim of preparing for a PhD. She loved cycling to campus for her courses, and successfully completed them with very good marks, in spite of her medical condition. She was dedicated and determined to get the best out of her studies. Drew was keen to maintain her independence and she had a lot of contact with her caring family back home in Canada. We wish Drew's family and fellow students a lot of strength to cope with their terrible loss.

On behalf of the Plant Sciences Programme Team, Anja Kuipers, programme director

FRANS VAN AGGELEN

Frans van Aggelen passed away on 16 February 2022. He had worked as an insect breeder in the Laboratory for Entomology for over 40 years. He bred dozens of species of insect, from Colorado beetles to butterflies, and from grasshoppers to malaria mosquitoes. He took great care of all these creatures: the malaria mosquitoes even got to drink his own blood for years. His work with insects was his great passion: he loved animals and nature. He suffered increasingly from ill health in

recent years, but his optimistic nature helped him to cope for a long time, until he lost the battle. We have lost a committed and optimistic colleague in Frans, and our thoughts are with his wife Anja and his children and grandchildren. We wish them strength to bear the loss of a good person.

On behalf of the laboratory for Entomology, Marcel Dicke, André Gidding and Pieter Rouweler

MARCEL VISSER

Marcel Visser, a technician at Plant Breeding, passed away on 22 February at the age of only 61. Marcel had had an operation for cancer of the oesophagus and appeared to be recovering well. He had just started returning to work in early February, and he was very happy to be back with his colleagues in Radix. Two weeks later it turned out that there were metastases and after that he deteriorated very quickly. Family was very important to Marcel, but his work had an important place in his life as well. His career in Wageningen started in 1986 in the research institute ITAL, where he worked in tissue culture. In 1990 he moved to CABO (and its successors AB-DLO and PRI) for physiological and biochemical research. In 2003 he was

seconded to the Plant Breeding chair group to propagate and maintain the potato tissue culture collection. And then he stayed on at Plant Breeding, where he really felt at home.

Marcel was very sociable and involved in the ups and downs of Plant Breeding. He was always positive and ready to help everyone in Radix. Marcel also fulfilled the role of emergency response officer throughout his career, until he became ill.

We will miss Marcel very much. We wish his wife, son and daughter strength in coping with their loss.

René Smulders on behalf of all colleagues in Plant Breeding

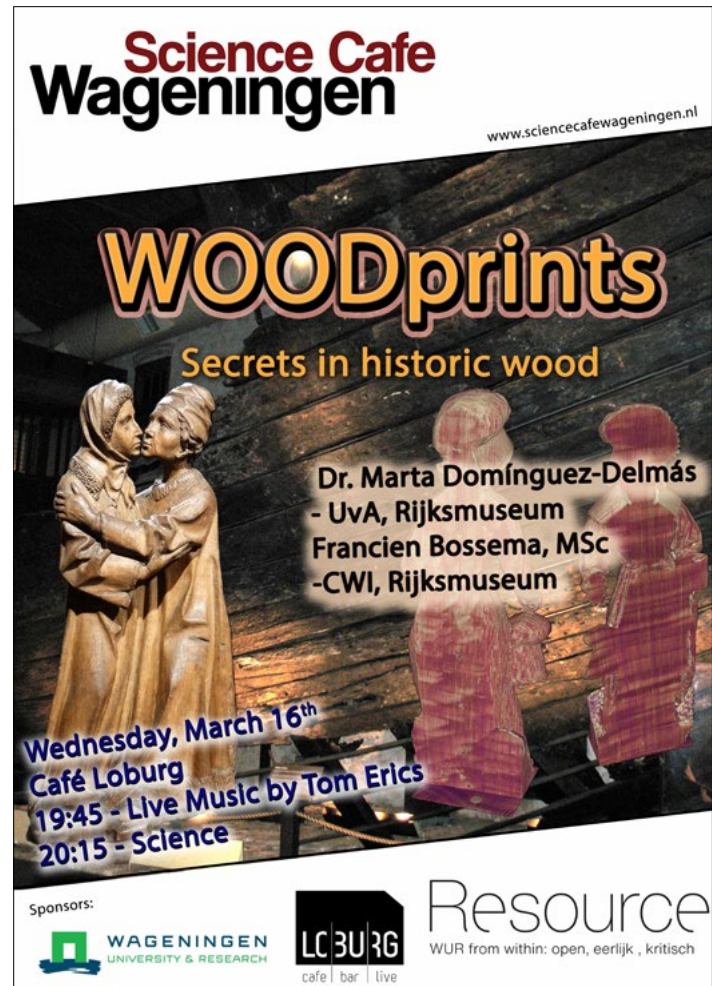


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Wednesday, March 16th
Café Loburg
19:45 - Live Music by Tom Erics
20:15 - Science

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War memeology

What experts considered impossible happened nonetheless: a large-scale Russian invasion of Ukraine. If you listen to podcasts from just before 24 February, the day Russia invaded Ukraine, it feels as if you go back several years to a time when a major war in Europe was no more than a dark and highly unlikely scenario. In the international WUR community, Ukrainians and Russians are never far away. And in my case, very close. My girlfriend Anna, a student at WUR, has a Ukrainian mother and Russian father. She is fluent in Russian and knows people in Ukraine.

We only allow a modest percentage of global issues to seep into our daily lives, lest we have no personal life

‘We didn’t volunteer for combat. But we did volunteer for peace rallies in Dam Square’

left at all. We didn’t volunteer for combat. But we donated money and blankets, and we volunteered for peace rallies in Dam Square in Amsterdam. The first of which was attended by

a staggering 15,000 protesters. The Dam couldn’t fit them all. Although it won’t end the war, it gives mental support to the people afflicted and it encourages strong government policies.

I consider a sense of humour and a sense of perspective in the face of imminent and even present calamity a typical expression of both Ukrainian and Russian culture. The Russian opposition leader Alexei Navalny is a perfect example, as is the official Ukrainian Twitter account @Ukraine. This account is managed by young people, who add memes for flavour (if you have never heard of memes, google the word). Young Ukrainians record TikTok videos in bomb shelters, and provide commentary on issues large and small through memes. We are at Dam Square with our home-made placards. Anna drew a meme that was shared on the @Ukraine Twitter feed. I came up with a slogan. During the protest, a friendly lady asks us if she can take a picture of Anna’s placard. The lady turned out to be the well-known actress Victoria Koblenko, who has 200,000 followers. She shared Anna and her protest sign on her Instagram. A podcast with experts discussing geopolitics is useful, but nothing beats refreshing communication in the shape of memes.



Steven Snijder

Steven is a Master’s student of Economics and Governance and enjoys playing squash. He is always open to a game of squash and a good conversation: steven.snijders@wur.nl

Colophon

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Hangover

'I've had quite a healthy lifestyle over the past two years. There were fewer parties because of Covid and I was so busy with my thesis that I didn't drink much at home either. Now that my diary is filling up with drinks dos and parties, I am finding my alcohol tolerance is not what it was... Last Sunday, I couldn't do a thing due to a major hangover. Of course one solution is to drink less, but does anyone have tips if you happen to have had one too many?'

J.G., student
(name known to the editors)



Drink less

'I have almost completely stopped drinking alcohol since early 2019. I rarely drink, and when I do, I have a maximum of one or two beers. So if you have a bad hangover after drinking, I recommend you just drink less.'
Andre Kuhn, Biochemistry postdoc

Enough sleep

'Good to hear you're having such a good time at the parties now that the Covid restrictions are being lifted. A hangover is certainly tedious, and the best solution is to drink less. I myself find that sufficient sleep after a party reduces the hangover. I advise you to eat a hearty meal before you drink and to drink a lot of water throughout the evening. Also eat something salty before you go to sleep, to prevent dehydration.'
Mariska Lensink, BSc student of Nutrition and Health

Embrace it

'Noticing that your tolerance has decreased can be annoying, but it's also a blessing! You'll spend less money for the same effect, and you'll drink less, which is good for your health. That aside, it is also important that you build up slowly and don't immediately start downing the amount of alcohol that you used to drink. And make sure you drink plenty of water in between alcoholic drinks, which will ensure that your hangover is less intense the next day. Otherwise, lots of water and aspirin the next morning will help too. Good luck with future parties!'
Vincent van de Pas, MSc student of Biology

Healthy breakfast

'My advice is to drink a lot of water during the course of the evening. This will prevent you from getting a (massive) hangover. If you forgot to drink water throughout the evening, at least drink a couple of glasses before you go to bed. Eat enough before you start drinking and, despite the hangover, avoid coffee the next morning. It will only make the hangover worse. Eat a healthy breakfast, exercise and drink plenty on the day after the party.'
Bauke van Gils, MSc student of Animal Sciences

Fluids

'Drink plenty of fluids! Drink water before and after the party. I drink a great homemade sports drink for extra hydration on hot days: add a pinch of salt, a teaspoon of sugar and one lime to one litre of water. The first time I made it, it got hot in the sun, which I would not recommend. For preference, store the drink in the fridge.'
Chloé Girka, Geo-Information Science alumnus

NEXT WURRY

'Lots of people in Wageningen are involved in things like climate change, sustainable agriculture and nature conservation through their study or job. I've been living here for four years and I've got used to this "Wageningen bubble" where a sustainable life is normal. But when I'm back home, I see that people in the rest of the country aren't interested. Friends even tease me about my "ideals". How should I deal with this mismatch?'

M. de G, student
(name known to the editors)

Do you have advice or tips for this WURrier? Or could you use some good advice yourself? Email your tips or your question (100 words max) by 18 March to resource@wur.nl subject noWURries.