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148 PhD students get Covid compensation

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FOREWORD

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Resource editor

The crocuses are shooting up out of the ground and I've seen my first magpie with a twig in its beak. In the pond that was covered in ice 10 days ago (page 3), swans and ducks are now paddling restlessly around. Spring is in the air! After autumn, this is my favourite season. A time of hope and expectations. So what can you, our valued reader, expect of this number? Well, all sorts of hopeful news! An upbeat report on how Wageningen scientists are developing vaccines against Rift Valley fever (page 12). How a PhD candidate finished his thesis - thanks to Covid! - in which he proves that locusts in Africa can be beaten without using chemical pesticides (page 20). How - in spite of Covid! - education is still more or less achieving its goals (page 5). How we'll soon be celebrating our 103rd anniversary (page 24). How students find politics worthwhile (page 22). This is not a desperate effort to keep our spirits up. The lockdown and the curfew are still with us. The virus nightmare is far from over. But I just don't feel like giving in to despair. And why should I? It's spring!

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Photo Guy Ackermans

Extra time for 148 PhD students

Last year, WUR offered financial support to 148 PhD students and 17 postdocs whose work was held up by the coronavirus measures. The university extended the contracts of PhD students on a fixed contract by an average of two months. Support was also available for PhD students on grants whose work suffered delays. There were two moments when PhD students and postdocs could apply for support: in the summer of 2020 for those whose contracts ended in 2020, and in

When assessing applications, the university took the researchers' home situations into account

the autumn for those whose contracts end in 2021. In the first round, the university extended 14 PhD and 7 postdoc contracts. In the second round, 71 PhD and 10 postdoc contracts were extended, all by an average of two months.

Home situation

The university also provided support for 63 PhD students on grants whose work was held up last year. 'As far as I know, we are the only university that has supported PhD students on grants,' says Janneke van Seters, head of the PhD Office at WUR. When assessing applications, the university took the researchers' home situations into account. There was three months' compensation for those who had to look after their children in spring 2020, when schools and nurseries were closed. In all the other cases, the nature of the delay was considered, and whether it was really caused by Covid-19 or by other factors. The university also looked at what steps the research group had taken to minimize or manage the delay. As

Covid compensation for students and young academics

Anyone who was a student during the past 'corona year' will get 50 per cent off their tuition fees next year. These students will also have the right to funding for longer and can use their public transport pass for a year longer.

And to offer them better psychological support, more student deans and counsellors are to be appointed.

Minister of Education Van Engelshoven announced the support package, which will cost over 8.5 billion euros, on 17 February. It also includes measures aimed at researchers and educational institutions. The cabinet is allocating 162 million euros to extending academics' contracts, and higher education institutions are to receive systematic compensation for their extremely high student numbers.

A step

WUR dean of education Arnold Bregt is pleased with the approved support package. 'It looks like a nice, coherent plan. The discount on tuition fees is important to students, of course. And they can extend their studies. In that case you need more supervision on the educational side too, and the plan includes measures to enable universities to arrange for that additional capacity.' Gijs Rotteveel, chair of the student union Student Alliance Wageningen, calls the

'It doesn't really solve the existing problems'

support package 'a step in the right direction' but he does have some criticisms as well. 'It doesn't really solve the existing problems. The minister looks at the average situation and at whether students are passing courses. That is too narrow a focus. The coronavirus crisis affects students' broad development.' LZ



Photo Shutterstock

'No Covid degrees at WUR'

All learning objectives will be achieved for all WUR degree programmes this academic year as long as the Covid measures don't disrupt the scheduled teaching and catch-up classes, according to a recent analysis of teaching quality.

Every single WUR degree programme was discussed in a marathon session with all the programme directors, the Board of Education and the boards of examiners. They looked at reports in

'Students are sometimes forced to carry out the work on their own, so they learn more this way'

which the programme directors scored their degree courses on whether the degree-related learning objectives are being achieved.

Dean of Education Arnold Bregt had expected the damage to be greater after one year of Covid education. 'Officially, the quality of the education in the degree programmes has not deteriorated. So WUR is not handing out substandard Covid degrees.'

Practical skills

But that is not the whole story, says Bregt. The degree-related learning objectives focus on knowledge. Less attention is paid to practical skills, yet the practical education in which students learn such skills is particularly difficult to replicate online. This is the second time the educational quality has been assessed in this way during the pandemic. The first assess-

ment showed that some degree pro-



Photo Anna den Hartog

grammes, such as Biotechnology and Molecular Life Sciences, had not fully achieved the degree-related learning objectives. Plans were then made to rectify this. Biotechnology programme director Sonja Isken: 'We managed to make up many of the missed practical skills classes. But we still need to catch up with some of the practicals in period 6.'

Lockdown

Whether those practicals will be able to go ahead depends on the Covid measures. Isken: 'The current lockdown means we now can't do what we had planned. If the measures are kept in place, there will come a point when we can no longer catch up with the missing skills in the degree programme.' On the other hand, the practicals that do go ahead often have more benefit now, says Isken. 'Students are sometimes forced to carry out the work on their own, so they learn more this way. Isken says the students are also better prepared because they want to make the most of the few hours they can

spend on campus.

'Whether it is difficult to achieve the learning objectives for a degree programme depends on how many practical skills there are in the programme,' says Plant Sciences programme director Anja Kuipers. Kuipers agrees with Bregt that students are not getting substandard Covid degrees. 'There might be the occasional missed objective, but basically we are doing pretty well'. MVDH & LZ

Read more on resource-online.nl.

Degree-related learning objectives are not the same as course-related learning objectives. Last October, the Executive Board gave lecturers permission to adapt the course learning objectives in order to keep the work pressure manageable. The learning objectives per degree — the attainment targets for getting your degree certificate — were not changed.

WUR student tiktoks about climate

Abbie Richards (24), a WUR Climate Studies Master's student, runs EcoTok, a popular TikTok account dedicated to climate change. (TikTok is a popular social media platform where members make creative videos of up to a minute long.) Three questions.

What is EcoTok?

'EcoTok is a TikTok account where our team places environmental videos. The team consists of people with different backgrounds: some are schoolchildren or students, others run a zero-waste business, and so on. What unites us is that we all care about the environment and want to inform other people about it. We now have almost 90,000 followers and over 1.2 million likes.'

What is your goal?

'We explain different environmental topics in short videos. Currently I'm

working on a video in which I explain carbon capture, but we also have videos about ethical investment, sustainable transportation, growing your own food, reducing consumerism, making soup from veggie scraps, and so on.'

How do you explain carbon capture in a one-minute video clip?

'The goal is not to explain absolutely everything about carbon capture to our viewers. We are here to plant a seed. Many people have never heard about carbon capture before. We introduce our viewers to the topic and give them a little bit of knowledge.'Lz

If you want to view some EcoTok videos, the online version of this article has links to Richards' favourite clips. See resource-online.nl.



WUR student Abbie Richards (own photo)

Extra funding to be used for internship supervision

If WUR gets extra Covid funding from the government, the Executive Board already has ideas about how to spend some of it. The board expects a new wave of students who still need to do an internship or thesis research after the coronavirus measures have been lifted.

Last week, the caretaker cabinet allocated 8.5 billion euros to the National Education Programme for support to students and researchers in catching up after delays caused by Covid. It is not yet clear how much of that money will go to the universities. But the WUR Executive Board is already thinking about how best to use a one-off injection of funding.

Rector Arthur Mol estimates that a

number of students have not been able to find a suitable internship or thesis project due to the Covid restrictions and have therefore postponed that component of their degree. Now that the students will receive a discount on their tuition fees for Covid-related delays, he expects a peak in the numbers of Wageningen students wanting to do their thesis or internship. WUR is currently studying the size of this group.

Welfare

'This kind of surge in internship and thesis students calls for additional educational support and supervision. That would be a good use of some of those extra millions for education,' says Mol. Meanwhile, the university is also trying to get a clear picture of which students 'A surge in internship and thesis students calls for extra educational support'

are experiencing mental health problems due to the Covid restrictions and working at home. 'Looking at the course evaluations and the pass rates, we don't see any difference from the figures before Covid, but we are hearing – often second-hand – that some students are finding it hard and are lonely. We are trying to find out about how those students are doing through the study advisors, study associations and student societies.' As

'Stop pushing up house prices'

Dutch student unions have launched a campaign in protest against soaring housing prices. The aim is to raise awareness of the current problems on the housing market amongst young people, academics, policymakers and politicians.

Steven Snijders of Student Alliance Wageningen (SAW) is the spokesperson for the campaign. He says house prices have tripled in the past 30 years. 'That is not OK. Houses are becoming unaffordable, especially for the younger generation. We are having to pay more and more for the same house.' The housing market needs a fundamental reset, says Snijders. In his view, solutions are too often sought in expanding the financing options, whereas precisely that is one of the main causes of price rises. 'More debt is not the solution.'

'Houses are becoming unaffordable, especially for the younger generation'

the market here is well-regulated. Idealis controls most of the market, and they may not get everything right but they are a good landlord. The Housing Desk publicizes private rentals on their website, but if

Snijders

thinks Wage-

ningen has

a relatively

for student

housing.

'Much of

good system

there is anything wrong with a room or the price is too high, it doesn't go online.' But the campaign is still relevant to Wageningen students, says Snijders. 'You can still usually find a student room to rent here, but when you need to buy a place later, prices will have gone up hugely everywhere. That makes it hard for young people to buy or rent a house or flat. If you're a student and you want to see any change in the future housing market, you've got to take action now'. Lz

Typical (old) Dutch **=** Chat while you swim



Illustration Henk van Ruitenbeek

My friends always told me the Dutch like talking, but I was not convinced until I went swimming. Dutch people even chat while they swim. What a good way to get exercise and communicate at the same time!

I learnt to swim in China, following a standard course, step by step. We have to wear a swimming cap, swimming goggles, and some people even need a nose clip. No entry without a swimming cap at most pools. Most people learn to swim as a hobby or for exercise, and some may aim for skill or speed as well. It's totally different for the Dutch people I have seen, who do not need swimming caps or goggles, as they always keep their heads above water. Two or more

'It would surely be much easier if we did not take swimming so seriously'

friends swim alongside each other, chatting and laughing. I always have a swim as a form of exercise,

set a target first and try to accomplish it, then go back with a strong sense of achievement, but usually feeling tired. I guess most Chinese are the same, and to relax we usually chat when we are having a rest. It would surely be much easier if we did not take swimming so seriously, but just saw it as a form of relaxation. How efficiently the Dutch swim, actually! Now I am learning to swim the 'Dutch way', and perhaps one day I too will be able to talk as I swim.

Do 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 7 July 2010 and was sent in by Wenling Liu, a PhD student in Environmental Policy.



A Little Wiser

Why do birds swarm?

ou must have seen them: those huge clouds of starlings in the sky around dusk. They seem to move as one in a complex dance. A spectacular show, but it is not put on for our benefit, of course. So why do they do it? And why don't they collide?

There are three main reasons why starlings and some other birds swarm together in huge flocks, says behavioural ecologist Sjouke Kingma. 'First of all, they are safer in a large group, and that applies to a lot of prey animals. Think schools of fish or wildebeest on the savanna.' While a large swarm catches the attention of birds of prey, it is not easy for them to select a victim from that swirling mass. 'Also, starlings look for a place to go to roost at dusk. The big swarm helps them all find a good place. It is how the birds communicate to tell each other where there is food or a good place to stop for the night. There are also birds that fly in groups to save energy - like geese that fly in formation. They are a bit like racing cyclists that cycle in each other's slipstream. But that's a bit different to swarming.'

How do they avoid colliding when thousands of them appear to dart in all directions like a whirlwind? 'Different studies have been done on that. Firstly, all the birds fly at the same speed, which for starlings is an average of 36 kilometres an hour. If you all go at the same speed, you don't collide so easily, except when you take a corner.' But the birds have a trick for that too. 'From a computer simulation it appears that each bird keeps an eye on a maximum of seven other birds near it. If one of those birds changes direction, the whole lot go with it. Other groups follow later so the movement ends up rippling through the whole flock, a bit like a stadium wave , although there you only watch what your immediate neighbour is doing. Research has also been done on budgerigars in a wind tunnel, to find out how they avoid collisions if they fly into each other head on. It seems that budgies always veer to the right if there is a risk of a crash. That's clear at least.' TL

It is safer in a large group, and that goes for many prey animals such as schools of fish or wildebeest on the savanna

Sjouke Kingma, behavioural ecologist

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



Special professor of Heritage Development

Elyze Storms-Smeets will hold the new chair for the development of cultural heritage.

This is the special chair for Cultural Heritage and Participatory Spatial Development. The chair is part of the Landscape Architecture and Spatial Planning chair group. Storms-Smeets will start as an associate professor and progress to the position of professor by special appointment.

An unusual aspect of the new chair is that it is linked to a particular municipality. The municipality of Westerveld (Havelte, Dwingeloo, Diever and Vledder) in Drenthe is the sponsor and will be the main field of work for the professor. Westerveld's heritage includes two national parks and the Frederiksoord and Wilhelminaoord Colonies of Benevolence.

Listed buildings

Dutch municipalities are facing big challenges. The climate is changing, villages are depopulating and a transition is needed to sustainable energy consumption and agriculture. These changes also affect the management and use of our cultural heritage. Storms-Smeets will work with stakeholders in 'living labs' on bringing about changes such as a reduction in the energy consumption of listed buildings. Finding new uses for listed buildings and the associated landscape is another topic she will be tackling. Storms-Smeets studied historical geography at Utrecht and Durham, and obtained a PhD at Leeds on the geography of Dutch country estates in the 19th century. Since 2007, she has worked as a senior heritage consultant at the Gelders Genootschap consultancy. As



Strong resistance to potato disease with GMO

British researchers have found a resistance gene for the potato disease Phytophthora. The downside: that potato is a genetically modified organism (GMO).

The usual resistance genes in potatoes work by recognizing what is known as the avirulence protein of Phytophthora. This recognition allows a rapid response: the plant kills the cells that have been attacked, which stops the disease from spreading further. But Phytophthora can make the avirulence genes mutate fast, so the potato is no longer able to recognize the attackers and trigger the response mechanism. Most of these resistance genes come from wild potato species in the Andes. British researchers have now found a new gene in Solanum america-

Development of this potato has stopped in the EU

num, a distant relative of the potato in the nightshade family. Potatoes with this gene are resistant to 19 variants of Phytophthora, according to the Wageningen scientists taking part in the study. 'The resistance gene in question recognizes what are termed the conserved avirulence genes of the potato disease. We think Phytophthora won't be able to change these so quickly,' says WUR researcher Vivianne Vleeshouwers. 'That means this resistance can be effective more broadly against Phytophthora.'

GMO

The distant relative is not affected by Phytophthora and is seen as a 'non-host'. That is why this resistance gene is expected to keep the potato disease at bay for much longer. Such lasting resistance could reduce the need for chemical pesticides in potato cultivation. However, there is one problem: the potatoes with this gene are GMOs. The resistance gene from the distant cousin can only be introduced into potatoes through transgenesis. That is why the development of such potatoes has come to a stop in the EU but can continue in other countries, including the US and possibly the UK too after Brexit. As

Sustainable route to ingredients from pulses

PhD candidate Qinhui Xing developed sustainable processes for producing protein-rich food ingredients from pulses.

Previous research suggested that the most sustainable method to make protein-enriched flour from pulses is a process called dry fractionation. The dry process requires about four megajoules (MJ) in energy per kilo of protein, while the traditional method using water requires about 60 MJ. Xing therefore chose to use dry fractionation in her experiments with soya beans, peas, lentils and chickpeas.

The protein-rich mixtures she produced this way are less pure but are still nutritious and can have be used in the same ways, such as to bind water. We need sustainable plant-based proteins to feed the fast-growing world population. After milling the pulses and in some cases, such as soya, extracting oil from them, Xing used two methods to increase the protein content. She used 'air classification' to separate the lighter starch from the heavier proteins. Then she used electrostatic separation to extract the fibre from the proteins. In this method, particles are electrically charged and can then be separated using a positive and negative electrode.

Less flatulence

Dry fractionation does have a drawback though, says Xing. 'Because we do not use water, the anti-nutritional factors are not removed,' she says, referring to certain carbohydrates such as raffinose and stachyose. These substances are broken down in the human intestinal tract by bacteria, releasing gas that causes flatulence.



Qinhui Xing graduated with a PhD on 9 February. Her supervisors were Professor Remko Boom and Maarten Schutyser of Food Process Engineering.

'So we added a fermentation stage to break down those anti-nutritional factors.'

This 'solid-state fermentation' was applied to protein-rich chickpea flour, and with success. During spontaneous fermentation with lactic acid bacteria naturally found in the flour, the raffinose and stachyose content was reduced by 88 and 99 per cent respectively. These bacteria break down sugars. Moreover, the sourdough starter obtained can be used to enrich bread with proteins, Xing found from her baking experiments. She expects this new substance to also be a valuable ingredient in meat substitutes. Het supervisor, Maarten Schutyser of Food Process Engineering, aims to conduct further studies on fermentation as a way of improving the nutritional value and flavour of plantbased protein ingredients.

'It is also important to find out what the application potential is of the other fractions that come out of dry fractionation, such as the carbohydrate-rich

'I see a bright future for these products.'

fraction,' says Xing. Another PhD student is working on this topic. Xing herself has found a job as a scientist for a Chinese producer of plant-based meat substitutes. 'I see a bright future for these products.' AJ

COLUMN

Successful species of scientist

The engine cuts off. Only the sound of a high wind whistles on. With nothing to propel our little speedboat along, we're at the mercy of frighteningly tall waves. The engine jumps to life. And dies again. This endless cycle of despair and relief continues, until we eventually reach our destination. This was my first lesson in redundancy: to be on the safe side, always take along two of any crucial component – in this case, two outboard motors. Nature has its spare motors too. Functional redundancy, it's called. Two or more species that do roughly the same thing can make an ecosystem more resilient. For exam-

'Let us broaden our definition of a successful scientist'

ple, different species of coral build the structure of the reef by depositing calcium

carbonate. If one of the species happens to disappear, because it's a bit more vulnerable to change, the system can still go on functioning. That is a reassuring idea. It makes biodiversity a kind of insurance against the collapse of an ecosystem. In economic terms, you can see it as a type of risk diversification, where per sector you invest in several different companies. However, don't let those overlapping ecological



Lisa Becking

roles tempt you into thinking: oh well, just let that species go. Our understanding of how everything works is generally not profound enough to make that call. For now, the safest strategy is to cherish a great diversity of species. Even such bizarre species as the dancing pom-pom crab . 'Too weird to live, too rare to die,' as the writer Hunter S. Thompson puts it.

Within the academic ecosystem, we tend to be highly dependent on one species of successful scientist. A competitive one that gets big grants and publishes a lot. This approach allows for too little diversity of talent. In 2019, all universities and research funding bodies in the Netherlands took a clear joint position in a publication called Room for everyone's talent, which calls for a new approach to recognizing and rewarding the various roles that are necessary for a smoothly functioning university. Dutch universities are now working on interpreting and operationalizing the idea. Let us broaden our definition of a successful scientist so that more people answer to the description. That would do no harm to our quality. In fact, it would increase our diversity as scientists. So the university can sail ahead, even in stormy weather.

Lisa Becking is an assistant professor at the Marine Animal Ecology Group, a researcher at Wageningen Marine Research and a board member of the national Young Academy, partly under the auspices of the Royal Netherlands Academy of Arts & Sciences. She has an eye for art above and below sea level.

How to develop a Rift Valley fever vaccine

A FRIDAY AFTERNOON VACCINE

Virologist Jeroen Kortekaas and his team at Wageningen Bioveterinary Research in Lelystad have developed vaccines against the dangerous Rift Valley fever virus. One for animals and one for humans.



he world is in the grip of Covid-19. But coronaviruses are not the only viral threats to humans and animals. The African Rift Valley fever virus is another pathogen that should be prioritized for vaccine development, according to the WHO. So far, Rift Valley fever has rarely struck outside Africa, where it mainly affects sheep. But it can affect humans too. Extraordinary professor of Virology Jeroen Kortekaas and his team have suc-



Jeroen Kortekaas extraordinary professor

ceeded in developing both human and veterinary vaccines against the disease. That is to say: the vaccines exist, and ahead lies the long road towards getting them registered and onto the market. 'We've got the vaccines and it is almost certain that a fund will be set up,' says Kortekaas. 'There are no further obstacles as far as effectiveness and safety are concerned.' These are crucial factors. 'When you make a vaccine you always seek a balance between safety and effectiveness,' explains Kortekaas. 'In general, it is roughly the case that the safer the vaccine is, the less effective it is. Our vaccine is a live attenuated virus. It grows well but has no pathogenic capacity. Once injected, it infects cells and initiates an immune response that is very close to the natural immune response. It sets various alarm bells off in the cell.' It sounds risky to use a live virus as a vaccine. 'The Rift Valley fever vaccine is potentially dangerous,' acknowledges Kortekaas. 'If you want to create a live attenuated virus to use as a vaccine, you

must do so very precisely, and you need to know a lot about the virus's Achilles' heel. They would probably never do it for Ebola, because people find that disease much too scary. But we know exactly how to weaken the virus and it has been tested in a lot of different animal models. It is safe.'

Friday afternoon experiment

When CEPI (see inset) put out a call two years ago for proposals for the development of a human vaccine against Rift Valley fever, Kortekaas and his team opted for the approach using a live attenuated virus. Kortekaas: 'The obvious choice for a human vaccine is actually a "subunit vaccine", which is based on a specific protein from the virus that provokes an immune response. But those vaccines are expensive to make and don't work for very long. A live virus stimulates a much broader immune response. Also, we



The high-security research lab of Wageningen Bioveterinary Research (WBVR) in Lelystad. Photo Maarten Spoek

already had a lot of data about the veterinary vaccine at that time. So we knew that a safe live attenuated vaccine would be possible for humans too.' Kortekaas formed a consortium of companies and institutions, including the WUR spinoff BunyaVax, where he is research director. The group won the contract and was allocated 12.5 million dollars to develop the vaccine.

Funnily enough, the vaccine they ended up with came out of a 'Friday afternoon experiment' by Kortekaas's colleague Paul Wichgers Schreur. Researchers use this term for experiments they do pretty much for the fun of it in a spare couple of hours. 'Purely out of curiosity to see what happens,' says Kortekaas. Some years ago now, the researcher cut 'THE YET-TO-BE UNIDENTIFIED DISEASE X INTRIGUES ME – WHICH VIRUS WILL BE NEXT?'

one of the three segments of the virus genome in two. The virus survived this procedure remarkably well, although its growth was slowed down somewhat. A test on mice followed to see whether the virus was still pathogenic. 'Nothing at all happened, except that they developed a good immune response.'

And that is how, technically, a vaccine was born. The edited virus proved no longer to be pathogenic because it now had a kind of packaging problem. The virus genome normally consists of three segments. Kortekaas: 'Once one of them

LARISSA project

The search for a human Rift Valley fever vaccine is financed by the Coalition for Epidemic Preparedness Innovations (CEPI), established in 2017. CEPI wants to develop vaccines that the pharmaceutical industry is not interested in because they do not have enough commercial potential. This initiative receives both public funding from governments and private funding from organizations including the Bill & Melinda Gates Foundation. Rift Valley fever is just one of CEPI's targets. The LARISSA project, which Kortekaas heads, is working on the human vaccine against Rift Valley fever.

Rift Valley

Rift Valley fever is named after the region of Kenya where the first outbreak struck sheep in 1931. The disease spread across Africa from the Rift Valley. Sheep are the most susceptible to the disease. Newborn lambs do not survive an infection, and 30 per cent of adult sheep are killed by one. The disease almost always leads to abortion in pregnant ewes. Humans can catch it via infected meat or mosquitoes. The death rate among infected humans is one to three per cent. Rift Valley fever has not reached Europe yet, but tests have shown that mosguitoes that are found here can transmit the disease.

is split, the virus has to package not three but four segments to form a complete virus particle. And that costs energy and takes more time than packaging three segments. That delay gives the host cell's immune system enough time to slow down replication and thus prevent disease from developing.' In order to weaken the virus further, the code was cut out of another segment of the genome for a protein that inhibits the host's interferon. Interferon ensures that the host cell makes various proteins with antiviral effects. By deactivating interferon, intact viruses disarm the host. The adapted virus lacks that possibility and cannot therefore fight back against the host's immune response.

More exciting

The approach to creating a vaccine against Rift Valley fever is the same for humans and animals, says Kortekaas. 'The difference lies in the virus strain we use. And in the end, the formulation – the way the manufacture produces it – is different too. But the technology is identical. For two reasons, it's a nice example of One Health. We are using technology from veterinary science to develop a human vaccine. And by protecting animals, you protect people too in the end.'

Kortekaas and his group previously developed a vaccine against swine fever. But to him, human vaccines are more exciting. 'I'm more interested in viruses that infect humans because their impact is far bigger. However important swine fever may be, its impact is not like that of Rift Valley fever. If I want to grab everyone's attention in a lecture, I have to start talking about a disease that's dangerous for humans.' His passion is for viruses that can suddenly turn up somewhere. 'The yet-to-be identified Disease X intrigues me – which virus will be next?

'SLOWING DOWN THE VIRUS PREVENTS DISEASE DEVELOPING'

Why does it make people and animals sick? Zika virus and West Nile virus had hardly been studied at all until they caused the first major outbreaks. West Nile virus has now arrived in the Netherlands. I am very curious to see how that will play out.'

Meanwhile, he has enough work on his hands with the vaccines against Rift Valley fever. The veterinary vaccine is currently being produced by the pharmaceutical industry and prepared for registration. The first clinical trial of the human vaccine is expected to take place at the end of this year in Belgium. Kortekaas: 'Phase two will take place after that in Kenya, where the virus is circulating. To some extent, you have to start all over again there, because the African population may have a slightly different immunological response to Europeans. Then comes a large-scale phase three trial, to demonstrate the positive impact of vaccination in regions affected by the virus. It is not yet entirely clear how we are going to do that. It's not easy to set up that kind of trial, since outbreaks of Rift Valley fever cannot be predicted.' In view of all this, it will take at least three years before the vaccine is on the market.

THE MOMENT

Putting up with insecurity

'Some people have an extensive career plan, but I was never that type. I take things one step at a time. And so last year I found myself facing a difficult choice. I was working as a postdoc in plant cell biology in England. When my two-year contract ended, my boss offered me a three-year extension. It was a hard choice to make, with lots of different factors at play. But they added up to a two-way choice: take the job or change course. Stay in England or go back to the Netherlands. In England I had nice colleagues, a social network and I felt at home. And the institute where I was working is one of the best laboratories for plant sciences. The perfect place to pursue my career. Plus, I didn't have any other offers.

On the other hand, my research there wasn't going so well. In the first six months, the experiments failed, causing me to



Turning points: sometimes you spot them immediately and sometimes only in retrospect. In this series, members of the WUR community describe a decisive moment they will never forget. This time, Jeroen de Keijzer talks about the moment he decided to return to Wageningen.

doubt my own capabilities. It turned out later that there was something wrong with the experiments I was basing my research on. That got me off to a bad start. Who could tell what problems I would run up against if I stayed?

Also, my girlfriend lived in the Netherlands and I still had an apartment in Wageningen. Although my girlfriend and

'I moved back, with no job and no security'

I saw each other regularly, the distance took its toll. It was getting harder to maintain a long-distance relationship. After my two

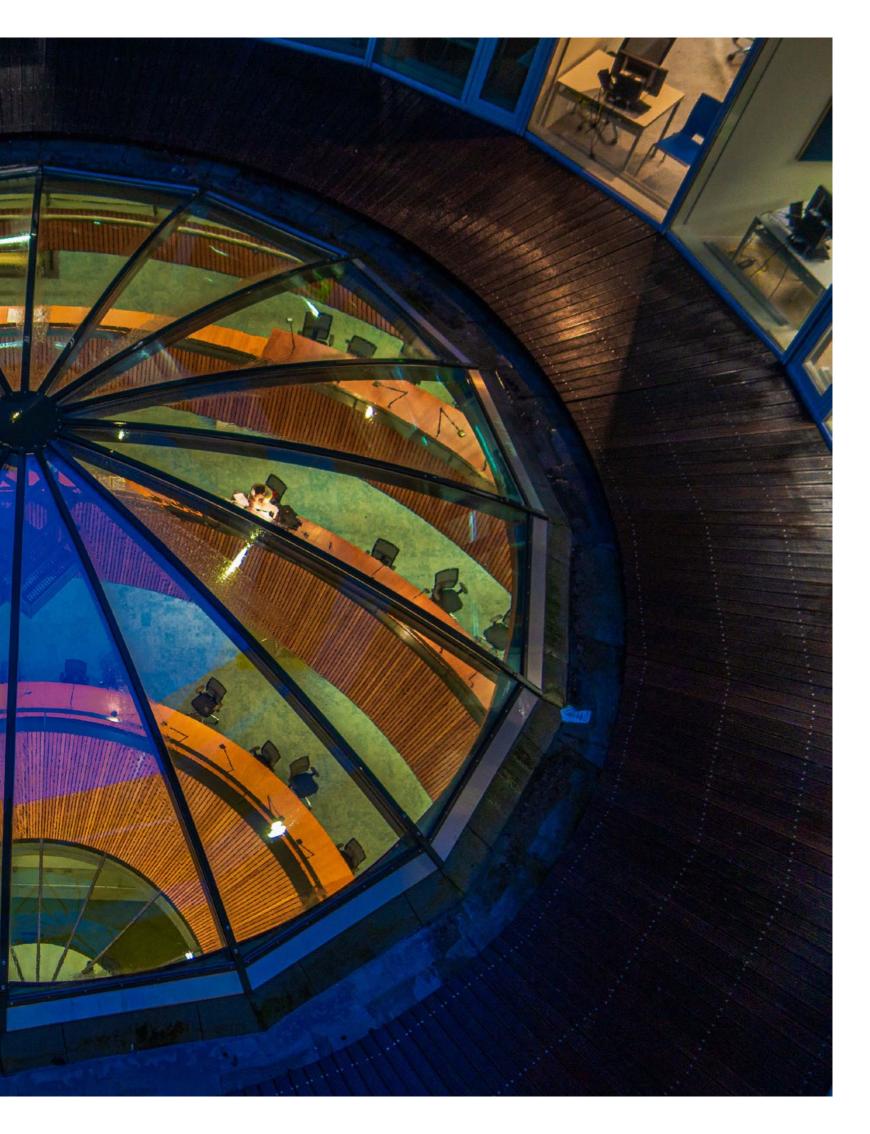
years in England I would describe our relationship as 'complicated'. So I took the plunge and moved back to the Netherlands to work on my relationship. With no job and no security.

Sadly, the relationship broke up shortly after I came back. I still didn't have a new job and I felt drained. I wished I hadn't left England then. But I've never really regretted the decision. Now I am teaching Cell Biology at WUR, and I turned down another job to do that. It seems it pays to put up with a bit of insecurity sometimes and not take the first option you get.' NVTWH

HUNTING LIGHT

ICT worker António Valente has been working at WUR since 2002, and on campus since 2009. Alongside this job, he is also a photographer. Valente is always 'hunting light', on the lookout for beautiful light conditions and interesting shapes to capture on camera. His campus photos have now been published in the book *Light on Campus*. The proceeds from the book will go to the Anne van den Ban Fund, which gives students from developing countries the chance to study at Wageningen. Valente: 'The campus is beautiful and always full of life. I never get bored with it. With the selection of photos in this book, I hope to show the beauty in everyday life, and to let people see the campus in a new light.' LZ





Food without slavery

Everyday products such as coffee, chocolate, sugar, and even fish and fruit leave a bad taste behind because of the likelihood that people have been exploited to produce them. Birgit de Vos studies human rights abuses in the food supply chain. She developed a tool for identifying risks and abuses. Text Marianne Wilschut Photo Harmen de Jong

hild labour, discrimination and exploitation are all in a day's work for Wageningen Economic Research scientist Birgit de Vos. As a social scientist, she studies labour conditions in the food supply chain in low-wage countries. She also represents WUR in The Sustainability Consortium, a global partnership on sustainability in the food supply chain between companies such as Unilever, Walmart, NGOs and universities. One of her recent achievements is Wageningen Humanity Views.

I gather there's a lot of injustice on our plates. What goes wrong?

'Many of the products we consume daily, such as coffee, chocolate, nuts, spices, sugar, palm oil and rice, come from countries where there is a strong risk of the production involving child labour, or where matters such as safety, working hours and union rights are not regulated or well adhered to. And forced labour – modern slavery – is common too. According to the United Nations' International Labour Organization, more than 16 million people are victims of forced labour.'

Where are these problems concentrated? 'They are everywhere, from Africa and Asia to Latin America, and in south-eastern Europe as well. However, there are differences between countries and sectors. There is a lot of child labour in the cocoa sector, for instance. In Ghana, 55 per cent of the small-scale cocoa farmers have to make use of their children's labour. Most of those children work with pesticides, and dangerous tools without any protective clothing. Agriculture is one of the sectors where the risk of exploitation is greatest.'

Why do these abuses mainly occur in agriculture?

'Agriculture is an informal sector, and a lot of children work on their parents' land. It is also a labour-intensive sector with is a lot of seasonal labour, for which temporary workers, often internal and foreign migrants, are hired without a contract. They work long hours under dangerous conditions.'

And yet there are all sorts of fair-trade labels. Don't they help?

'To meet the label's standards, farmers must invest, and those investments are often too high for them. They get into debt or fail to meet the criteria. Monitoring is often lacking. Another point is that even with the certificate, companies often pay hardly any more for the product. A certificate might give you a purchase guarantee for the future, but if you need food on your plate tomorrow, you will benefit more from a higher price, access to supportive credit conditions, and health insurance. There are companies that are prepared to pay the farmers a premium themselves. One example is Tony Chocolonely. On the whole, smaller companies with a shorter supply chain and a single product, such as chocolate or bananas, are more willing to pay extra. Where there are many different products and middlemen involved, a higher price is not often on the table because of the competitive market in which they operate. Sadly, I still see a lot of gesture politics there, and yet those companies could have a big impact. They join a round table or sign an agreement and carry out a few pilot projects, but it's a drop in the ocean. For example, Unilever recently made a statement about a living wage for their direct suppliers. Good as far as it goes, but what is really essential is that all the indirect suppliers are included, because they are usually the poorest and most vulnerable, such as small-scale farmers



and agricultural labourers. Reducing the risk of modern slavery in the supply chain starts with knowing who all the suppliers are, including the subcontractors.

Does your tool make a supply chain more transparent?

'Absolutely. Wageningen Humanity Views that my colleagues at Wageningen Economic Research (WECR) and I have developed is an interactive world map on which users can click on countries and products. It is a risk analysis for companies. We give a human rights score per country and per sector. We also distinguish between regions. In Brazil, India and Mexico, for example, there are big differences between regions in terms of decent labour conditions. Once a company knows where the big risks lie, it can set up targeted programmes to reduce them. Or it might decide to change its sourcing policy. This tool makes it easier to set priorities.'

Have companies shown any interest yet? 'The scan was developed for Olam, a major player in the cultivation, trading and processing of agricultural products. But it could be used more broadly by companies, governments and NGOs, in fact by anyone who purchases coffee, cocoa, sugar, nuts, rubber, rice, cotton, dairy produce, chicken, timber and palm oil.' 'Once you know where the big risks lie, you it can set up targeted programmes to reduce them'

So this problem arises mainly in the agriculture and food sector, supremely Wageningen themes. Does Wageningen pay enough attention to human rights? 'There is some action, but still not very much. I'm in a WUR-wide working group, which includes colleagues from Facilities and Services, looking at how we can make sure that WUR does not itself make use of modern slavery. Examples are the sourcing of fair-trade lab coats, electronics and food. That is the least we can do. Wageningen claims to stand for sustainability, but that is expressed primarily in research on boosting production efficiency, responsible pesticide use, and combatting deforestation and food waste. There is not much attention to labour conditions, whereas human rights are surely very important if you're talking about sustainability in agriculture.'

LET BIRDS DO THE JOB

Destroying locusts with chemicals is often unnecessary. Harmonious cooperation between birds and fungi works just as well, says PhD student Wim Mullié. And it is certainly better for the environment.

on't kill your allies is the telling title of the thesis with which the 68-year-old toxicologist Wim Mullié graduates with a PhD this week. The title says it all, really. This thesis is the end product of the longest-running doctoral research project in the history of the university. The first article in the thesis was published in 1993.

If it wasn't for the coronavirus, it might have taken even longer for him to get his PhD, says Mullié, speaking from his home in Dakar, Senegal. Being in lockdown at home enabled him to find time to finish writing at last, with the encouragement of his supervisor Tinka Murk, professor of Marine Animal Ecology (and a toxicologist too). 'I definitely want that mentioned. Over the past 20 years, she has given me tremendous encouragement to write this thesis.'

The crux of Mullié's message is clear. Birds are indispensable assistants in the battle against locusts. Chemical pest control affects birds too. So don't use it. 'The idea of my thesis is to bring the role of birds back into the picture,' says Mullié. 'Birds have always been our natural allies in the battle against locusts. Birds eat locusts. Which was why birds were revered in several ancient cultures, such as the Egyptians with the ibis. But we forgot about birds after World War II when the use of chemical pesticides took off.'

Fungus

Mullié saw that a different approach was possible when he got involved in research on the effect of the organic pesticide Green Muscle. This preparation, developed in the late 1990s, owes its effectiveness to its spreading of the fungus Metarizhium acridum, which is deadly to locusts. 'During that study we saw that birds very actively ate locusts that had been sprayed with this. And the birds – storks, Montagu's harriers and falcons – were not harmed in the least. In fact, bird numbers grew and subsequently, the birds kept locust numbers below the threshold for economic damage. When chemical pest control is used, we see the opposite happen. Birds sometimes die in large numbers or they migrate elsewhere for lack of food. That is because the chemicals are not selective, and they kill other insects as well. What is more, once the chemicals had done their work, the locusts returned, but the birds stayed away.' Mullié discovered another phenomenon too: that birds mainly eat the largest locusts. In the case of desert locusts, these are the females. 'It is a question



of energy. If you take the biggest, you don't have to work as hard for every unit of energy you absorb,' explains Mullié. That makes the birds twice as effective for combatting locusts. 'Because they are larger, the females eat more. So it saves vegetation if the females get eaten. Plus, you hamper reproduction this way.'

There is another reason, too, why the combination of Green Muscle and birds is a success. Infected insects are easier to catch. That is because of their changed behaviour, explains Mullié. 'A locust that feels that it is sick raises its body temperature by sitting in the full sun high up in the vegetation, a phenomenon known as 'behavioural fever'. Through its behaviour, the insect generates a kind of artificial fever. The fungus grows optimally between 27 and 38 degrees Celsius. When the temperature goes up beyond 38 degrees, growth slows down. The locust makes smart use of this, but there is one disadvantage: in the full sun, locusts are more visible to birds.'

Politics

The big advantage of organic pest control is obvious: it spares the environment. And, according to Mullié, it is no more expensive than chemical pest control. But in the face of a real plague, he does think you need chemicals. 'I think their main role is in prevention, in the phase before locusts start swarming, and before they undergo a metamorphosis from solitary to group animals. If that metamorphosis takes place undisrupted, it gets harder and harder to do anything about them. Sadly, it has become more and more difficult to take preventive action because of the security situation in the Sahel countries and countries like Yemen.'

For this reason, Mullié sees locust plagues as a primarily political problem. 'In general, people wait far too long before taking action. Until it is too late. Then you get a panic reaction and people reach for the pesticide sprayers, because politicians want to see locusts dropping dead out of the sky. Without changing that mentality, without using organic pest control, and above all, without actively combatting land degradation to bring back the birds and reduce the locusts' habitat, there is a risk that the next major plague is just a repetition of the last one.'■

'Politicians want to see locusts dropping dead out of the sky'

> Birds eat mainly the largest locusts, the females. That is good for pest control in two ways. 'Because they are larger, the females eat more. So it saves vegetation if the females get eaten. And you hamper reproduction.' Photo Wim Mullié

'OUR VOTES COUNT!'

WUR students Tessa Tangelder and Joost Gerretschen are members of the youth branches of the political parties D66 and GroenLinks respectively. As the elections of 17 March draw closer, they want to persuade as many young people as they can to vote.

erretschen (24) is a Master's student of Environmental Sciences and chair of the Gelderland branch of DWARS, the youth wing of the green party GroenLinks. He first joined the party four years ago in Zeeland. 'As part of my Bachelor's in Liberal Arts and Sciences in Middelburg, I studied Political Science. I still remember how we were discussing the climate crisis in one of the classes. When you read something like the IPCC report, you think: shit, we're in serious trouble. But I didn't see that sense of urgency in the municipal or provincial councils. So when I saw a GroenLinks advert and their Facebook page one lunchbreak, I signed up straightaway.' Tangelder (24) is a Master's student of Animal Sciences and publicity officer for the Wageningen branch of the Young Democrats (JD), D66's youth wing. She joined four years ago too. 'I was looking for a course on public speaking, and I came across a masterclass on it run by JD Amsterdam. I couldn't attend in the end, but it looked interesting so I went to a JD introductory event where you can get to know the organization. After taking part in courses and activities off and on for a few years, I joined the board at JD Wageningen last year.'

Political education

'A political youth organization is a place to meet other people from your area who are involved in politics,' explains Gerretschen. 'If you are young and interested in politics, it's a good place for expanding that interest. The way people talk and think in political circles doesn't



Text Luuk Zegers

always seem very accessible. In a political youth organization, you get a low-stakes opportunity to learn to operate in that world.'

'It's an education in its way,' adds Tangelder. 'You don't start engaging in high-level politics straightaway, but you do learn how you can get things done. It starts small: first you raise an issue in your local JD branch. The JD can then achieve something within D66, perhaps by collecting signatures and handing them to D66 MPs.' But you don't necessarily have to have political ambitions to be in the JD, says Tangelder. 'There are also members who don't have political ambitions but do want to do something for the community.'

Weekly drinks

Apart from getting things done, political youth organizations are also social networks. Tangelder: 'Normally, we members of JD Wageningen had a face-to-face activity nearly every week. Because of Covid we don't have as many activities at the moment, and everything is online. That has its pros and cons. One plus is that speakers who wouldn't normally come to Wageningen can join us online. But one of the down sides is that students who study online all day don't feel much like more online activities in the evening.' 'Before Covid, there was a DWARS activity every week in a town in Gelderland,' says Gerretschen. 'Those activities often combined a training course or a speaker with a drinks party. One week you went to Nijmegen, the next to Arnhem, Apeldoorn or Wageningen. It isn't as nice online: you want to be able to look each other in the eye and shake hands.'

Talking to MPs

For Gerretschen, the high point for DWARS Gelderland was last September. 'There were 200 of us at the market in Arnhem, there to draw attention to the situation in Moria refugee camp.'

'For me the high points of the past year were discussions with councillors and MPs,' says Tangelder. 'Like talking to Tjeerd de Groot, an MP for D66, about agricultural policy and the nitrogen crisis. You can ask whatever you want, and you get real answers, so you can get a picture of all that goes on behind the scenes – the things that don't get said in public.'

Campaigning in Covid times

Both students hope that the Covid situation will have improved by the election date, so that they can campaign on the streets. Gerretschen: 'We usually stand at

'YOU LEARN HOW YOU CAN GET THINGS DONE'

'THERE WERE 200 OF US AT THE MARKET IN ARNHEM'

stations and campaign door-to-door. This year we are trying to be more visible online, with videos by local politicians, for instance. Whether online or offline, we hope to persuade young people to vote.' Tangelder: 'Our emphasis is more on getting young people to vote than on who they vote for. We want young people to be well-informed and to vote for the party and the candidate that is the best match with their views.' Gerretschen: 'Young people are usually more progressive than older people, but fewer of them vote. It is our aim to make them aware that their votes count.'

How do you decide who to vote for? Who are Tangelder and Gerretschen going to vote for themselves? Read their voting advice on www.resource-online.nl.



Joost Gerretschen (DWARS, part of GroenLinks) and Tessa Tangelder (JD, part of D66). Photo Guy Ackermans (If you are a WUR student and member of another political party's youth branch, we'd like to hear your views on this article on resource-online.nl)

Learning from Covid-19

'We must invest more in prevention and safety'

How can we be better prepared for the next pandemic? This question will be the focus of WUR's *Dies Natalis* (Founders Day) on 9 March. Guest speaker Henk Bekedam, who worked for the WHO for nearly 24 years, will offer an analysis. 'Covid-19 exposes all the weaknesses in the healthcare system.'

haven't got involved in discussions about whether the schools should open or stay closed, or whether the curfew is a good idea,' says Henk Bekedam. 'I look at the coronavirus epidemic at a more systemic level. In my opinion, Covid-19 exposes the weaknesses of the healthcare system. We can and must learn from that.'

Henk Bekedam worked for the World Health Organization (WHO) for nearly 24 years. As WHO Representative, it was his job to advise on the SARS epidemic in China and the coronavirus crisis in India. He returned to the Netherlands last summer in the middle of the pandemic. He has since been appointed chair of the expert group that will advise the ministries of Health and Agriculture on how the Dutch healthcare system can be better geared up for coping with zoonoses. Wim van de Poel of WUR is in the expert group too. 'The Netherlands has an excellent healthcare system when it comes to hospitals and GPs,' says Bekedam. Market forces have made the system very efficient as well, but that also means it lacks the buffer with extra beds and staff that you need to cope with the initial impact of a pandemic. Bekedam also saw that the municipal health services (GGDs), whose budgets have been repeatedly cut over many years, lack the capacity to cope with the workload and additional tasks that fall to them during a pandemic. These include testing, contact tracing and vaccination campaigns.

'The Netherlands spends a lot of money on healthcare, about 100 billion euros a year, but very little on prevention and safety – only about 200 million euros. The market doesn't work on prevention and safety; the government must invest more in that itself.'

What can Wageningen contribute?

'For prevention, I see an important role for Wageningen in terms of zoonoses, the viruses that can jump from animals to humans. Intensive livestock farming creates certain risks for the emergence and



Text Albert Sikkema

transmission of such diseases. You need to do research on that, and on the impact of climate change, through which diseases can be spread more easily by mosquitoes. The Netherlands has a good system for surveillance of animal diseases. The development of avian flu, for instance, is monitored well and proactively, but there is no compulsory reporting on swine flu. Pigs generally don't get sick from the flu, but pigs are genetically close to humans and some influenza viruses are easily transmitted from pigs to humans. So it is best to tackle the disease among the

'We must do more research on the effects of urbanization and deforestation'

animals, which in this case means developing a flu vaccine for pigs.

'We should also do more research on the effects on disease development of urbanization and deforestation, which bring wild animals in contact with humans more. Of course we need strict controls on the wet markets where live wild animals are sold. I read that the trade in wildlife has grown five times bigger over the past 10 years. In that case you can be sure that trade is going through Schiphol airport and the port of Rotterdam too. We need to identify and curtail those risks.'

Are there other preventive measures we can take? 'I'm thinking of antibiotics as well. The misuse of antibiotics leads to resistant bacteria in the healthcare system. The use of antibiotics in livestock farming in the Netherlands has gone down by 70 per cent in the past 10 years without any economic damage to the sector. A nice example of Dutch preventive policy, but there is still a challenge there, because antibiotic use is still too high.'

Have we learned things from Covid-19?

'Yes, this pandemic has exposed all the weaknesses of the system, both in the Netherlands and in the rest of the world. One of the challenges is that the virus also spreads via people who are asymptomatic. On the other hand, the lessons we are now learning from Covid-19 are similar to the lessons from other outbreaks. During the SARS epidemic of 2003, we learned that you must act fast when a new disease appears, and that preventing illness with testing and contact tracing is a very important part of combatting it. The countries in Asia that were affected by that epidemic, such as China, Taiwan, Thailand and South Korea, invested in labs and a better early warning and information system. That has paid off now with Covid-19. These countries identified the disease in time, took action fast and there-fore prevented a large-scale outbreak.'

What is the weakest link, do you think?

"The pandemic shows that countries need to invest more in prevention and safety, including early warning systems. At the same time, we need a global approach to this global threat, and we should help the weaker countries. In the end we are only as strong as the weakest link." ■

Dies Natalis

Pandemic Prevention, Prediction and Preparedness. A round table discussion with Henk Bekedam, Marion Koopmans, Wim van der Poel and Emely de Vet. 9 March 2021 from 16:00 to 17:00, online via www.wur.nl/dies



'Market forces have made our healthcare system very efficient, but have stripped it of the buffer with extra beds and staff that you need to cope with the initial impact of a pandemic.' Photo ANP/ Robin Utrecht

Five books for the curfew



The curfew is tough, and we're going to have to put up with it for a while yet. Are you Netflixed out, sick of your housemates, and buff enough from all the home workouts? A tip from *Resource*: read a book! Which one? We've selected five top Wageningen titles for you. You might need to learn Dutch to read most of them. Another nice curfew project, perhaps.

True Wageningen stories

Thirty-five true stories, varying from the mildly sad to the definitely scary and the absolutely hilarious. All these stories have been told previously at one of the Wageningen Storytelling Nights. Those events haven't been happening for the past year, so organizers Emma Holmes and Sarah Haines decided to anthologize the best

stories. They make us laugh and cry about a marriage proposal at Ede-Wageningen station, with a second-hand ring, or relive a hellish bike ride across the Veluwe in gale force 8. And hopefully, the Storytelling Nights organizers will raise some funds so they can start up the live evenings again in future. All the storytellers have lived in Wageningen at some point, or still do. You might even know them, or perhaps you feature in one of the stories... CJ

Snapshots - Anthology of true stories



An illustrated history of everything

If you prefer your text illustrated with pictures, get hold of a copy of *Hoe alles begon* (How everything started). In this picture book, the history of all life on earth is explained in very clear and simple language. It is a children's book really, but after a day of online studying, your brain deserves a rest. You jump from

atoms to bacteria, from reptiles to dinosaurs, eventually arriving at humans. Along the way you get explanations of the Big Bang, evolution, and the different methods of reproduction. The illustrations are detailed and gorgeous. A nice little snack before going to sleep, and a super-educational book to read to your niece when she comes for a visit. A team of scientists checked all the facts in the book, among them biologist/philosopher of science Gerard Jagers op Akkerhuis, who developed the operator theory – a way of explaining the emergence of complex life forms. cJ

Hoe alles begon - Bouwine Bergsma, Illustration Adriaan Bijloo



Popular animals

Have you spotted a badger or a beaver on one of your lockdown walks? You probably owe that to the actions

of nature conservationists. Dozens of animal species have been reintroduced in the Netherlands, and most of them have gone almost unnoticed. Animals are also regularly added to existing populations that are shrinking too much. How are the animals relocated, and how do you keep track of how they fare in their new habitat? Who decides which animal is chosen for immigration to the Netherlands? In Gewilde dieren, ecologists, nature conservationists and others describe these projects relocating animals ranging from the bison to the scarce large blue butterfly. Needless to say, the book would never have come into existence without the contributions of several Wageningen scholars, who not only share their knowledge of ecology but are also closely involved in the monitoring of the relocated animals. CJ





Questioning nature policy

Is a virtual reality trip through a forest in Surinam an experience of nature? This thought-provoking question is posed by Jelle Behagel and Esther Turnhout in the collection of essays *Natuurbeleid Betwist* (Questioning nature policy). The collection, put together by Arjen Buijs and Froukje Boonstra,

focuses on the support for the Dutch government's nature policy. It's readable but not an easy read. Support for nature conservation is under pressure. In 13 essays, experts from WUR and elsewhere examine the legitimacy of nature policy, looking at the support, assistance and acceptance it attracts. Behagel and Turnhout argue for a new perspective on nature and how we experience it. Nature and culture are inextricable, they say. Mixed form of the two can create experiences of nature: water meadows, back gardens, and even – why not? – a virtual walk through a tropical forest. Nature managers should be open to a 'new nature narrative' based on changed norms and values in relation to the importance of nature and how to deal with it. BK

Natuurbeleid Betwist - Jelle Behagel and Esther Turnhout



Wild year

Can you have a wilderness experience in a densely populated country like the Netherlands? Of course you can, says teacher of Forest and Nature

Policy Koen Arts. Just by being out of doors. He and his wife Gina slept out of doors for 381 nights in a row. Under a tarpaulin at first, but that proved to be a bit much. The solution was a tepee with a wood stove. The couple eventually spent more than half their time outside, thus meeting the challenge of a 'wild year'. Arts felt it would take a year to restore his somewhat weakened bond with nature. His book about the experience is very readable. Arts is both an ecologist and a philosopher, and the combination produces interesting reflections on human beings' relationship with nature and how to protect nature.

Nature conservation only works if people care about nature. And that has to be learned. Not just by looking at nature, but by experiencing it with all your senses. Good advice in these Covid times. Off you go outside. RK





Key people: Caroline Verhoeven-Poelhekke

They are indispensable on campus: the cleaners, caretakers, caterers, gardeners, marketing assistants – the list is long. *Resource* seeks out these key people. This time, meet Caroline Verhoeven-Poelhekke (55), a designer with the Field Crops business unit at WUR Lelystad. Text Milou van der Horst Photo Guy Ackermans

'In my last job, as a designer for the Wehkamp catalogue, I flew around the world with models, photographers and stylists. A big contrast with design work for the agricultural sector. When I lost my job at Wehkamp, I worked for a while as a designer for a lingerie brand. Then, 11 years ago already, I saw a temporary vacancy for a designer at WUR Lelystad, and I am still here.

I work with researchers a lot now, and that is more relaxed than the fast-moving competitiveness of the fashion world. My product is usually the final stage or promotion material of a research project. So for me as an image creator, the challenge is to present the researchers' ideas visually. My clients often have a lot to say, but I show then that images can be more powerful than long chunks of text. Once they see that for themselves, things start moving and they help come up with creative ideas. That is so nice. Often I first need to show them that not everything in this sector has to be portrayed in brown, blue and green. I have a lot of freedom in my work because my clients usually see me as the expert. If we succeed in producing a nice result, it showcases the researcher's work and the public will remember their research. It is a thankful task. I find inspiration everywhere: from shops to nature. I can use my talents best when producing designs at short notice for posters, labels, logos and infographics. In future I want to make more time for finding inspiration and take new courses

'I show them that images are more powerful than long chunks of text'

to stay up to date. I'm usually too busy for that at the moment. Although I'm always inclined to keep on working, I have had to learn to take breaks because sitting in one position for a long time is not good for your back. That remains a challenge because once I'm caught up in the design process, staying in the flow works best for me. We intend to carry on working with Teams in future, because it makes it so easy to share designs and exchange ideas. I get very enthusiastic, working that way!'



Campus company

Green Dino

Over the past few years, Green Dino has sold about 300 driving simulators with which you can learn to drive a car, van or truck in a virtual environment. The simulators are bought by driving schools in the Netherlands and abroad. Virtual reality is the hallmark of this company, set up in 1992 by Jorrit Kuipers and Andrea Poelstra. Both the company founders studied in Wageningen, where he did a degree in Landscape Architecture and she in Consumer Behaviour.

They started out by visualizing landscape plans, creating virtual new housing estates in which you could walk around and experience the effect of noise barriers on residents. When these techniques became more widely available, Green Dino started focussing on driving lessons. The driving simulator is their main product, says Poelstra, but Green Dino also makes educational software and implements projects related

A good Wageningen programmer would always be welcome at Green Dino

nts projects related to traffic safety. For example, the simulator can demonstrate the effect of texting or alcohol on driving

behaviour. Their approved driving simulators are also used to test the effects of medical drugs on driving skills. Fifteen people work for the company in Plus Ultra.

Last year, Green Dino created a virtual practical for WUR, in which students can work interactively on distillation processes. There is no systematic collaboration with Wageningen research groups, however. Poelstra: 'We mainly need expertise on vehicle technology and behavioural psychology.' But a good Wageningen programmer would always be welcome at Green Dino. As

About 100 companies are housed on the campus. *Resource* introduces them to you. This time: Green Dino in Plus Ultra.

You come across all the flavours of the world in the WUR community. *Resource* editor Coretta Jongeling shares her version of the ultimate comfort food: lasagne!



Flavours of WUR

Corrie's courgette lasagne

'An Italian dish really, of course, although I might now get some protest from the Italian community... This lasagne is quite famous and friends who visit ask for it specifically. I often used to make it on a Saturday before going out: we would eat half of it for dinner and the other half when we came back feeling peckish after a night's drinking.'

- **1** Preheat the oven to 180 degrees.
- **2** Finely chop the garlic and onions and thinly slice the mushrooms.
- **3** Heat 1 tablespoon of olive oil and fry the onion, garlic and mushrooms over a medium heat.
- 4 When the onion starts to darken, add the Tomato Frito, pesto and vegetarian mince.
- **5** Turn down the heat and let the sauce simmer a while.
- 6 Meanwhile, top and tail the courgette and slice it thinly lengthways with a Dutch cheese slicer. Grease the oven dish. Slice the mozzarella.
- 7 Taste the sauce and season it with the salt, pepper and oregano.
- 8 Put a layer of sauce in the dish, followed by a layer of courgette slices and then a layer of lasagne. Continue layering until you have used everything, finishing with sauce.
- **9** Spread the mozzarella and grated cheese evenly over the top.
- **10** Place the dish in the centre of the oven for 40 minutes.

Ingredients (for 2 people):

- 2 large cloves of garlic
- 1 large onion
- 150g mushrooms
- 1 courgette
- 100g vegetarian mince2 350g packets of
- Tomato Frito1 tbsp olive oil plus extra for greasing the dish
- 2 tbsp red pesto
- 200g lasagne
- 1 ball of mozzarella100g grated mature
- cheese
 Salt, pepper and oregano to taste



Coretta Jongeling Online and social media editor at *Resource*

Which dish makes you think of home? Share it with us via resource@wur.nl

In other news science with a wink

+ HIGHER

The habitats of animals are shifting due to climate change. Not just horizontally, but also vertically. Researchers at the University of Colorado observed this phenomenon in 47 small mammals in the Rocky Mountains. To escape the increased heat, the animals moved an average of 100 metres higher up.

🔶 ... AND HIGHER

An average doesn't tell you everything, though. The shifts are more dramatic for certain animal species and slopes. Animals that inhabit the higher slopes move the furthest. The golden-mantled ground squirrel, for example, has shifted its territory 700 metres higher up in some places. And it keeps on relocating. Perhaps it will go over the top one day.

Top scientists are increasingly influential. One in five citations in journals goes to a small elite of the one per cent of most cited researchers, shows a Danish study (University of Aarhus). The proportion of citations going to this elite has doubled in 15 years. More citations means more research funding: a mechanism which scientists fear will erode the diversity of research. To those who have shall more be given.

HIBERNATE

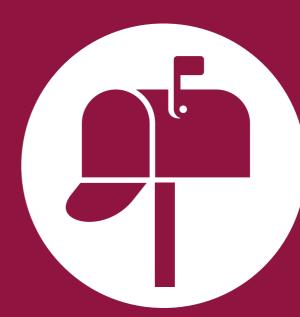
Bacteria arm themselves against antibiotics by mutating. But there is another escape route, researchers at the University of Zurich have discovered. They kind of hibernate, going through a phase in which they grow more slowly and with a different metabolism. Until the coast is clear, and they can take up their old way of life again. Now we know this, we can arm ourselves against bacteria. BK

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IN MEMORIAM

CONRADE ZAWE

Dr Conrade Zawe, Director of Irrigation at the Ministry of Lands, Agriculture, Water, Climate and Rural Resettlement in Zimbabwe, died on 25 January 2021 of Covid-19 complications. Conrade was only 62. With his untimely death, Zimbabwe has lost a hugely talented engineer who was deeply involved with farmers and capable of bridging societal and disciplinary boundaries. Both in his PhD study and subsequent Directorate career, Conrade sought practical solutions to revive the once vibrant irrigation sector that had been negatively affected by the fast-track land reforms of the early 2000s. Conrade was a double Wageningen alumnus, attaining a Nuffic-sponsored MSc in Land and Water Management in 2000, and his PhD in December 2006, after winning a WOTRO scholarship in 2001. The achievements of Conrade's working life have shown how positive international collaboration can be in empowering people and building capacities to impact agricultural insecurity in Southern Africa. He will be enormously missed.

On behalf of the Water Resources Management group (WRM), Em. Prof Linden Vincent, Prof. Rutgerd Boelens (WRM group), Alex Bolding, Gerardo van Halsema and Bert Bruins

Colophon

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[no]WURries

'I meet my mother once a month, but she doesn't take the coronavirus measures very seriously. She doesn't think it's necessary to socially distance, and she doesn't get herself tested if she has cold symptoms. I worry about her health and I don't want to get infected myself, but she dismisses my concerns. How should I deal with this?'

> M. (student, name known to the editors)

Do visit

'I can well imagine that you want to go on seeing your mother and that this makes visiting her difficult. For your mother's wellbeing, I would carry on going to see her. Tell her beforehand that you want to keep a safe distance for her sake and yours. You could also set a good example by wearing a face mask and opening a window. Even if she doesn't think such measures are very important, maybe she will respect your choice.'

Paulien Vinke, PhD student of Human Nutrition and Health

Up to her

'Talk it over with your mother. Tell her that you are careful where Covid is concerned and that you are not comfortable visiting people who don't stick to the rules, even if they are family. That way, it's up to her. If she keeps to the rules and doesn't see too many other people, you can visit her.'

Madelon van Vuure, BSc student of Animal Sciences

Might listen to you

'What a tricky situation. On the one hand, I think the measures come first, but at the same time, my parents are very important to me and I would find it hard not to see them. My advice is to ask your mother why she doesn't keep to the measures. That is a good starting point for a discussion. Perhaps you can make it clear to her that such measures are there to protect vulnerable people, a group that might include herself. She may not listen to the government, but maybe she will listen to her own child.' Mari-Lee Odendaal, MSc student of Marine Biology

Not sociable but sensible

'With friends and family, it feels natural to be close, even in times of Covid-19. It's easy to think, "It won't go wrong." And statistically, that's true: it goes well more often than it goes wrong. Nevertheless, 10 to 15 per cent of the people with a cough who get tested are infected with the coronavirus. That is enough to keep the pandemic going. As long as the number of vaccinated people in the Netherlands remains low, it would be better to visit your mother less often and call her more often – perhaps video calls. It's not as sociable, but it is safer.' Gorben Pijlman, associate professor of Virology Our new housemate made a very different impression when he visited to see if he was a good fit to the way he really is. He hardly says a word, spends most of his time in his room and makes a huge mess there. It's full of mould-covered plates and rubbish. Our house is quite tidy and we want to keep it that way. We've already tried to raise it light-heartedly, but the message doesn't get through. Does anyone have a solution?

Students S. and housemates (names known to the editors) Do you have some advice for this Wurrier? Or could you use some good advice yourself? Email your tips or question (100 words max) by 8 March to resource@wur.nl, subject line noWURries.