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RESOURCE **[EN]**

For students and employees of Wageningen UR

no 17 – 21 April 2015 – 10th Volume



Museums are full of hidden genes

p.12

>> HERCO + BIT PARTS

Herco van Gelder, caretaker at Orion

'A glimpse behind the scenes of a film'

He was spotted by a photographer in an Amsterdam pub on New Year's Eve. 'You should go to a casting bureau.' And within a couple of weeks Herco van Gelder had a bit part in *Storm*, a historical children's film directed by Dennis Bots. 'I play a nobleman. It makes a nice change to be part of such a totally different world.' Shooting is still in full swing. Early May in the open air museum in Kortrijk. *Storm* will be showing in cinemas at the beginning of 2017. © RK / Photo: www.museumfoto.amsterdam

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CAMPUS HOTSPOT

What's great about being a journalist is that you learn something new every day. A week ago, I'd never heard of the subalpine warbler, but now I know virtually everything there is to know about this little bird. For example, its Dutch name translates literally as 'beard grass sparrow' but it's not a sparrow at all. A colleague explains that it's a whitethroat, which occupies a very different branch of the tree of life to the sparrow.

Last week, hundreds of birdwatchers came to the Lumen garden with their expensive binoculars to see this rare bird. Thanks to an alert student who spotted it. Who knows how long the warbler had been living there undetected, enjoying its surroundings. That makes you think. What other wonderful treasures are hidden on campus?

Beneath my window in Atlas, a wetland nature garden is slowly taking shape. If all goes well, it will become a rare example of blue moor-grassland. Our campus as a hotspot of biodiversity. My prediction is that we'll be seeing a lot more of those birdwatchers.

Roelof Kleis



>> [The Netherlands has its King's Day, Mexico its Dia de Muertos | p.22](#)

APPEAL FOR BILLION EXTRA FOR RESEARCH

- Appeal to next cabinet in advance
- Cuts to innovation too severe

The next Dutch cabinet needs to spend one billion euros a year more on research and innovation, say the Dutch universities, research institutes and the employers' organization VNO-NCW. Some of that money should go to DLO, says Wageningen UR board member Tijs Breukink.

The Dutch government is spending less and less on research and innovation, said the Rathenau institute this week. That decline is set to continue at the same rate in the near future: in four years' time

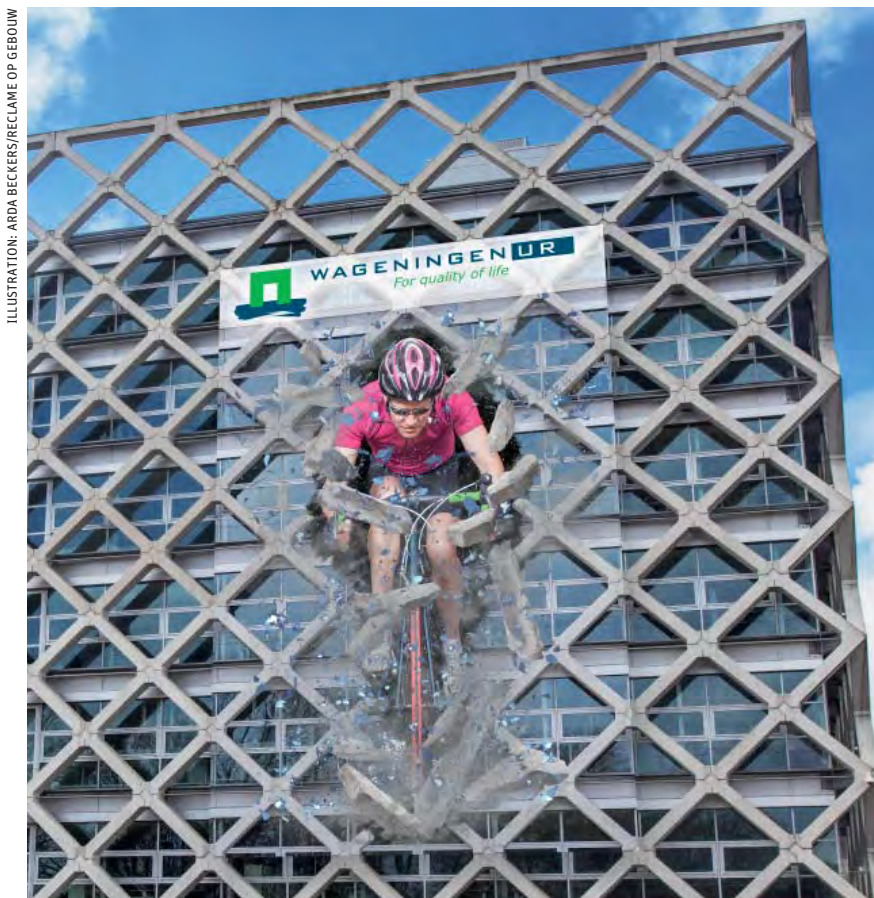
funding for research and innovation will be down by another 200 million euros compared with now. Most of the cuts are made by the ministry of Economic Affairs (EZ), which has scrapped one quarter of its research budget.

EZ allocated 30 million euros less to DLO research in 2015 than ten years ago. That has immediate consequences for Wageningen research institutes. Breukink: 'Take EZ spending on nature research, for instance. The amount actually budgeted for knowledge base research at Alterra was more than one million lower last year. Because this money is often used as cofinancing for acquiring projects tendered by other financiers, the potential loss of turnover runs to 3 million euros.'

As a consequence DLO is finding it increasingly hard to exploit its research facilities to the full, says Breukink. 'Although we do often manage to purchase new research facilities. For example, we are now going to invest in new buildings for the Central Veterinary Institute.' The problems start, however, when clients such as science organization NWO or the EU have to be billed for the use of these facilities. These clients are not willing to pay the full costs. A problem affecting all the technological institutes in the Netherlands.

'To maintain the innovative strength of the Dutch economy, the government needs to continue investing in applied research,' says

Breukink. The executive board and other universities and research institutes therefore intend to appeal to the next cabinet. But Wageningen UR can do more to address this itself, adds Breukink. 'We must improve the collaboration within Wageningen UR and with our partners. Examples are the collaboration with TNO in the field of nutrition and the biobased economy, and with Deltares on water-related issues.' DLO's business model needs rethinking too, in Breukink's view. 'A lot of the work is now just billed by the hour but perhaps it would also be feasible to have a share of the profits generated by our research.' Working out these sorts of ideas is a priority for 2016. **AS**



DAIRY COMPANY CSK IN PLUS ULTRA

- Research and sales concentrated here
- Company will take up almost half of building

The dairy company CSK Food Enrichment will be moving into Plus Ultra on campus. The company will be concentrating its research and sales operations in Wageningen. CSK will be renting almost half the space in the new building.

Property developer Kadans announced earlier this month that it had managed to secure a big player. That player turns out to be CSK from Leeuwarden. The company manufactures and develops ingredients for the production of cheese, butter and other dairy products. It was founded over a century ago and has an annual turnover of 60 million euros. The production factory, built only a few years ago, is in Leeuwarden. The company's research and development division is based in Ede, along with part of the production operations. That site will now go. The researchers will be joining the commercial departments in Plus Ultra. About 50 employees are involved in total.

CSK wants to build a pilot plant in Plus Ultra where it can test out new products. Managing director Sanne Melles says there is already a long tradition of cooperation between Wageningen UR and CSK. That made the decision to move to the campus a logical one. Incidentally, a lot of building work is required first; CSK will only be able to take possession in about a year.

CSK is the second dairy company coming to Plus Ultra, after the Chinese dairy concern Yili. **RK**

HELLO GIRO

The Giro d'Italia won't take more than ten seconds to whizz past the campus on Saturday 7 May. Just long enough for a couple of seconds' attention in the living

rooms of millions of cycling enthusiasts. This banner of 9.5 by 16 metres will hang on the wall of Atlas in the first week of May. **RK**

DREIJEN ARTWORKS RELOCATED

• New homes on campus

Three artworks from the Dreijen compound have been moved to the campus. The stainless steel *Portalen* [gateways] by artist Tim Hoving will be placed to the north of the Bornsesteeg opposite Unifarm. This seven-metre high artwork, which presided over the entrance to the Dreijen on the Generaal Foulkesweg, is now under restoration.

On the outer wall of the Biotechnion hangs the *Keramische Band* [Ceramic Band], a glazed bas-relief by Henk Tieman. The eighteen panels will be placed back to back near the pond in front on Zodiac. *Tectona Grandis*, the pillar of 'slices' of tree by Marinus Boezem, currently standing in front of the Biotechnion, will grace the lawn in front of the Restaurant of the Future.

Ⓡ RK

Keramische Band



Portalen



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Post-Panama science

My colleagues and I don't dodge taxes. We just count nematodes, aphids or bacteria and try to write a nice article about them. That's because we are ordinary people who just want to help make the world a slightly better place and then maybe go for a beer.

But something is bugging me. Joris Luyendijk, the Dutch journalist who has interviewed hundreds of people in the financial sector, stresses that financial professionals are pretty ordinary people too. In an article in the Dutch newspaper the *NRC* entitled, 'Panama is legal, so what's stopping them?' and describes it could happen that ordinary people facilitated tax-dodging.

His account contains ingredients such as extremely high work pressure, a lot of internal competition and the constant risk of losing your job. Under this extreme pressure, people switch off their moral compass. 'You become exclusively focused on "corporate survival": getting your job done,' writes Luyendijk.

Of course, a university is not a bank and our work pressure is doubtless not particularly extreme, but the principles in our field are comparable. Our careers are uncertain too. We feel that our work pressure is too high, too, and whether or not we get published in *Nature* or *Science* can make us or break us. Increasing competition for research grants and the government's goal of even higher scientific productivity put more pressure on the whole system. I think we should draw preventive conclusions from the Panama Papers affair. Let's just abandon the H index, tenure track and all those other competitive elements. Yes, no doubt productivity in the scientific world will go down and maybe Wageningen UR will drop down the international rankings. Too bad. Reliable and ethical scientific research is too important to be jeopardized for the sake of a bit more productivity. Ⓡ

Stijn van Gils (29) is doing doctoral research on ecosystem services in agriculture. Every month he describes his struggles with the scientific system.



in brief

>> AMSTERDAM IS... '... West Wageningen'

Prime Minister Mark Rutte sets great store by Wageningen UR's global reputation. He couldn't have made that clearer at the opening of the Innovation Expo in Amsterdam on 14 April. In tackling major problems such as rising sea levels and the world food problem, the Netherlands needs to act as one big collaborative city, said the Prime Minister in his speech. 'When Amsterdam goes on a trade mission and sees opportunities for the food and agriculture sector, mayor Van der Laan invites the rector of

Wageningen University along. So it's all very well to say: Wageningen is not Amsterdam. But on a global scale of course, Amsterdam is just West Wageningen.' Ⓡ AS



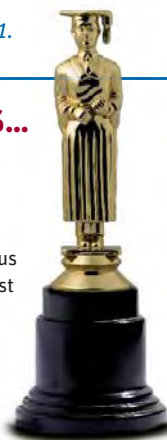
>> CUT-PRICE MEAT Professors protest

Seven Wageningen professors have signed a petition against the cheap cuts of meat used as loss leaders by supermarkets. The protest against cheap supermarket meat is an initiative by animal welfare advocacy organization Wakker Dier. Fifty professors across the country have signed the petition. Wageningen signatories include communication scientist Noelle Aarts (formerly on the board of Wakker Dier), environmental technologists Cees Buisman and Gatze Lettinga (emeritus), environmental scientist Esther Turnhout, sociologist Han Wiskerke, and ecologists Frank Berendse (emeritus) and Karle Sikora (emeritus). Ⓡ RR

See also the discussion on p. 11.

AND THE WINNER IS...

The winner of the Teacher of the Year Award 2016 will be announced on 21 April, the day this Resource comes out. Curious who can call themselves the best teacher in Wageningen for the coming year? Read it on resource-online.nl. You can see the five films about the nominees there as well.



SIX OUT OF TEN FOR ACCESSIBILITY

- **DTV Consultants: start new cycling campaign**
- **Students fly more than staff**

Staff give the accessibility of the campus a six out of ten. Car drivers in particular are not satisfied, but they are even less impressed with the alternatives to the car. Students are more positive: they give a seven for their mode of transport. These results come from the latest mobility survey among staff and students.

The study by DTV Consultants shows what everyone really already knew: the accessibility of Wageningen and the campus is not great. Wageningen UR, the municipality and the province of Gelderland are currently making plans to improve that accessibility. According to DTV, bicycles as an alternative can make the difference.

At present, half of all employees cycle to work, slightly fewer than in the previous survey four years ago. DTV recommends starting a new campaign to encourage cycling. A bigger travel expenses allowance for cyclists could be part of that ap-



PHOTO: SVEN MENSCHER

Getting off the campus by car in the evening rush hour is quite a job.

proach, as well as Park&Bike facilities at the A12 exit in Ede.

Joke Luttkik, head of the Safety & Environmental Services department at Facilities and Services, says she does not yet know what the follow-up will be to the survey. 'You have to look hard at what makes people change their behaviour.' She points to an ongoing study at Alterra on how you can persuade people to abandon their cars and

get on their bikes.

In addition to more cycling, flexible working hours are a promising alternative. Over half of the employees say that it is always or often possible to shift work times. That leaves room for more flexible working hours.

DTV Consultants also surveyed whether people travel for their work or study. Half of all staff never go on business trips. One in six

have one trip a month and a quarter travel for work more than twice a month. Almost half of those trips are by car, while one in eleven is by plane. A striking result is that students are more likely to fly. Almost one fifth of all students had been on one or more trips by plane in the past year. **© RK**

See also p. 18: More journeys by bike will be hard

SCHOOL STUDENTS EXPLORE SCIENCE

High school students from the Pantarijn in Wageningen were introduced to soil science on 11 April, when they visited the World Soil Museum on the campus. Soil scientists Stephan Mantel and Mirjam Hack showed them around and took them outside to have a go at using a soil drill. The workshop was part of the first 'Gymposium' at the Pantarijn, in which parents of students teach them a bit about their work or hobby. Several Wageningen UR employees took part, so the students could learn something about taste research, evolution biology and meteorology. **© LdK**

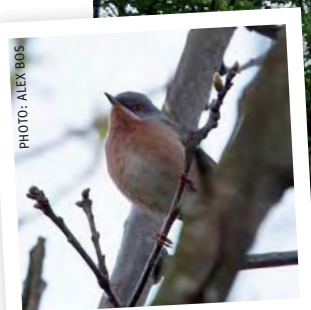


PHOTO: SVEN MENSCHER

SUBALPINE WARBLER DRAWS BIRDWATCHERS TO CAMPUS

- Rare sight in the Netherlands
- Discovered during Campus Challenge

The garden at Lumen became a place of pilgrimage for birdwatchers this week. The cause of all the excitement was the rare subalpine warbler. The little bird was spotted on Thursday evening by BSc student of Forest and Nature Management Robert van der Meer. He was working on the Campus Challenge, an event organized by WS-BV Sylvatica study association in which participants have to identify as many species of plants and animals as they can in one hour. 'Unbelievable! Inadvertently focused my binoculars on a subalpine warbler,' wrote Van der Meer on Facebook and a Dutch nature website waarnemingen.nl. 'I knew it was a subalpine warbler straightaway,' he says. 'I am a fanatical birdwatcher and I've seen it before.' The other students couldn't believe it at



first, but it turned out to be true. The bird is easily recognized from its colouring.

The news had predictable consequences. Birdwatchers from far and wide descended on the campus to see the subalpine warbler with their own eyes. Or rather, through the lens of to-

pnotch binoculars and cameras. Gardener Wieger Wamelink knew what to expect. 'Before you know it, our garden will be trampled to bits.' On Friday the public were still allowed into the garden, but from Saturday they could only see the bird from the Mansholtlaan. **✎ RK**



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10 May | 2016

WeDay

Register from
5 April to 2 May 2016

Don't miss this year's afternoon full of challenging activities for all employees! With many familiar events, such as the hexathlon, but also plenty of new activities. How about participating in a boxing training session, bootcamp or classical ballet lesson? Visit the We Day intranet page for more information and registration.

We Day location: Wageningen UR, Sports Centre de Bongerd, Wageningen



OPEN AIR LAB FOR WAGENINGEN WATER EXPERTISE

- Collaboration with water board and Deltares
- Hierdense Beek is first 'open lab'

The Vallei en Veluwe water board has plans to collaborate with Wageningen UR and Deltares research institute on developing field laboratories for water research. These 'open labs' will provide a location for testing new knowledge and methods. The first lab is already there: the Hierdense Beek, a stream on the Veluwe. Another one is planned for an urban location (probably in Apeldoorn) and a third one will be located on farmland.

At various spots along the eight kilometer-long Hierdense Beek, flood plains have been created by putting trees in the water. A total of 70 'wood packages' have been placed across the stream. At seven locations 'sand motors' have been created too, each one made of 200 cubic metres of sand. The fast-flowing water carries away the sand, which then gets caught by the trees in the stream. As a result the stream becomes shallower and overflows its banks. This works. 'At peak flow times there are already 60 hectares under water around the stream,' says project leader Maarten Veldhuis of the water board. That is good for the flora and fauna and for the biodiversity of the stream.

'Precisely that transition from wet to dry is important,' explains ecologist Ralf Verdonshot of Alterra. 'Grasses, sedge and yellow irises, which are highly nutritious for mammals, grow in a green, swampy belt around the stream. It is a sea of flowers here in the summer. A floodplain like this creates a biodiversity hotspot.' This method is called 'Building with nature': creating the right conditions and then letting nature take its course.



Ralf Verdonshot (left) and Maarten Veldhuis working on the Hierdense Beek.

This was sorely needed in the Hierdense Beek, explains Veldhuis, because the stream was flowing far too fast. 'In the past the runoff into the stream was slowed down by lots of heather, swamp, peat and woodland. This mean rainwater only reached the stream slowly.' The environment around the stream worked like a sponge, adds Verdonshot. But the intensification of agriculture changed that. A lot of new ditches were added as land was brought under cultivation, resulting in water draining from the area at a much faster rate. 'The stream rushed towards the Veluwe lake,' says Verdonshot. 'As a consequence the stream dug itself deeper and deeper into the landscape. And the water took all sorts of stuff with it – substratum, leaves, gravel, leaving bare banks behind it.'

It is precisely that substratum, says Verdonshot, which is crucial for numerous species. 'For water insects such as sedge flies and mayflies, for fish such as the brook lamprey, and to provide a bank for birds such as the kingfisher. To keep that substratum in place, the soil needs stability. Flooding helps create that.' With the help of Wageningen expertise the stream has been restored to its former glory. Which is not as easy as it might look, explains extraordinary professor Piet Verdonshot (Ralf's father). 'You must position those wood packages where they won't totally block up the stream. It took us two years to figure that out. The way those trees are lying might look random, but that's deceptive.'

The job is not done, either. The researchers will be using the next

few years to analyse the effects, says the professor. 'How high does the water level go, how much sand is carried downstream, and what happens in that gradient between dry and wet? You need several years to get a clear picture of all that. If you want to duplicate this pilot elsewhere, you need to know exactly what the effects are, including the impact on water safety downstream and on the water supply.'

Besides the chance to apply knowledge in the field, the collaboration with the Vallei en Veluwe water board provides Wageningen with internship opportunities for students. Staff of the water board can take courses in Wageningen. Professor Piet Verdonshot hopes to make similar deals with three other water boards in the region around Wageningen. **✎ RK**

LIFESTYLE TRAINING HELPS PEOPLE IN POOR NEIGHBOURHOODS

- Adapted version of SLIM programme
- Sport in groups promotes health

Overweight people from disadvantaged neighbourhoods can benefit from an intensive lifestyle programme in their own neighbourhood which offers weekly exercise classes, group sessions on nutrition and individual dietary advice. These findings come from doctoral research by Sandra Bukman.

Diabetes and cardiovascular diseases are more common among people of lower socioeconomic status and from certain ethnic minorities. But these are precisely the groups who do not tend to join lifestyle programmes, or who soon drop out. So Bukman tried adapting the promising SLIM programme, with its weekly exercise classes and four hours per year of dietary advice, for this target group.

'Participants are offered a tour of a supermarket, for instance, to look at how they could make healthy choices even on low budgets,' explains Bukman. Participants from the Turkish or Moroccan communities were seen by dieticians and research assistant from the same communities. And there were separate exercise classes for men and women. To keep the threshold low, all the activities took place within their own neighbourhood.

A total of 117 people of Dutch, Turkish and Moroccan origins, living in disadvantaged neighbourhoods in Arnhem and Eindhoven, took this adapted programme last year (with a control group of 103 people). They were all overweight. In the course of the year the average girth size of the group went down by 3.3 centimetres and their cholesterol levels improved. So did their quality of life. Bukman received enthusiastic feedback such as: 'I can walk upstairs again without getting tired'.

'The classes really brought people together,' adds dietician Anja Daniëls, who was involved in the intervention in the Arnhem neighbourhood of Geitenkamp. 'It meant people could support each other, which made them keep on coming.'

The flip side of the positive results is the 31 percent dropout rate, which would seem a setback for a lifestyle programme. 'It is,' agrees Bukman, 'but this proportion is comparable to other studies of this target group. And I wonder to what extent the dropout rate is because of the programme or whether it's because of the study around it. Because some people didn't want any more measurements taken.' And some people drop out because of emigration or a period abroad.

Sandra Bukman graduates on 26 April. Her supervisor is Edith Feskens, professor of Nutrition and Health in the Life Cycle.

® Anj



A participant in the lifestyle programme studies soup packets during a guided tour of a supermarket.

VISION <<

'Large litter not the only cause of piglet deaths'

To reduce piglet deaths, state secretary Martijn van Dam wants to set a limit to the litter size for sows. That would help but it's not enough, say Wageningen pig researchers Herman Vermeer and Marion Kluivers of Livestock Research.



What is the problem?

For years about 12.5 percent of piglets have died in the first few weeks after birth, says Vermeer. Last year, however, piglet deaths rose to 13.5 percent, causing animal welfare groups to sound the alarm. The growing size of the litters plays a role here. Twenty years ago, a sow had 11 or 12 piglets; last year the average was 14.4. Vermeer: a sow now typically gives birth to more live piglets than she has teats for. And given that piglets all have their own teat, the smallest soon lose the competition for their mother's milk.'

How can you reduce piglet deaths?

Kluivers: 'Stop breeding for litter size, and pay more attention to the vitality of the piglets.' Vermeer: 'But that is not enough. Piglet death is a multifactorial problem and you need to address it on several fronts.'

Such as?

Vermeer: 'You should select for maternal traits as well, such as lying down carefully in the farrowing pen. We know from applied research that breeding sows that have grown up in a more stimulating environment, with straw and entertainment, go on to become better mothers. They are more sociable and calmer and they take better care of their brood. You can stimulate such behaviour in the mother, but we don't know enough about that yet.' Kluivers: 'The climate in the shed plays a role too. Just after birth the piglets need a temperature of 35 degrees, but the sow wants 18 to 20 degrees, because above that she suffers from heat stress. Ideally, farrowing pens are incubators with a place where the sow can cool down. There are sheds with a cooling panel for the sow and movable floors, so the piglets don't get stuck underneath the sow.' Vermeer: 'But labour input and care can help here too. Pig farmers can keep the piglets separate while the sow is being fed, they can lay the piglets in the nest, they can feed the runt with formula milk, and they can make use of foster sows. All this does happen on farms, but it is very time-consuming.' ® AS

CAPTURING EVOLUTION IN THE LAB

Understanding evolution and eventually even predicting it – that is the ambition of Arjan de Visser, the new professor holding a personal chair in Evolutionary Genetics.

How did the zebra get its stripes, how did the giraffe get its long neck, how did humans lose their hair? In the past, such nice stories were all

that biologists had to offer when it came to evolution. Those days are gone. Now scientists use controlled experiments in the lab to see how species change.

The insights that this produces are not only interesting for academics, says De Visser. He also applies his work to tangible issues. For instance, he looks at how resistance to antibiotics

develops in bacteria. But evolution also plays a role in diseases such as cancer, where selection processes sometimes cause tumour cells to become unaffected by drugs. But it is not yet clear how predictable evolution actually is.

To answer that question, De Visser studies evolution in simple systems. For example, how does resistance to one antibiotic develop in a single gene? This approach of reducing evolution to its essence is something he learnt in Richard Lenski's laboratory. Lenski is a biologist known for an experiment that has run for more than 25 years in which he lets 12 bacterium strains evolve. In this way, the process can be tracked in minute detail, and they can look back in time – because each generation is frozen away.

De Visser wants to do something like that on a larger scale and also to follow far more evolving bacteria. He wants to do this to get an idea of the predictability of evolution. Soon one of his staff will start work on a machine that puts bacteria in minuscule droplets. These droplets then turn into miniature ecosystems. De Visser wonders how the 'social relations' between bacteria affect their further evolution. **RR**



PHOTO: GUY ACKERMANS

Arjan de Visser during his inaugural lecture on 14 April in the Aula.

USING ALGAE TO PURIFY GAMBIAN WATER

• High school students reach final with their project

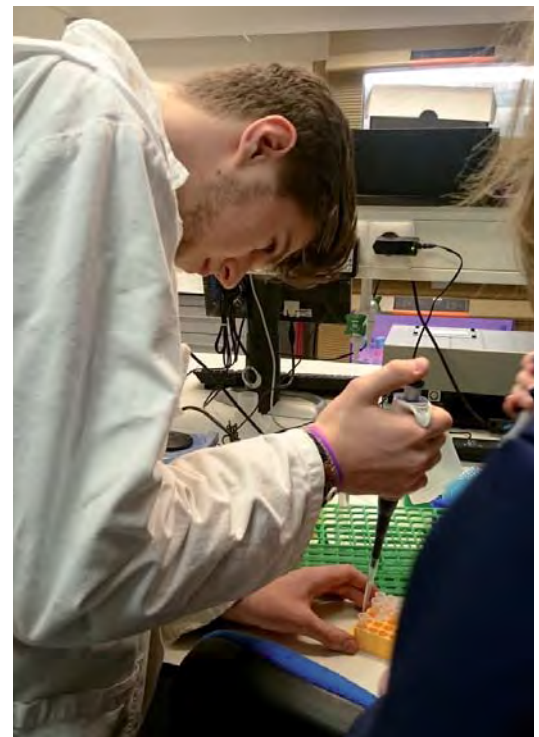
A group of Dutch high school students have designed a water purification system that uses algae to obtain drinking water and nutrients from Gambian river water. Also collaborating on the project were Wageningen researchers Ben van den Broeck and Dorinde Kleinegris of Food & Biobased Research. It has gone well: on 21 April Bram Klein Wentink, Carmen Swiers, Lisanne Peters and Tessa Mennink of the Ludgercollege in Doetinchem will compete in the final round of Imagine, a competition for high school graduation projects.

Gambia's hot climate plays a major role in the water purification system. In the first of four tanks, sunlight heats river water to at least 60 degrees, killing micro-organisms. The second tank contains Chlorella, an alga which fil-

ters those heavy metals out of the water. In the third tank grows edible Spirulina algae, absorbing nutrients from the water. The alga is not particularly tasty, in Bram's opinion.

'Spirulina stinks of fish food and grass. Luckily you only need about 3 grams of it per day.' The last stage is distillation, with sunlight causing the water to evaporate, after which the steam is cooled and captured for use as drinking water.

The high school students tested the growth of the algae, using water from the Oude IJssel. 'In the Gambia people use the river as a toilet,' says Bram. 'To obtain comparable water we added our own urine to the tubs of river water.' They also added Chlorella and Spirulina. In the Wageningen laboratory they measured the pH of the water and examined the algae under the microscope. 'It was very nice to see a real lab and talk to researchers,' says Bram. 'We learned that it's not just money that enables you to solve problems in developing countries, but good ideas too.' **DdV**



Bram Klein Wentink at work in the lab in Wageningen.

Is the new class divide in Dutch education the result of the recently established loan system? Resource readers debate the issue. Meanwhile a smart plumber sees an opportunity in the leaking Forum roof. Got an opinion too? Join in the discussion on resource-online.nl or email resource@wur.nl.

REACTIONS ON...

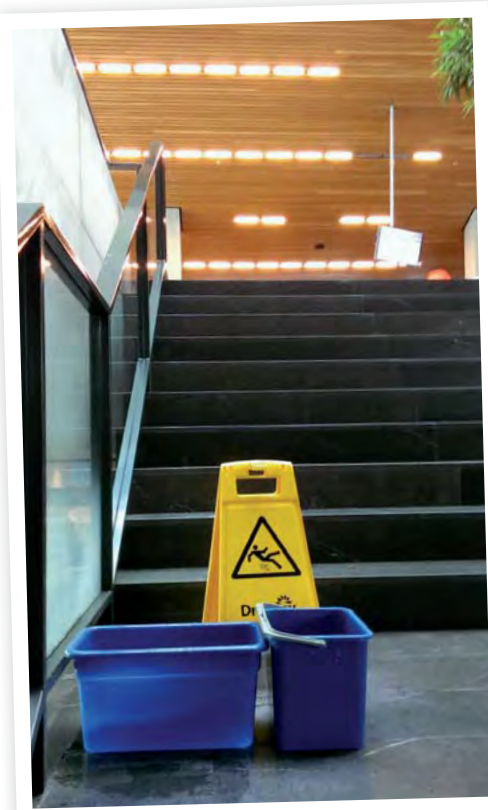


RESOURCE-ONLINE.NL

FORUM LEAKS

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It is a fascinating sight, a little bucket on the stairs in the Forum, with drips falling steadily into it – or next to it. A news bulletin about this has one businessman sitting up and taking notice.

Bas van den Berg, specialist in leak detection and repair, doesn't let the grass grow under his feet and duly provides his mobile phone number and email address. If Wageningen UR gets in touch, he'd be only too happy to help.



Extremely kind, Mr Van den Berg. Sadly, a strict Resource editor saw this as advertising and pressed the delete key. But if you want to get in touch with us, our advertising sales department would be only too happy to help.

BARGAIN MEAT

.....
Seven Wageningen professors signed a petition from animal welfare organization Wakker Dier against extremely cheap cuts of meat used as loss leaders by supermarkets. Is that appropriate for an independent scientist? Certainly not, snap some in Wageningen.

'O-oh, a university that conforms to Wakker Dier. How objective can your research be after that?' asks Kippekop. According to Student, on signatory, professor of Strategic Communication Noëlle Aarts 'has for years found it hard to separate her activism and her professorship. In the course on strategic communication, cuddly animals from the WNF are thrown into the classroom with slogans such as "join the WNF or nature will be destroyed".' Bloem notes that the signatories do not include 'professors who know what they are talking about'. 'I'd say that's a signal. Unfortunately others will see this differently...' Kees takes the same view. 'Stick to what you know about. I don't think I see any professors from the Animal Sciences Group on the list, so I don't take it seriously.' 'You could questions whether professors of Animal Sciences can speak freely,' offers Buurman van de Haarweg. 'If they supported this kind of initiative they might ruffle the feathers of the industry they work for and with.'

UNEQUAL STUDENTS

.....
Research shows that whether clever children get to go to university depends on whether their own parents enjoyed a higher education.

Graskaas knows exactly how this has come about in the Netherlands. 'A doctor has a bit more money to pay for his children's higher education than a bricklayer. Maybe that's to do with the abolition of the basic grant or something! There you go, back 100 years. University is for the elite!' Broer Konijn thinks that's baloney. 'That's easy, coming out with populist slogans (...) I'd say it's certainly true that less highly educated parents are more likely to discourage their children from getting a higher education simply because the word "loan" has such negative associations for them.' A barrier which could easily be removed with 'a little bit of information' and 'less fearmongering', says Broer Konijn. © RK and LdK





Museums are DNA storehouses

Dusty skeletons, mounted beetles, dried plants, stuffed animals: natural history museums have a fusty, antiquated image. But new techniques are rapidly changing these collections into storehouses of ancient DNA. Take a peek into the stomach of the mammoth.

text Rob Ramaker *illustration* Geert-Jan Bruins *photos* Naturalis and Rob Ramaker

The tube lighting flickers on, revealing an extraordinary spectacle. A hall filled from end to end with antelopes, deer and other hoofed animals. There are skeletons and stuffed specimens, large and small, with or without antlers. A stunning display of the diversity of life that leaves the visitor speechless. 'Yep, so that's it,' says guide Steven van der Mije jestingly. Van de Mije and his colleagues manage the roughly 37 million items in Naturalis Biodiversity Centre in Leiden. Some of them came here from Wageningen: almost a million plants, for instance, most of them African, which came from Herbarium Vardense. Not to mention the 24,000 preserved flowers and fruits and 5000 dried fruits that went from Wageningen to Leiden too, or the wood samples and one million insects from the entomology collection.

But Van de Mije's collection houses something else that is locked inside all these animals and plants: DNA, the genetic material of this collection of life forms. That may seem a trivial distinction to make, but it isn't. Technological advances have made it easier and cheaper to actually decode this DNA. This enables researchers to ask new questions and to explore the past.

BARCODE

The main thing scientists do with the stored DNA is to convert it into 'barcodes', says Arjen Speksnijder, head of the laboratories at Naturalis. They might for example pull a leg off an insect or cut out a section of a bird's foot, and use their sample to decode one specific fragment of DNA. Scientists around the world have agreed to study the same fragment so that barcodes are comparable. The codes are then fed into a database, says Speksnijder. A reliable record in which everything can be traced back to a sample and the museum piece it came from. Scientists use this database to identify animals and plants they come across.

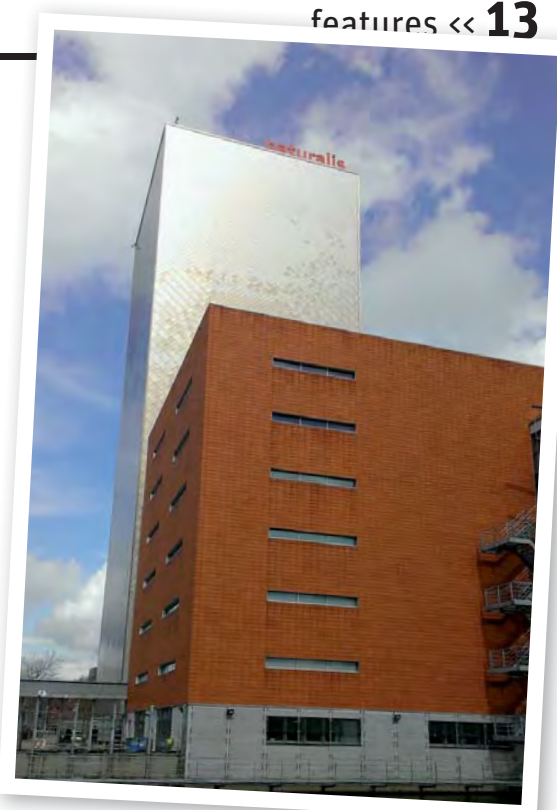
This is more exciting than it sounds, thanks to rapidly improving techniques. Speksnijder's clients, for example, include the ministry of Defence and Schiphol airport. If an aeroplane hits a bird it gets so mashed up by the jet engine that it is impossible to tell which species it was. But the ministry of Defence has an obligation to keep environmental impact records. 'If you keep on hitting protected species, you do a lot of damage,' say Speksnijder. He

helps identify the birds that got into the jet engine and advises on flight paths.

Speksnijder works in all sorts of fields. Customs officers confiscate traditional medicines which often contain parts of protected species for which a ban on international trade applies. 'So they don't come with a description saying that this one contains chimpanzee or that one contains armadillo.' But thanks to the technical advances of the last ten years, he can decipher the DNA in a pill and check whether it is on the online database. That tells you straightaway whether protected species have been used.

MILLIONS OF FRAGMENTS

Most museum pieces do not tell their secrets so readily, however. They have usually undergone a lot of processing so as to preserve them for centuries. Before plants end up in a herbarium they are dried in an oven and – if they were collected in the tropics – kept in some kind of preservative for a while. These actions have a big impact on the DNA, discovered Freek Bakker, assistant professor at the Biosystematics chair group at Wageningen



The 60 metre-high 'animal warehouse' of Naturalis museum in Leiden.

One of the depots with hoofed animals.





A glimpse of the public museum at Naturalis.

University. Through these treatments the DNA gets broken down into very small pieces and about 80 percent of it is no longer decipherable, probably because it gets glued together into a ball.

Nevertheless, in 2013 Bakker and his postdoc Martijn

Staats succeeded in decoding almost all the genetic information – much more than just the ‘barcodes’ – of a little plant that had been sitting in the Wageningen herbarium for 44 years. It was more difficult than it is with a ‘fresh’ plant, but once it has dried it makes no difference how old the plant is. So centuries-old plants are already being studied.

Each item presents its own challenges. The preservative commonly used on animals is notorious for ‘clicking’ DNA strings together. But Bakker and other biologists sometimes

strike lucky. In recent years they have had access to equipment that can deal with DNA which has been broken down into little pieces: the perfect solution for ‘museum DNA’. The computer then puts the pieces together again.

Because of the vastness of collections such as the one at Naturalis, it will take a while before there is a barcode for every item. Standing in amongst rows and rows of



BEWARE! DNA CONTAMINATION

One of the biggest problems in working with old DNA is contamination with modern DNA. This mainly comes off scientists’ hands or through sloppy work in the lab. Laboratories are equipped to prevent this, says Arjen Speksnijder, head of the laboratories at Naturalis. He gives the example of how the DNA of a monkey in the museum was obtained. ‘We worked in a “clean room”, with a hairnet and two pairs of gloves on.’ A molar extracted from the animal was then sterilized with UV light. ‘We could then extract DNA from the centre.’ To prevent contamination, each step in the process – isolating, reproducing, decoding – was done in a different room.

laden shelves, Van de Mije gestures to the abundance around him: 'We say we have 37 million items, but it might be 40 million for all we know.' Only 70,000 of these have so far been allocated a barcode. And material is coming in all the time. But this is going to be big, he believes. Everything new that comes in is immediately decoded. And requests from external researchers are pouring in.

TIME TRAVEL

It's not just the ministry of Defence and Schiphol that have interesting questions for museum collections. Many biological objects are time machines which can give us a window into the past. Where else than in a museum or at an archaeological dig can you find the DNA of dodos, Neanderthals and quaggas? Speksnijder once even inspected the stomach contents of a mammoth. By studying all the DNA fragments in it, researchers got a good impression of the creature's last meal. 'Then you can see which plants were growing 40 to 50 thousand years ago.'

Plant researcher Bakker hopes dried plants will prove to contain all kinds of genes that are of interest to plant breeders. Tomato plants from hundreds of years ago may contain gene variants which are no longer found in the modern variety. Bakker's colleagues do another kind of time travel. 'For example, one researcher, Yoshida, has described the DNA of the *Phytophthora* variant which contributed to the Irish potato famine,' he says. One million Irish died in this famine between 1845 and 1850, and another million emigrated. Yoshida did this using herbarium material from German and English herbariums. 'The cause turned out to be a short-lived one-off variety.'

CAPTAIN COOK

The possibilities can be seen at a glance in the depot. Van de Mije stops in front of a case full of stuffed birds. It is the first in a whole row, but this one is unique because all the birds in it are extinct. Probably the rarest of them all is in a tiny glass case: the Tahiti sandpiper collected by Captain Cook on his voyage across the South Pacific. The bird has never been seen since – probably wiped out by the rats brought in by the Europeans. The other two specimens that were collected have since disappeared. So Van der Mije personally cut into the sandpiper's leg, obtaining a sample that can be used to find out about its evolution and relationship with other species.

There are limits to this time travel, however. Scientists can only go back a few hundred thousand years in time. DNA from before that time has deteriorated too badly to be decoded. But that doesn't mean you can't do anything, says Speksnijder. 'The protein collagen deteriorates much more slowly and you can use variations in that to identify animal species.' Speksnijder has his own wishlist of things he can't research yet, but would very



A few Darwin finches from the Naturalis collection.

much like to. He would love to find out which community of bacteria – known as a microbiome – lived off the animals in the museum. 'These bacterial communities are unique to their hosts. So it's like a fingerprint.'

But the experts all agree that the new technology is no substitute for the 'old school' work of describing and comparing the morphology, or form. Van der Mije laughs about researchers who decode the DNA of an entire bird family but then have nothing useful to say about the differences between species. Van der Mije takes obvious pleasure in dragging his guests from one depot to another, taking the lift between the 20 floors of the Naturalis tower. Racks full of mounted butterflies, long rows of cases full of fish in glass preserving jars... It goes on and on until the visitor is dizzy. And then you've probably only seen a fraction of the collection. Ultimately, he seems to be saying, scientists themselves must go digging for treasure in this trove of objects and DNA. 'There's enough work here for the next 300 years.' **R**

TREASURE HUNT AT SCIENCE CAFÉ

On April 28, Science Café Wageningen will be on the trail of the 'Natural Treasure' tucked away in natural history museums. The speakers will be Arjen Speksnijder, head of the laboratories at Naturalis Biodiversity Centre, and Jelle Reumer, professor of Palaeontology at Utrecht University and former director of the Natural History Museum in Rotterdam. The evening stars at 19.45 in café Loburg and admission is free.



'NEW WORK AND PROGRESS'

You are now greeted by Baconian profundity at the new amphitheatre on the field between Zodiac and Helix. Only trouble is, it's in Latin. The gist of it is: 'The arts and sciences should be like mines, where the sound of new work and progress rings out from all sides.' The text was proposed by board president Louise Fresco, a keen advocate of cross-fertilization between the arts and the sciences. She is pictured here unveiling the text with the help of board member Tijs Breukink (right) and Peter van der Jagt of the WICC foundation, which funded the text.

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Read the whole story
on resource-online.nl.

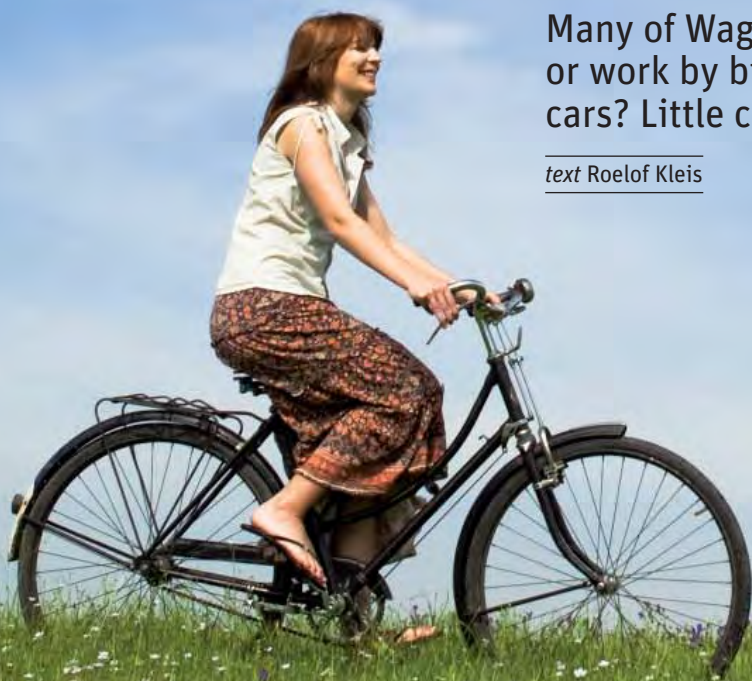
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Hard to get more people on their bikes

Many of Wageningen UR's staff and students come to class or work by bike. And the rest? Can we get them out of their cars? Little chance, a study shows.

text Roelof Kleis



The daily jams on the Mansholtlaan tell a clear story: Wageningen UR has an accessibility problem. Expressed in scores, staff give the campus six out of ten on this point. That is an average for all means of transport; the score for access by car is a little lower. Students are more positive, giving the campus seven out of ten for accessibility. This is because the majority of students live in Wageningen, come by bike and never have to queue. That is, if you don't count the daily bike jams on the Churchillweg.

MORE SUSTAINABLE


These grades come from the latest mobility survey by DTV Consultants, in which students and staff were invited to take part in December. The results provide a nice, representative picture of how we get to the campus, how many kilometres we cover, how long that takes and what scope there is for doing things more sustainably. This was the first such study among students; a similar study among staff was done four years ago.

Accessibility by car was considered barely passable but public transport scored no higher, with a six. Strikingly, the new bus lane across the campus does not seem to have changed much in this regard. Only 3 percent of staff say the new line has influenced their choice of transport. Three quarters of the students cycle to class; the rest come by train or bus. One in 20 students comes by car. The bicycle is popular among staff too, with half the staff cycling to work. That is a lot: one in three counts as a reasonable score nationwide. And yet the proportion of cyclists has dropped by 4 percent compared with four years ago. It is not clear why that it. It might be due to the expansion of the campus, with some departments having moved there from elsewhere in Wageningen.

Half the staff and as many as two thirds of the students say they get held up on their commute to work or class. The issues they mention are access to the campus, the number of bicycles on the Bornsesteeg and the jams on the Mansholtlaan. These bottlenecks are being addressed, mind you. Plans for widening the Mansholtlaan and the Nijenoord Allee are in the advanced stages, as are plans for a northern access road onto the campus. A flyover roundabout at the Bornsesteeg should improve the traffic flow for the crowds of cyclists there.

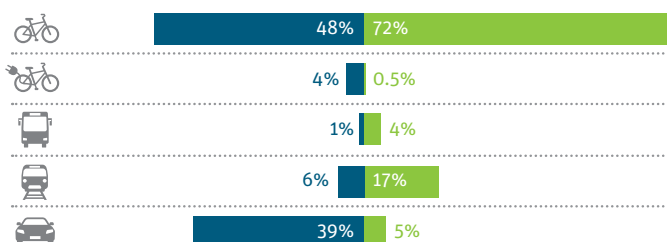
OUT OF THE CAR

An interesting question is whether it will be possible to get people out of their cars. 'Smart travel' is what DTV Consultants call the aim: going by car when necessary, taking public transport whenever possible. Could we commute more smartly? In theory we could. For every car driver, DTV looked into whether the bicycle, bus or train could be an option. In terms of transport, cycling would be feasible for one in five drivers (the journey is less than 15 kilometres). And one in 20 drivers who live further away could come by public transport.

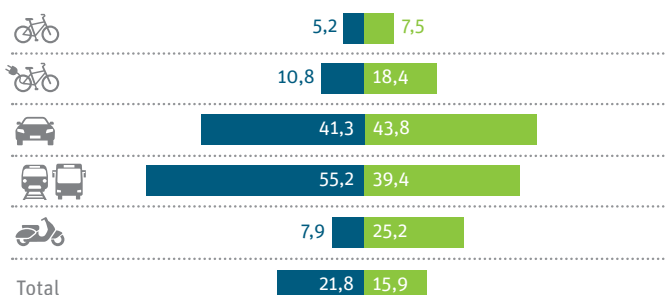
But it is not as simple as that in reality. Studies elsewhere show that only one in five car drivers are willing to switch to another means of transport. The implication of that for Wageningen is that targeted campaigns won't persuade more than 2 percent of those currently coming by car to leave it at home. 



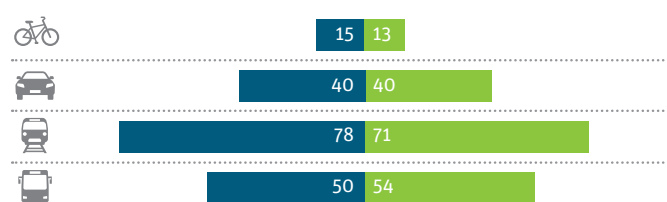
Means of transport in percentages



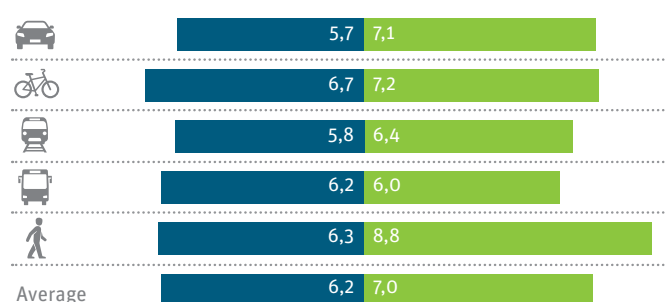
Commuting distance per means of transport (kilometers one way)



Commuting time per means of transport (minutes one way)



Rating for accessibility per means of transport



Optimism about future of crop protection

From chemistry to biology

Harmful chemical pesticides are by no means a thing of the past. And yet the transition from chemical to biological crop protection is going better than many critics believe, say board president Louise Fresco and researcher Jürgen Köhl.

text Albert Sikkema illustration Geert-Jan Bruins



The Royal Netherlands Society of Plant Pathology (KNPV) celebrated its 125th anniversary last week with a conference on the history and the future of crop protection. Good timing, as there has been a lot of criticism recently of chemical pesticides such as glyphosate and neonicotinoids. Wageningen UR president Louise Fresco's talk at the conference was a bit of a pep talk. She declared science to be the key to a sustainable, resilient global food production system. Critics would have us believe that large-scale intensive agriculture with its chemical crop protection is problematic, she said, but in fact it has been a great success. Great strides have been made using traditional plant breeding to combat agricultural pests and diseases. Not so very long ago, one in five people worldwide suffered from hunger; that figure has gone down to 11 percent of the world population. There are now more obese than undernourished people, said Fresco, citing a recent article in *The Lancet*.

In fact, that article revealed that half of today's world population has an unhealthy

diet one way or another: eating too little, too much, or an unbalanced diet.

Fresco: 'The challenge today is to produce healthy, safe food for the future world population. To do that we need agriculture, and that agriculture is a complex ecosystem in which there is a continuous rat race between species we want and species we don't want.' In this context, new breeding techniques and integrated crop protection are going to ensure that we are less dependent on chemical pesticides, predicts Fresco. She talks of ecotechnology, based on a thorough knowledge of the natural enemies of pests, or of the soil life around plant roots, combined with modern breeding methods and precision agriculture.

MILDEW

Wageningen phytopathologist Jürgen Köhl is already working here on the EU project Bio-comes. He and other European researchers as well as companies want to develop biological pesticides for major diseases and pests such as aphids, diamondback moths, whiteflies, bacterial wilt, *Fusarium* fungi and mildew. Sometimes these pests and plant diseases can

be successfully dealt with in greenhouses, but not yet in the open air. This is because a pest's natural enemies react more strongly than chemicals do to environmental conditions such as temperature, humidity and UV light.

Köhl and his project team are looking for an effective biological pesticide against mildew, a fungus that affects grains, apples and strawberries among other products. To this end he collected mildew colonies and isolated micro-organisms in them which have mildew on their menu. Köhl identified as many as



1200 'isolates', as he calls them. Project staff evaluated their suitability: do they survive outdoors and above ground? Can they withstand UV light, low temperatures and drought? Nearly 200 of the 1200 candidates got through this screening.

From this group Köhl selected the most promising micro-organisms, which are now being bred on campus. They will be taken outdoors in May, when Köhl will find out whether they can survive out of doors and whether they can tackle mildew effectively. Meanwhile the participating company is looking into whether the candidates are suited to mass production and whether they stay in one piece between production and application in the field. If a natural enemy passes all these tests, we will have a promising biological pesticide for mildew.

SUPERNEMATODE

But then comes the next test: the one for market access. A consultancy bureau with a knowledge of the registration process and legislation on biological crop protection is advising Köhl on which candidates are likely to get through the application procedures relatively easily. Using parasitic wasps to tackle aphids, for instance, requires a relatively straightforward risk analysis, but admission procedures for a fungus require a risk analysis on a par with that for chemicals.


The Bicomex project runs until the end of 2017, by which time Köhl hopes to have a biological treatment for mildew. European colleagues of his are working meanwhile on a 'supernematode' that can control the destructive maize stalk borer. In this case, the researchers are going to 'upgrade' the useful nematode through genetic breeding.

Besides this search for strong natural enemies of a pest, Köhl is interested in another

form of biological crop protection in which the natural diversity in an ecosystem is used as a buffer against diseases and pests. 'Through the new molecular techniques we are getting a clearer and clearer picture of the microbiome of the leaf or around the roots. If we can find out all the functions of the bacteria, fungi, viruses and nematodes in a community of this kind, it will open up all kinds of new possibilities. I expect that with this approach we can strengthen ecosystems' resilience to pests.' The knowledge will not result in a product, as in the case of biological crop protection, but in guidelines or a planting scheme, expects Köhl.

BREEDING FOR RESISTANCE

Biological crop protection currently accounts for only 3.5 percent of the total; there are still no biological alternatives to the most widely used pesticides. But the bio-control companies are growing by an average of 16 percent per year, and are professionalizing fast, says the researcher. Many chemical companies have started investing in biological crop protection as well, by taking over producers of biological products for example.

Progress has also been made in breeding for resistance, says Fresco. 'Great strides have already been taken using classic breeding techniques, such as building resistance to stripe rust into wheat varieties. But now that an aggressive strain of this fungus has turned up, resistance can easily be built in using the new Crispr-Cas technique, which alters the plant's genome with great precision. I think this technique also paves the way for resistance breeding of crops which are of less economic value, such as cassava and bean species in Africa. This increases harvest security and reduces dependence on pesticides. Once again, science is the key to success, but then we do have to have a support base in society.' 

EXHIBITION ON PLANT DISEASES

The Forum library has created an exhibition about plant diseases to mark the 125th anniversary of the Royal Netherlands Society of Plant Pathology (KNPV). On display are unusual books by Hugo de Vries and Jan Ritzema Bos and unique drawings by artists such as Harmen Meurs, Ben van Londen and Suzon Beynon. The exhibition runs from 11 April to 7 October 2016 and is open Monday to Friday from 9.00 till 13.00 hours.



SPECIAL FESTIVITIES

On King's Day, 27 April the Dutch dress up in orange and sit on blankets on streets and in parks selling jumble. Just over a week later, on the 5th of May, there are big music festivals in several cities, including Wageningen. What are the distinctive festivities in other countries?

text Twan van der Slikke



Leonardo Medina Santa Cruz



Master's student of Environmental sciences from Mexico

'A big day in Mexico is Dia de Muertos (literally 'the Day of the Dead'), All Souls Day on 2 November. **On this day we celebrate the memory of our departed loved ones.** The schools don't

have classes and working people only have to work half a day. Some people, mainly in the South, make a party of it and go to a parade or festival. Others celebrate it more intimately and personally, remembering the dead and getting together with their family. An important feature of the celebration is the altar which we make for a specific person who has died. You put a picture of the person who passed away on the altar and add some of his favourite things. This can be a bottle of tequila, jewellery, flowers or a specific kind of bread. When I was in sixth grade I made an altar for my grandfather. I won the prize for the best altar in the school.'

Sarvarbek Eltazarov



Master's student of Environmental sciences, from Uzbekistan

'We have multiple celebrations every year, but one of the most popular and ancient national holidays is "Navruz", which means "new day". We celebrate it on the 21st of March,

the first day of spring, when all plants and trees blossom. The most memorable thing related to the Navruz celebration is visiting my grandparents when I was a child. They live 1000 km away from my home. **At Navruz many Uzbek families come together and prepare national dishes such as**

Sumalak and Kuk-Somsa. Sumalak tastes like molasses-flavoured cream of wheat, and is made of flour and sprouted wheat grains. Sumalak is cooked slowly over a wood fire, sometimes with the addition of spices.'

Shameem Parayil



Master's student of Food technology, from India

'Diwali is the festival of light. The festival signifies the victory of light over darkness, good over evil, or knowledge over ignorance.' It is celebrated

between the middle of October and the middle of November depending on the phase of the moon. Everyone is free on this day and the celebration starts early in the morning. People invite their family and friends, we wear traditional clothes, eat special dishes and do pujas. Pujas are a form of worship of the gods. In the evening we light a lot of firecrackers and there are diyas (lights) shining on housetops, outside doors and windows, around temples and other buildings in the streets. One of memorable moments I had during Diwali was the time I went to the nearest hill station with my parents and siblings. We had a picnic and in the evening we had a camp fire and enjoyed Diwali with a really good view of the city.'

Nathania Engelhardt



Master's student of Applied communication science, from Curaçao

'Curaçao celebrates the same holidays as the Netherlands, such as King's Day, but 2 July is Curaçao's own festival: *Dia di Himno i Bandera di Kòrsou*, or the Day of the Flag and



the National Anthem. **That is when Curaçao celebrates the first time the Island Council met, on 2 July 1951.** There are always various activities such as sports tournaments, parades and performances by bands. And there are always sales in the shops, so I often went shopping with my mother on that day. In the national parade, they have an eternal flame, just like the one for the Olympics. When I was little I was in the scouts and I was allowed to join the parade. Outstanding scouts get chosen to hoist the flag at the end of the parade. One year I was almost chosen to do it but I wasn't tall enough. The next year my brother got to do it.'

Sotiris Koutrotsyos



Master's student of Environmental Sciences, from Greece

'On the 25th of March we have a celebration with a double meaning. We celebrate the Greek revolution against the Ottoman Empire in 1821, liberation day, and the religious festival of the Annunciation. Because on this day the angel Gabriel told Mother Mary that she would give birth to Jesus Christ. **Liberation day is very important for the Greeks. We were under Turkish conquest for 400 years. This is the biggest scar on the Greek nation.** During Liberation Day a parade takes place through the main streets of all big cities and villages. The navy, army, military force, fire brigade and students all participate in this parade. The six young students with the best grades are allowed to walk in the first two rows of the parade and one may hold the flag. I was an excellent student for four years. From 14 to 17, I could march in the first two rows of the parade.'

Sasiwimon Siricharoen



Master's student of Plant sciences, from Thailand

'Every year on the traditional Thai new year we have a huge water fight. The celebrations are from 13 to 15 April, and it's called the Songkran festival. These three days are national holidays so everyone is free to celebrate these special days. April is one of the hottest months in Thailand so in the past people poured some water on each other for cooling. **Nowadays it turned into a big water fight!** People use water pistols and throw water on everyone, everywhere. I come from Bangkok and I used to celebrate Songkran on the Khaosan road. This is a popular place for tourist and backpackers. They closed the whole street and everyone who put a foot outside their house got wet. It is nice to see everyone enjoying the festival and feeling happy.' ®

Clockwise from left to right: Flag Day in Curaçao, Diwali in India, Dia de los Muertos in Mexico, Thai New Year, Independence Day in Greece and Navruz in Uzbekistan.

Where to go on 4 and 5 May?



On the 4th of May the Netherlands commemorates its war victims and on the 5th of May it celebrates freedom. There is a lot happening on those days, in Wageningen too. An overview of what's on.

text Ton van den Born photos Wageningen45



On the 5th of May 1945, the Netherlands was liberated from occupation by Nazi Germany. Ever since then, every year on that day – Liberation Day – the country celebrates its freedom and pays attention to present-day human rights abuses around the world. This is preceded by memorial ceremonies on the evening of 4 May, in which the Dutch remember their war victims from the World War 2 as well as later wars and peace missions. These ceremonies take place in many towns, including Wageningen (see programme), but the biggest is the National Commemoration on Dam Square in Amsterdam, attended by King Willem-Alexander and Queen Máxima. This ceremony is open to the public and is broadcast live on television from 18.45. On the Grebbeberg, a hill in Rhe-

nen near Wageningen, where battles were fought and a war cemetery is located, there is a big memorial service between 19.00 and 21.00 hours.

At 20.00 hours on 4 May two minutes' silence is observed throughout the Netherlands. Trains and buses stop, car drivers look for a carpark, sports matches are interrupted and (most) children sit silently in front of the television with their parents.

The next day, Liberation Day, is an official festival and a lot of people have a day off (see box). There are liberation festivals in 14 towns, and Wageningen is one of them. Wageningen is an

important location on this day because the capitulation treaty was signed here in Hotel De Wereld. ③



Wageningen Programme

4 May

SILENT PROCESSION AND MEMORIAL SERVICE

The silent procession starts at 19.45 at the Johannes de Doperkerk on the Bergstraat, next to Hotel De Wereld. Before the procession, emeritus professor of Computer Science Maurinc Elzas will give a talk about what Remembrance Day means to him. The procession passes the Jewish memorial on the Walstraat, where Mayor Van Rumund will lay a stone on behalf of all Wageningen residents. Others can follow his example if they wish to. The procession ends at 20.00 hours at the War Memorial on the Costerweg, where two minutes' silence is observed and people can lay flowers around the monument.

CANDLES ON THE DYKE

From around 20.00 hours there are candles along the Grebbedijk. A long ribbon of light creates a special atmosphere. The idea behind it is that 'rivers and light connect people'. You can bring along a jam pot (painted if you like) with a tea light in it.

MEMORIAL CONCERT

This year the concert in the Grote Kerk on the market square will be given by the Gelderland Opera and Operetta Company (GOOG). Admission is free and 640 seats are available.

LIBERATION FLAME RELAY

In the night of 4-5 May, the Liberation flame is lit on 5 May Square. The flame is a symbol of national unity and of living in peace and freedom. Relay runners from Pallas '67 have been bringing the Liberation flame to Wageningen since 1967. Since 2011 they have brought it from Eindhoven in September, and the flame in the Remembrance Day monument in front of Ceres student society clubhouse is then re-kindled. In the night of 4-5 May runners from all over the Netherlands convene here to carry torches to their own cities.

5 May

FOULKES FESTIVAL

The Foulkes Festival is held in the university grounds and buildings at De Dreijen between 10.00 and 20.00. There is a display of historical war vehicles, weapons, uniforms and field hospitals, and exhibitions and re-enactments by various performers, bands and war museums from all around the Netherlands.

LIBERATION FESTIVAL

The Liberation Festival in Wageningen city centre starts at 12.30. There are 12 podia, each with their own style. The main podium at Duivendaal will feature Van Velzen and The Hibby GBs (from Kenya) as well as the Dutch singer and multi-instrumentalist Jett Rebel. The podium for world music on the Salverdaplein and the Latin Stage with rumba and salsa on the Walstraat are always popular with international students and staff. Rock, blues, techno and heavy metal can all be heard at the other podia. There is a dedicated podium for rising talent, and a children's festival in the Emmapark.

At 5 minutes to 5, the Liberation Festival devotes five minutes to remembering our freedom and the lack of freedom for others around the world. On the main stage, people who have lived under oppression tell their stories.

DJs Sunnery James and Ryan Marciano are the 'Ambassadors of Freedom' this year. This means they will go around the various Liberation festivals in the country. They'll be on Wageningen's main podium from 17.40 to 18.10.

More information (in Dutch) on bevrijdingsfestival-wageningen.nl under 'Programma'.



NATIONAL COMMEMORATION OF THE CAPITULATIONS OF 1945

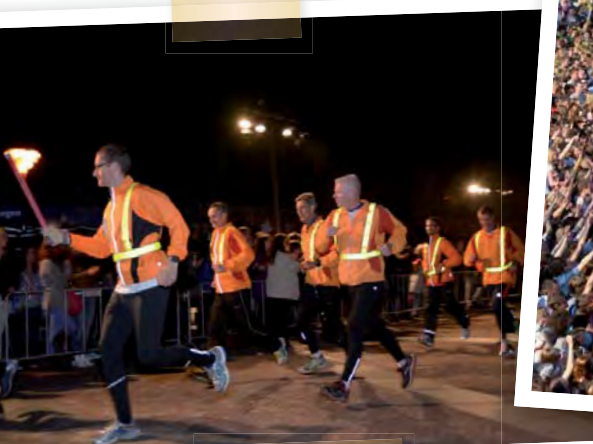
The musical programme will be interrupted at 15.00 hours for a ceremony on 5 May Square. This National Commemoration of the Capitulations of 1945, in which the sacrifices of the allies for the liberation of the Netherlands are remembered, will be attended this year by the minister of Defense Jeanine Hennis-Plasschaert. Schoolchildren release doves and the liberation procession starts here. The organizers expect 80 to 90 World War 2 veterans who, 71 years after liberation, are now at least 90 years old. Veterans from later military missions join the procession too and there is a fly-past of vintage planes. If you want to see this ceremony, get there in plenty of time.

PRACTICAL TIPS

Liberation Day is the busiest day of the year in Wageningen, with about 120,000 visitors. The city centre is completely closed to traffic so come by bus, bike or on foot. There are two guarded bike parking places (1 euro per bike). Admission to the festival itself is free but your bag is checked at the entrance: no glass, tins or plastic bottles are allowed. You pay for food and drinks with a pass that you buy and charge with credit at various sales counters (you can pay by cash or pin pass). Do count on long queues (that goes for the toilets too). If you think anyone will question your age you can get an 18+ wristband at the festival.

DAY OFF

This year all Wageningen UR staff get a day off on Liberation Day (5 May). That is because this year the day coincides with the Church festival of Ascension Day. Normally, only staff with a contract at the university get 5 May off every year. Staff on a DLO contract get 5 May off once every five years. 4 May is an ordinary working day; the Remembrance Day ceremony takes place in the evening.



POPCORN

The binturong, or bearcat, smells of popcorn. Researchers from Duke University have at last discovered why that is. The strong odour comes from a substance called 2-acetyl-1-pyrroline in the creature's urine. And it is exactly the same substance that makes popcorn smell like popcorn. The question is how the binturong creates that substance without frying anything. The scientists think it's the work of bacteria. Want to experience the smell? There are binturongs in Artis Zoo in Amsterdam, Wissel Zoo in Epe and the Zoo Parc in Overloon.

TOUCHY

People feel emotions if they touch robots in intimate places, found researchers at Stanford University. They had robots ask test subjects to touch various parts of their 'bodies'. A sensor on the person's finger recorded their level of arousal. And what emerged was: we hesitate to touch a robot's crotch. Funny, isn't it? Come to think of it, how would we feel if a robot touched us in the crotch?



SORRY (1)

What is the most effective way of apologizing when something goes wrong and it's your fault? Scientists at Ohio State University made a real study of this. The result: acknowledge your mistake and offer to repair the damage. It is not enough to say sorry, any more than it is to declare that you regret it or explain how it happened. And the worst thing you can do is to beg for forgiveness. Sorry, can't help that.

SORRY (2)

The 200th anniversary party thrown by Groningen student society Vindicat last year will long be remembered. The party led to a deficit of 300,000. To put that in context, the total cost of the party was 2.5 million. The society has launched a website (corpsfunding.nl) for crowd-funding to close the gap. Donations are not exactly pouring in: they currently amount to 600 euros. Sorry.

Stretching during lectures

Since the start of period 6, students taking the Advanced Statistics course have had an extra break in their lectures. Halfway through, the lecturer leads the class in a number of light physical exercises that are all about promoting alertness.

The initiative for this *Bottoms Up* project comes from De Bongerd Sports Centre, which got the idea from Finnish universities. Students are supposed to do exercises for their arms, neck, shoulders and back during the lecture. The exercises are demonstrated by the lecturer, who is trained in turn by fitness instructors.

Henri Ten Klooster from De Bongerd approached Evert-Jan Baker with the idea, and he tried it out as a pilot in his lectures. Baker is very enthusiastic. 'I held a small survey among the students and



PHOTO: SVEN MENSCHER

that showed that they like it. It distracts them for a moment, in a good sense.'

The students are indeed positive. 'It's a reset moment when you're a bit sleepy,' says one of the participants. Initially people were

still hesitant and some stayed in their seats but now everyone joins in.

Ten Klooster is positive about the pilot. 'We're now looking for other lecturers who also want to contribute to this project.' **lvk**



PHOTO: SVEN MENSCHER

Gosse is going fly fishing

The popular teacher Gosse Schraa has retired. A lot of students came to his farewell reception on 6 April in The Spot in Orion. Schraa spent 32 years working in the Microbiology group. As the person responsible for the microbiology and biochemistry course, he taught a

third of all Bachelor's students every year. In 2004 Schraa won the predecessor of the Teacher of the Year Award, and he was nominated several times after that. Now that he is retired, Schraa wants to spend more time on his hobby — fly fishing. **cn**

'Loan system is affecting vulnerable groups'

The introduction of the social loan system is putting off young people from vulnerable groups in particular, according to the ScienceGuide website on the basis of a draft report that is still confidential.

ScienceGuide says the report shows that the biggest falls in higher education intake are among young people from poor families, people whose parents did not go to university and people from ethnic minorities. A drop had already been announced in the number of new students in higher education, especially universities of applied science (HBO), in the first year after the loan system was introduced.

The minister, Jet Bussemaker, said she expected the measure would lead to a 'temporary dip'. In a letter to the Lower House, she commented briefly on the leaked news, saying that in previous years young people had anticipated the loan system by not taking a gap year after their exams. That led to a temporary bulge in the number of first-years.

But the minister admitted that 'groups that are vulnerable anyway' may find things more difficult. People with a disability — from dyslexia to muscular diseases — are slightly less likely to go to university, especially HBO, than in the past. Bussemaker does not want to draw any conclusions yet. The abolition of the basic grant also seems to be having more effect on people from poor families or without highly educated parents: they are less likely to go on to university than in the past. The minister writes that she wants to keep an eye on this.

The introduction of the loan system means that as of 1 September 2015, students no longer receive a basic grant worth about 290 euros per month. There is still a supplementary grant for students whose parents are not well off. The intention is that the annual savings of up to 1 billion euros will mainly be spent on education, for example in the form of 4000 extra lecturers.

© HOP en RR

Follow the discussion
on resource-online.nl.



EPISODE 70 MORTIERSTRAAT 14B <<

The story so far: Bianca's latest flirtation has fizzled out. But even though she's single again now, she can't complain of lack of interest.

Custard

The house was silent. No sound except for the ticking of the rain on the window. Bianca looked at her mobile: 3 o'clock in the morning. She sighed and turned over. She was tired but her brain wouldn't switch off. An idea was haunting her. An idea that excited her and scared her at the same time. Every night as she lay in bed, her mind ran through all sorts of possible scenarios. Whether she wanted it to do so or not.

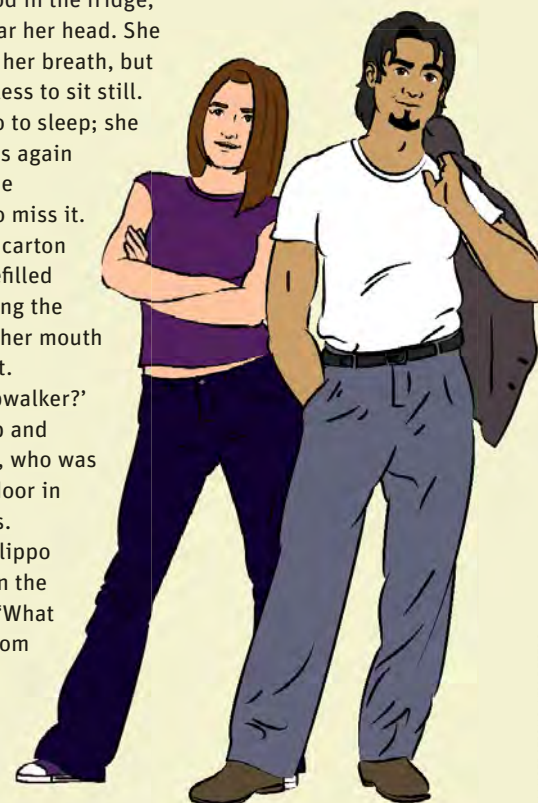
She got out of bed. The floor was cold for her bare feet. Quietly, so as not to wake up her housemates, she crept downstairs. Maybe it would help if she had something to eat. She sat on the sofa eating a bowl of yellow custard, the only food in the fridge, and trying to clear her head. She tried to focus on her breath, but she was too restless to sit still. She wanted to go to sleep; she had an early class again tomorrow and she couldn't afford to miss it. She grabbed the carton of custard and refilled her bowl, spooning the yellow stuff into her mouth without tasting it.

'What's up, sleepwalker?' Bianca looked up and stared at Filippo, who was standing at the door in his jogging pants. 'I can't sleep.' Filippo slumped down on the sofa beside her. 'What is keeping you from

sleeping?' he asked, putting his arm around her. 'I'm thinking of going abroad,' she said shyly, 'to Spain or maybe even South Africa.' 'But that's great! I didn't know you had it in you!'

'I'm just scared that it won't suit me,' she explained, 'that it will be disappointing. That I'll get homesick, or that...' Filippo shuffled closer. 'If you don't try you'll never know. I also hesitated a long time to come to Wageningen.'

A little flustered by his proximity, but grateful, Bianca looked at him. 'Sometimes you simply have to stand up to your fears,' said Filippo. And kissed her on the lips.



ILLUSTRATIONS: KIM PETERSE

Resource follows events at Mortierstraat 14B

>> PARTIES

The best parties according to Wageningen Uitgaans Promotie. Check www.wageningenup.nl for all parties.

**SSR-W - OPEN PARTY: OUTER SPACE**

Thursday 21 April from 22.00 to 05.00

The last party before revision week and exam week. Feel the freedom of the big wide universe before you shut yourself up in your room to swot. Let your hair down to a live show by Peter Loree, with a mix of Dutch singalongs, après ski and carnival music. Admission 3 euros.

VILLA BLOEM - I AM KING ROYAL STREET PARTY

Wednesday 27 April from 17.00 to 23.45

Celebrating King's Day is a must! You can start by sitting on a mat all day trying to flog your junk – or wandering around combing other people's for bargains. Then from 17.00 you are welcome at Villa Bloem for a cool street party. With DJs Baobab Music, MiniCulture and De

Staafmixers, live music from El Cheapo (ska, reggae and rock) and a flower crown-making contest. And enjoy cheese fondue festival style for 5 euros.

WAGENINGEN - LIBERATION FESTIVAL

Thursday 5 May from 12.30 to 02.00

Don't miss the biggest party in Wageningen! This year it falls on Ascension Day so it's a public holiday. The perfect chance to visit Wageningen. Bands include VanVelzen, Gers Pardoel, Jett Rebel, Memphis Maniacs, Zitakula, Het Feestteam, One Two Trio, Yes-R, Party Animals, Willie Wartaal, Dio, Vitamin X, Rats on Rafts and Big Jake and The Two-Timers. An incredible variety of sounds, so there's something for everyone. Check out bevrijdingsfestivalwageningen.nl

>> THE WORKS

COMBING ELEPHANT DROPPINGS FOR SEEDS

Who? Maayke Klaver, Master's student of Biology

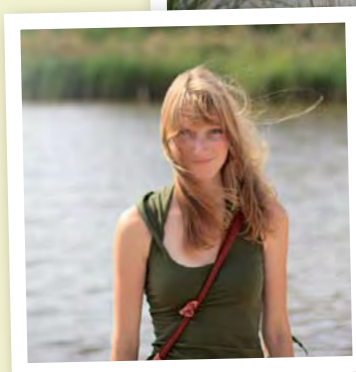
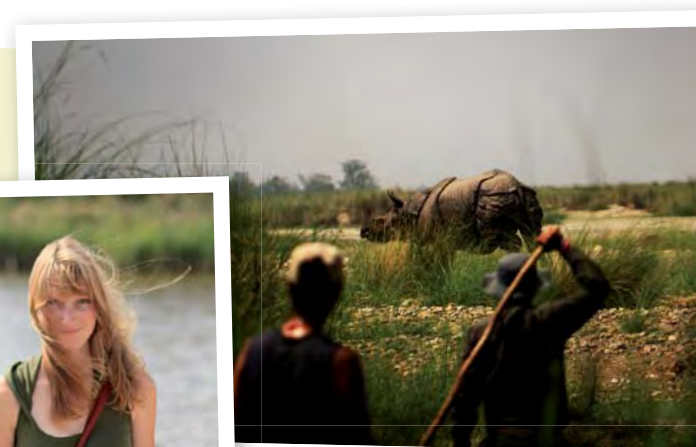
What? Research on the role of elephants in the distribution of the bael fruit

Where? Bardia National Park, Nepal

'The bael fruit (or Bengal quince) is a strange plant. The seeds are inside the fruit, but its skin is so hard that there doesn't seem to be a single animal that can eat it. So it is a mystery how the plant propagates itself. We had a hunch that elephants play a key role. And during a ride on a tame elephant in Nepal we saw that it did indeed pick up and eat a quince. An important question in my research was whether the seeds could still germinate in the elephant droppings. To find that out I had to collect a lot of bags of elephant poo.

In the many national parks in Nepal there are other unusual animals apart from elephants. One unforgettable moment was a hair-raising encounter with a rhinoceros. Because of the long grass we only saw it at the last minute. The rhino was already looking at us threateningly. Luckily our guide knew what to do. He banged hard on the ground with a stick several times and the rhino ran away. In spite of the danger I couldn't resist taking a photo, which was even used by National Geographic for an article!

Local people helped me a lot with my research. They are very nice but Nepalese society is very hierarchical. They clearly saw themselves as lower in rank than me. They wanted to do everything for me, which took



PHOTOS: MAAYKEKLAVER.COM

a lot of getting used to. After a while I got to know people better, which removed this barrier.

I was still in Nepal when the major earthquake hit. Luckily I was a long way from the epicentre. The university contacted me weekly after the quake, but the disaster didn't actually have much impact on my research. That was different for the local people who helped me, of course. They were very scared because they had family in the regions which were hard hit. The damage from the earthquake was very obvious. In the mountains I saw a lot of landslides and there were hardly any tourists around.' **DK**

MEANWHILE IN... <<

Meanwhile in... Canada

In the news: In the remote Canadian village of Attawapiskat, there have been 101 suicide attempts since September, 11 of them in one day. The village is located in a First Nations reserve. What is driving so many people there to such despair?

Commentary by Alexandra Drozdowska, student of Environmental Sciences

'When the colonists arrived in Canada, they made agreements with the First Nations. The indigenous population did not know what they were getting into and were severely disadvantaged. They were assigned small reserves to live in and they could not continue their way of life. The living conditions in these reserves are often poor. They are polluted by industry and the water is usually not drinkable. The children of the First Nations were forcibly taken away from their parents and sent to boarding schools. According to the Canadian government, that was necessary "to kill the Indian in the child." They were often abused. When they returned they had forgotten their native tongue and culture, and felt westernized. Many of them drifted to the cities. But they did not feel at home there either, because people look down on the indigenous population. This leads to alcohol addiction, substance abuse and depression. This group had children themselves, but broken homes usually lead to broken people. This is a vi-

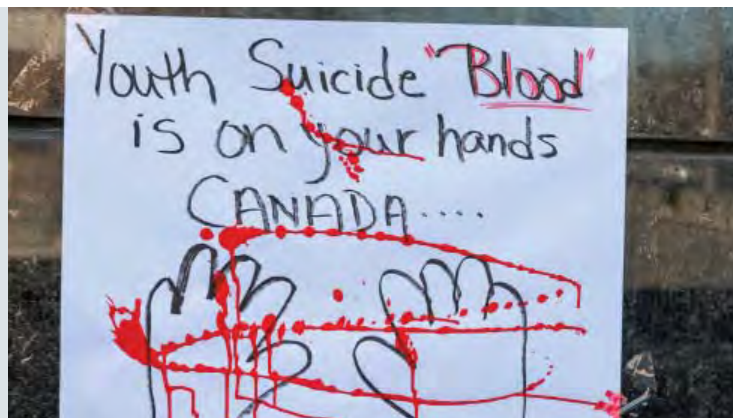


PHOTO: RMNOA357/SHUTTERSTOCK.COM

cious circle which this community is trapped in. The last boarding school closed in 1996 and the government offered formal apologies in 2008. Yet it is still a deep wound. Currently, there is the 'Idle No More' movement, which is dedicated to stopping the legislative and social subordination of the indigenous population. The government is trying to improve the situation too. At last there is funding for mental health care and for clean drinking water. But until real improvements are visible, I have my doubts. After all, the politicians have been talking about this for many years. During carnival many people dress up as Indians. People do it for fun, but they do not live with the stigma that the First Nations live with. I think it would be better if people stopped dressing up like Indians. First Nations will then not feel they are a joke.' **LdP**

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Wageningen UR Library Courses and demos

19 May	09.00-12.30 hr	Working with EndNote
23 May	09.00-17.00 hr	Data Management Planning
24 May	12.30-13.00 hr	EndNote Demonstration Session
24/25 May	09.00-17.00 hr	Adobe InDesign Essential Training

Venue: Forum Building

For contact and information
www.wageningenUR.nl/support-training
E msu.library@wur.nl



WAGENINGEN UR
For quality of life

Forum Irregular Opening Hours May 2016

	2016	The Building	The Library	Student Desk IT Service Point	WURshop	Restaurant	Grand Café	Wageningen in'to Languages
Sunday	1 May	9 am - 7 pm	9 am - 7 pm	Closed	Closed	Closed	Closed	Closed
Monday	2 May	8 am - 12 am*	8 am - 12 am*	12 pm - 2 pm	9 am - 4.30 pm	10 am - 2 pm 5 pm - 7 pm	8 am - 5 pm	9 am - 5 pm
Tuesday	3 May	8 am - 12 am*	8 am - 12 am*	12 pm - 2 pm	9 am - 4.30 pm	10 am - 2 pm 5 pm - 7 pm	8 am - 5 pm	9 am - 5 pm
Wednesday	4 May	8 am - 12 am*	8 am - 12 am*	12 pm - 2 pm	9 am - 4.30 pm	10 am - 2 pm 5 pm - 7 pm	8 am - 5 pm	9 am - 5 pm
Thursday Ascension/Liberation Day	5 May	8 am - 11 pm	Closed	Closed	Closed	Closed	Closed	Closed
Friday	6 May	8 am - 11 pm	8.30 am - 5.30 pm	Closed	Closed	Closed	11.30 am - 1.30 pm	9 am - 5 pm
Saturday	7 May	10 am - 6 pm	10 am - 6 pm	Closed	Closed	Closed	Closed	Closed
Sunday	8 May	10 am - 6 pm	10 am - 6 pm	Closed	Closed	Closed	Closed	Closed
Friday	13 May	8 am - 11 pm	8 am - 10 pm	9 am - 1 pm	9 am - 2.30 pm	Closed	Closed	9 am - 5 pm
Saturday	14 May	10 am - 6 pm	10 am - 6 pm	Closed	Closed	Closed	Closed	Closed
Whit Sunday	15 May	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Whit Monday	16 May	10 am - 6 pm	10 am - 6 pm	Closed	Closed	Closed	Closed	Closed

* Attention 12 am is midnight

During working hours, the building is open to the public. After working hours, entrance is only possible with a WUR card.


WAGENINGEN UR
For quality of life

Orion Irregular Opening Hours May 2016

	2016	The Building	Bike basement	Restaurant	The Spot
Sunday	1 May	Closed	Closed	Closed	Closed
Monday	2 May	8 am - 6 pm	8 am - 10 pm	11.30 am - 1.30 pm	8 am - 10 pm
Tuesday	3 May	8 am - 6 pm	8 am - 10 pm	11.30 am - 1.30 pm	8 am - 10 pm
Wednesday	4 May	8 am - 6 pm	8 am - 10 pm	11.30 am - 1.30 pm	8 am - 10 pm
Thursday Ascension Day/ Liberation Day	5 May	Closed	Closed	Closed	Closed
Friday	6 May	Closed	Closed	Closed	Closed
Saturday	7 May	Closed	Closed	Closed	Closed
Sunday	8 May	Closed	Closed	Closed	Closed
Friday	13 May	8 am - 6 pm	8 am - 6 pm	11.30 am - 1.30 pm	8 am - 4 pm
Saturday	14 May	Closed	Closed	Closed	Closed
Whit Sunday	15 May	Closed	Closed	Closed	Closed
Whit Monday	16 May	Closed	Closed	Closed	Closed


WAGENINGEN UR
For quality of life

Leeuwenborch Irregular Opening Hours May 2016

	2016	The Building	Coffee Bar/ Restaurant	The Library
Sunday	1 May	Closed	Closed	Closed
Monday	2 May	7 am - 10.30 pm	8 am - 5 pm	8.30 am - 6 pm
Tuesday	3 May	7 am - 10.30 pm	8 am - 5 pm	8.30 am - 6 pm
Wednesday	4 May	7 am - 10.30 pm	8 am - 5 pm	8.30 am - 6 pm
Thursday Ascension Day/ Liberation Day	5 May	Closed	Closed	Closed
Friday	6 May	7 am - 10.30 pm	9.30 am - 3 pm	Closed
Saturday	7 May	8 am - 5.30 pm	Closed	Closed
Sunday	8 May	Closed	Closed	Closed
Friday	13 May	7 am - 10.30 pm	8 am - 5 pm	8.30 am - 5 pm
Saturday	14 May	8 am - 5.30 pm	Closed	Closed
Whit Sunday	15 May	Closed	Closed	Closed
Whit Monday	16 May	Closed	Closed	Closed

After 6 pm entrance is only possible after registration at the reception desk.


WAGENINGEN UR
For quality of life

Announcements

Student Council election – lists of candidates

On 04 May 2016 the Student Council Election Committee will publish the lists of candidates. Students who are entitled to vote, will receive an e-mail from WebElect verkiezingen (info@webelect.nl) about the publication of the candidate lists. From 04 May 2016, students will know who might represent them in the Student Council during next academic year. The lists of candidates will also be available for inspection at the office of the Secretary of the Student Council, or via the intranetpage of the Student Council. Any person concerned may lodge a notice of objection to the validity of a published candidate list until 12 May 2016 inclusive, with the Secretary of the Student Council, Hermijn Speelman, Droevendaalsesteeg 4 (Room B.103), P.O. Box 9101, 6700 HB Wageningen.



PHD party or inauguration?

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WEP is looking for board members 2016-2017

Join the board of Wageningen Environmental Platform (WEP), and stimulate students in greening their behaviour and lifestyle by organizing activities, discussions and workshops and by promoting local initiatives. Application before 15 May: wep@wur.nl.

WAGENINGENENVIRONMENTALPLATFORM.NL

RUW Foundation: Summer excursion (4-12 July) Cloughjordan Ecovillage, Ireland & Bristol (UK)

Theme: 'Shades of Green – What is your Colour?' To understand how different views on sustainability play out in practice, we'll compare the rural green community in an eco-village in Ireland and the urban green community in Bristol. Deadline registration: 1 May.

WWW.STICHTINGRUW.NL

Wanted: synchronized swimming trainers

The synchronized department of Veenendaal swimming club is looking for trainers. If working with young girls and the combination of music and swimming appeal to you, email wies.vullings@wur.nl.

VZCVEENENDAAL.NL/SYNCHRO

agenda

Tuesday 26 April, 9.00-18.00 3RD WAGENINGEN PHD SYMPOSIUM 'DIVERSITY IN SCIENCE'

Pitch & Panel and thematic sessions with presentations by PhD candidates from each Graduate School. Keynote speakers: Prof. Arthur Mol (Rector Magnificus) and Prof. Scott Page (Uni-

versity of Michigan, USA). This day is your chance to expand your network and promote your research and ideas. Venue: Orion Building

WWW.WAGENINGENUR.NL/PHDCOUNCIL

Friday 29 April, 9.00 – 18.00 SYMPOSIUM INTERNATIONAL LAND AND WATER MANAGEMENT

Organized by Nitroca study association. Theme: 'Closing the water cycle with a socio-technical approach'. Lectures and workshops on recycling water and related themes, with speakers from the business world, the government and the university. Chaired by our national water ambassador Brenda Brouwer. Venue: Lumen (100). Register: bedrijvenscommissie.nitocra@wur.nl.

WWW.NITOCRA.NL

Friday 29 April, 13.30 – 17.30 CASE STUDY AFTERNOON FOR INTERNATIONAL LAND AND WATER MANAGEMENT

A challenging case study afternoon in which you work in a group to tackle various land- and water-related themes. The cases are presented and evaluated by professionals from industry, government and research departments. Use this afternoon to orientate yourself to the professional field. The afternoon ends with drinks. Venue: Lumen (100) Register: bedrijvenscommissie.nitocra@wur.nl, Facebook: ILW Symposium.

Deadline for submissions: one week before publication date (max. 75 words)
Email: resource@wur.nl

colophon

Resource is the magazine and news website for students and staff at Wageningen UR. Resource magazine comes out every fortnight on Thursday.

Address

New address
Droevendaalsesteeg 4,
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(Atlas, building 104, bode 31).
POBox 409 6700 AK Wageningen.

Secretariat: Thea Kuijpers,
resource@wur.nl, 0317 484020
Website: www.resource-online.nl
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Editorial staff

- Edwin van Laar (editor-in-chief)
edwin.vanlaar@wur.nl, 0317 482997
- Lieke de Kwant (editor)
lieke.dekwant@wur.nl, 0317 485320
- Roelof Kleis (ecology, social sciences, economy),
roelof.kleis@wur.nl, 0317 481721
- Linda van der Nat (students, education)
linda.vandernat@wur.nl, 0317 481725
- Rob Ramaker (nutrition, fisheries),
rob.ramaker@wur.nl, 0317 481709
- Albert Sikkema (plant sciences, animal sciences, organization)
albert.sikkema@wur.nl, 0317 481724

Others who work on Resource

Guy Ackermans, Jeroen Bok, Ton van den Born, Alexandra Branderhorst, Daniël Dreadson, Stijn van Gils, Hoger Onderwijs Persbureau, Milou van der Horst, Amy Jansen, Anja Janssen, Liza van Kapel, Iris Keizer, Jan-Willem Kortlever, Kito, Hilde de Laat, Django Kaasschieter, Sven Menschel, Carina Nieuwenweg, Gienke Nijhof, Rik Nijland, Onnika van Oosterbosch, Derek Pan, Kim Peterse, Lucas du Pré, Simone Rijlaarsdam, Henk van Ruitenbeek, Kristina Simonaityte, Twan van der Slikke, Joris Tielens, Pascal Tieman, Kees van Veluw, Didi de Vries, Veronika Wehner, Rob de Winter, Remo Wormmeester

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Geert-Jan Bruins

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Advertising

External: Bureau van Vliet, T 023-5714745
m.dewit@bureauvanvliet.com
Internal (reduced rate): Thea Kuijpers,
resource@wur.nl. T 0317 484020

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>>TYPICAL DUTCH



Road safety for toads

One Sunday I had a cycling trip around Wageningen. After one year staying here, I already knew my way around but I still decided to join the trip. It was a smart decision, actually. The weather was beautiful and I made some new friends. However, the most interesting part of the trip was when we visited the foot of the Wageningse Berg, where I learned about the way the Dutch take care of toads.

I had already been there several times, so I didn't pay attention to the tour guide's introduction until he pointed at the barrier near the road and asked us why it was installed there. It was a green metal barrier approximately 30 centimetres high and it is located between the road and the hill. We all gave it a try but no one could give the correct answer. The guide explained that the barrier was designed to protect toads. During the winter toads reside in the bushes on the hill. However, when the spring comes they jump out of their shelters, cross the road and go to the river beyond. In the process, they may be run over by cars. So Dutch people constructed tunnels under the road and they use the barrier to prevent the toads from jumping straight onto the road. After meeting the barricade, the toads will search for another way to get to the river, find the tunnels and survive. That day I realized that Dutch people not only are very precise but also take good care of their natural environment. Even tiny creatures like toads are well protected. This is a wonderful effort by the Dutch and it may be why they have a fantastic environment today.  Hieu Nguyen Ba, MSc student of Animal Sciences, from Vietnam

Dutch people not only are very precise but also take good care of their natural environment

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