news

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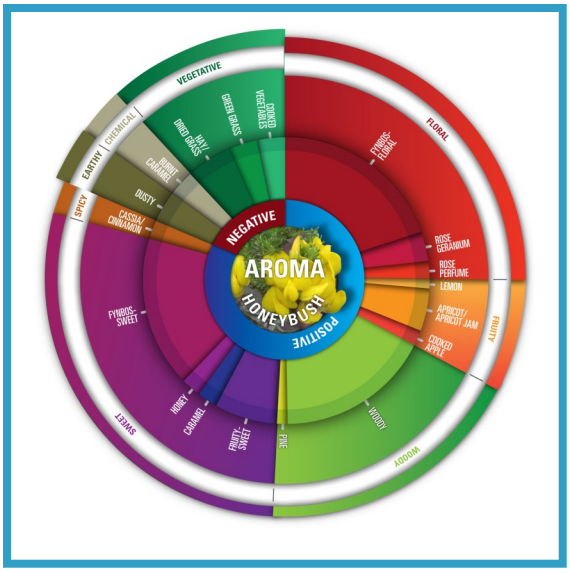
food science

Updating the generic honeybush sensory wheel –

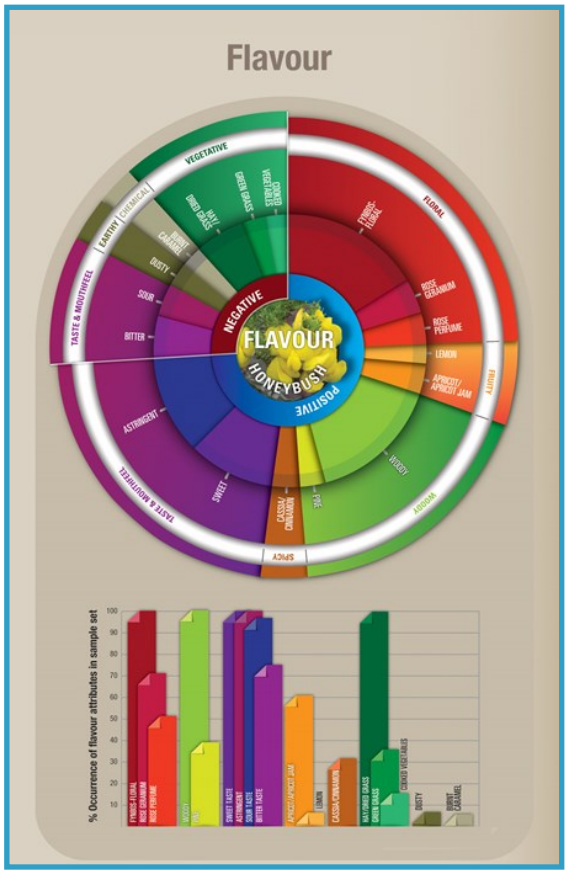
the Department of Food Science, SU and the ARC keep the wheels rolling

A new version of the generic *honeybush sensory wheel* was recently released at the annual general meeting of the South African Honeybush Tea Association (SAHTA), the representative body that co-ordinates activities in the honeybush industry. Honeybush, a South African herbal tea, is produced from different *Cyclopia* species, some of which is mostly harvested in the wild, while other species are cultivated commercially.



The validation and revision of the generic sensory wheel for honeybush was conducted by Lené Erasmus, is forming part of her MSc studies at the Department of Food Science, Stellenbosch University. This study formed part of a larger research project on honeybush with Prof Lizette Joubert of the ARC Infruitec-Nietvoorbij as project leader.

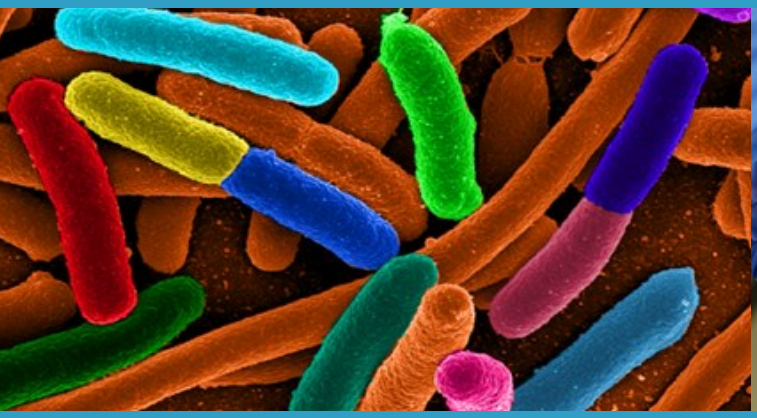
For the development of the revised honeybush sensory wheel a total of 150 samples of the species used as herbal teas (i.e. *C. genistoides, C. maculata, C. subternata* and *C. longifolia),* was sourced. These samples differed in season, climate, producer, processing conditions and/or geographical area, primarily to try and capture maximum sample variation. To capture more information two wheels were developed, one for *aroma* and one for *flavour, taste and mouthfeel* as illustrated in accompanying figures. As with the previous sensory wheel for honeybush, released in 2012, the new sensory wheel consists of three tiers. The inner tier represents the two quality divisions, i.e. the positive and negative attributes. The outer tier contains the primary, "broad-based" attributes, whereas the middle tier contains the specific, secondary attributes. A new addition to the revised wheel for honeybush is that the relative average intensity of each of the specific attributes is indicated on the wheel by varying the width of each "slice". Each wheel is also accompanied by bar graphs indicating the percentage occurrence of the respective attributes in the sample set tested. Addition of relative intensity and occurrence of an attribute give an indication of their importance within the honeybush industry.

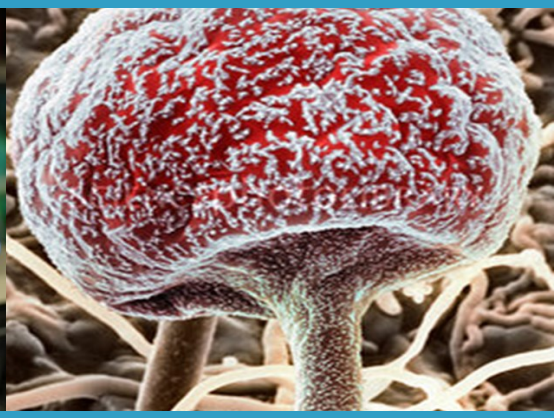


Sensory wheels are widely used by the global food and beverage industry to describe and discriminate amongst products, especially in quality control, product development and research. They can also be used as a viable communication tool. This is especially relevant for the South African export industry where it is important to develop new international markets for honeybush tea.

By Nina Muller and Lené Erasmus, Department of Food Science, Stellenbosch University, and Lizette Joubert, Agricultural Research Council (Infruitec-Nietvoorbij), Stellenbosch

Inaugural lecture @ FOOD science





Prof Pieter Gouws (Food Science) and Maret du Toit (Viticulture & Oenology) both from the AgriSciences Faculty delivered their inaugural lectures on 12 February 2015 at the Food Science building.

Foodborne diseases are widespread and a growing public health problem worldwide and it is imperative to develop new applications for the detection and control of unwanted bacteria in food. This was one of the viewpoints of Prof Pieter Gouws from the Department of Food Science at Stellenbosch University in his inaugural lecture.

Follow these links to read more about Prof Gouws's inaugural lecture as published on the SU website.

http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=2215

PieterGouws.pdf

The question remains: **'Will the MICROBE have the last word'?**

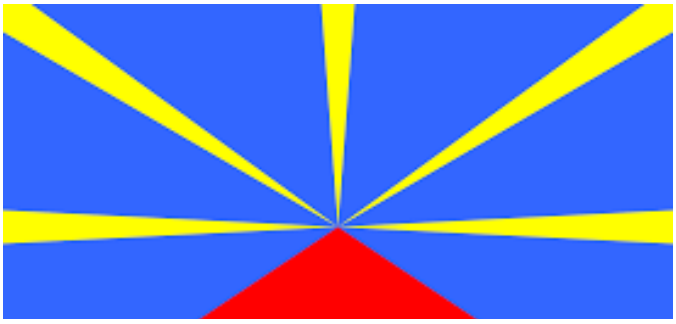
Photo left: Proff Eugene Cloete, Vice-Rector: Research and Innovation, Pieter Gouws, and Danie Brink, Acting Dean of the Faculty of AgriSciences, at the inaugural lecture.

Photo right: Prof Gouws with his wife Lizelle and daughters Michelle & Lisa. (**Photographer**: Anton Jordaan)


Reunion - a French overseas island in the midst of the Indian Ocean

After a visit by the Regional Director of CIRAD for Reunion and Mayotte, Dr Gilles Mandret to the Faculty of AgriSciences, researchers of Stellenbosch University and the Universities of Fort Hare and Pretoria were invited by Dr Mandret to meet with CIRAD scientists in Reunion. The main aim of the visit was to investigate possible collaborations to the benefit of both Reunion and South Africa. Due to the success of this visit Prof Marena Manley, Department of Food Science, is currently planning collaborative projects with Dr Fabrice Davrieux investigating non-destructive spectroscopy and imaging techniques for the study of food microstructure. Apart from exceptional research facilities at CIRAD, the island offers a volcanic desert, beaches, tropical forests and cirques … ready to be explored.

From left to right: Voster Muchenji (Fort Hare University), Elodie Arnaud (visiting scientist Animal Sciences), Paul Cronjé (Horticultural Sciences), Marena Manley (Department of Food Science), Louw Hoffman (Meat Science SARChI Chair); Peter Thompson (University of Pretoria) and Lindie Rose (Department of Plant Pathology). Cirque de Mafate in the background.

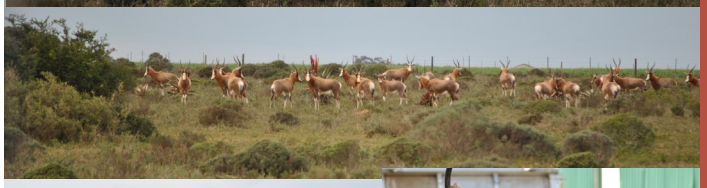


Playing in the work field …

The Departments of Food Science and Animal Science work closely on a number of projects on Game meat. It is always the highlight of (most) students when they go on a hunting expedition to gather samples. Students are also taught to hunt and slaughter professionally. The weekend of 17 June was one of those …

Proff Louw Hoffman (Animal Science) and Pieter Gouws (Food Science) joined the students on a hunt at the University's experimental farm, Brakkekuil near Witsand in the Southern Cape.

An experience like this is priceless and the memories will last a lifetime!



Produkontwikkeling MEI 2015

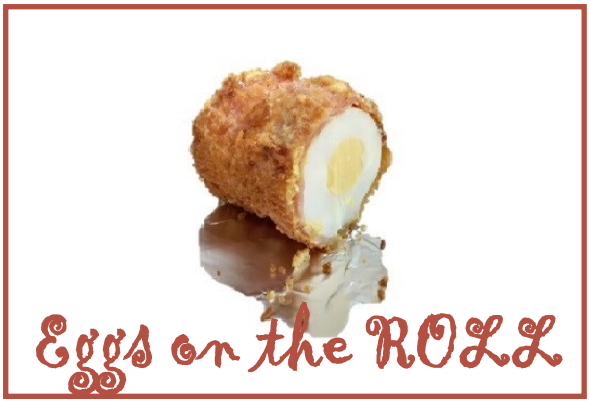
Winners of the SAAFoST prize for 'best product & presentation'

Bal Bars

Pop-ins

Winners of the SAAFoST prize for product with the 'best commercial potential' as well as the InnovUS prize.

Produkontwikkeling MAY 2015 Product development



Being creative through SCIENCE … that is how we roll.

Innovative mouth-watering treats were sampled when final year Food Science students presented new products they developed as part of their Food Science 478 course.

The 42 students participated in seven teams. They presented their newly developed products on 12 May to University staff, students, sponsors and members of the food industry.

In developing their products, the students had to take some of the major global food trends for 2015 into consideration, and fit into a well-defined product category. The products had to be microbiologically safe and have a shelf life of at least a week under specific storage conditions.

The attendees and judges were impressed by the innovative way in which the students applied their scientific training to develop the new products. Among the honourary judges were Catherine de Villiers, wife of the new SU rector Prof Wim de Villiers. She also presented prizes to the winning groups.

Group 5 walked away with the SAAFoST prize for the best product and presentation. Their Mocha Melties is a soft centred espresso shot encapsulated in layers of dark and milk chocolate.

Group 4 received the SAAFoST prize for the product with the best commercial potential for their high protein, toastable meal, Pop-In's.

Mrs Catherine de Villiers presenting the SAAFoST prize to group 4.

Names of the group members (from left to right on the photo's on previous pages)

Mocha Melties: Celeste Mapling, Nicole Pope, Kirstin Mapstone, Ghamzah Patel, Corani Jankowitz, Shannon Howell.

Bal Bar: Alexia Maritz, Kate O'Meara, Carin-Marie Engelbrecht, Cenette Bezuidenhout, Taryn Harding, Fundeka Ndyoki.

Pop-ins: Paula Louw, Danie Haumann, Sumaré Marais, Lauren Todd, Megan Twentyman-Jones, Megan Kleyn.

On Root: Jani Smit, Jade Tobin, Nicholas Grobbelaar, Lauren Martin, Eloise Kellerman, Louisa Fritz.

Banzoodles: Gladness Setlhare, Gilan Saad, Marli Marais, Callum Gray, Manzi Sishi, Jessie Potgieter.

Crunch Latté: Christine van Niekerk, Anel van Zyl, Mardi Louw, Melishia Govender, Corli Ras, Michaela Lee.

The Brain Koeppen award went to Sarah Erasmus

Sarah Erasmus, PhD student at Food Science, has been granted the prestigious Brian Koeppen Memorial Scholarship to the value of R30 000 for 2015. This award is granted annually to one postgraduate student by the South African Association of Food Science and Technology (SAAFoST) and is the most competitive award within SAAFoST. The scholarship honours the late Professor Brian Koeppen, a world-renowned food scientist and Head of the Department of Food Science, Stellenbosch University (SU) until his death in 1980.

Sarah was granted the scholarship based on the research she is performing. Her MSc was upgraded to a PhD in 2015 and involves research based on region of origin lamb such as Karoo lamb. The MSc research focused on comparing the sensory and chemical profiles of lamb meat in order to determine whether the characteristic diet, linked to specific regions, have a significant influence on the sensory profile of South African lamb.

A more in-depth study into the sensory and chemical profile and the use of analytical tools for the authentication of region of origin lamb meat was outside the scope of the MSc-study and required further research at PhD-level.

Sarah Erasmus

Yes, they have something to smile about!

The South African Association for Food Science and Technology (SAAFoST) recently launched the SAAFoST Foundation which will administer all SAAFoST academic prizes, awards and bursaries in future.

In 2015, the SAAFoST Foundation will support 19 students studying Food Science and Technology at various tertiary institutions in South Africa. The Department of Food Science, SU is very proud that ten Stellenbosch Food Science students will be amongst the worthy recipients of SAAFoST support in 2015. The academic stars are: Celia Walters, Emma Phillips, Carin-Marie Engelbrecht, Kayla-Anne Jordaan, Christine van Niekerk, Kirstin Mapstone, Caroline Bursey, Stephanie Phelps, Alexandra Rust & Jani Bisschoff.

March 2015 GRADUATION

The main event of the March 2015 graduation for the Department of Food Science was Anina Guelpa's PhD.
The topic of her study : 'Maize endosperm texture characterization using the Rapid Visco Analyser (RVA), X-ray microcomputed tomography (µCT) and micro-near infrared (microNIR) specstroscopy'.
'Maize is a staple food in many countries. In South Africa it is industrially processed into maize meal using dry-milling. A maize kernel of desired hardness, often measured as kernel, is required for optimal yield and quality. X-ray micro-computed tomography was used to quantify kernel density as well as vitreous-to-floury endosperm ratio. These, in association with physical and indirect hardness measurement methods, could be used o accurately select maize hybrids with good milling quality. Methods such as microNIR spectroscopy and NIR hyperspectral imaging were illustrated to be effective as rapid, non-destructive methods of maize milling quality classification'.
Anina's supervisor for the study was Prof Marena Manley & Co-supervisors Prof P Geladi & Dr A du Plessis

During the same week five BSc Food Science and eight MSc Food Science degrees (of which two *cum laude*) were awarded. Adél Conradie Food Science 'resident', received her MSc in Natural Sciences.

MSc Food Sc

Altie Burger

Michelle de Kock

Ashley Hendricks

Madelize Kotzé

Esther Tanimowo

Amarachi Uchechukwu-Agua

Lené Erasmus *(cum laude)*

Kirstey Giddey *(cum laude)*

Graduation selfie with Madelize, Kirstey, Michelle, Ashley

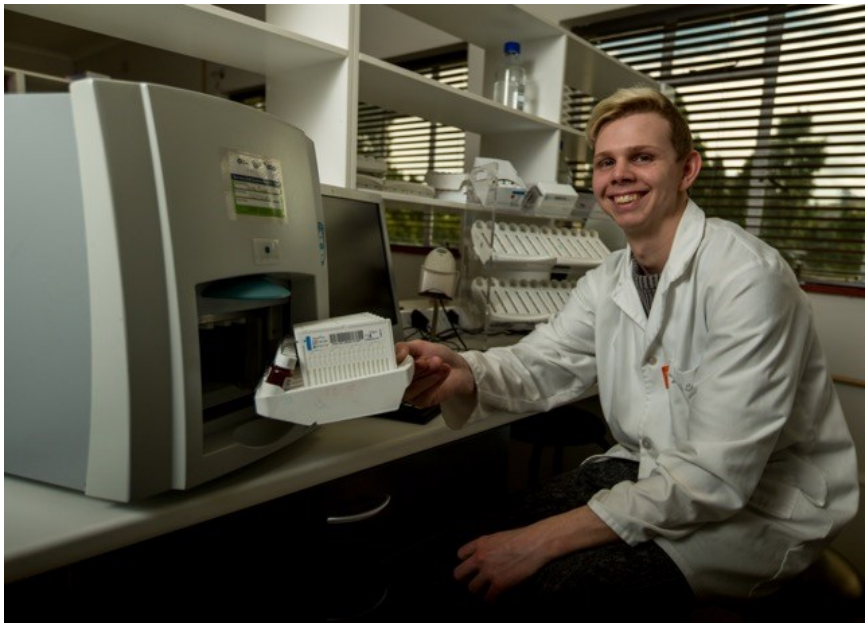
Photo: Adél Conradie en Lené Erasmus

Adél & Lené

BioMérieux sponsors state of the art equipment @ Food Science

BioMérieux specialises in Food Micro Laboratory Automisation (FMLA). The head office is based in Lyon France, where they have a manufacturing, research and training site. BioMerieux has sponsored the Department of Food Science, with two instruments, one for the rapid enumeration of quality indicators one for rapid pathogen detection to use within the department.

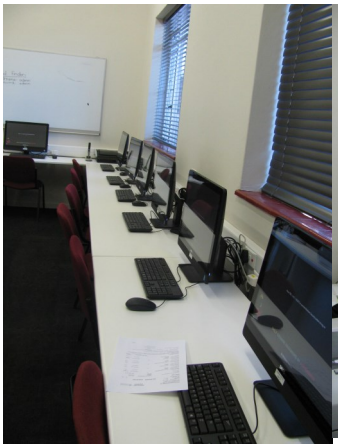
These instruments are respectively, Tempo and MiniVidas. The MiniVidas is used for the detection of pathogens in human and food products, environmental samples and primary production samples, whereas the Tempo system is used for the quantification of quality indicators in food products and environmental swabs. These systems automate testing and reduce the time required to analyse samples, replacing the conventional method of plating out.



The instruments are situated in the Food Microbiology Research Group (FMRG) lab of Prof Pieter Gouws at the Food Science building. These systems are currently used in Post-graduate studies but will also be used by the 4th year Food Science students when they have to perform microbial analyses on the products which they develop. These and many other BioMérieux instruments are used daily in industry by food producers and contract laboratories. As Department of Food Science we would like to thank BioMérieux for their contribution to our Department.

Photo: Zandré Germishuys, MSc in Food Science using the Biomérieux equipment.

Uitbreiding van rekenaarfasiliteit vir voorgraadse studente



Departement Voedselwetenskap is dankbaar teenoor US se NARGA afdeling vir die uitbreiding van ons voorgraadse rekenaarlokaal.

Met die groei wat ons tans in studentegetalle ondervind is die uitbreiding van 7 na 12 rekenaars 'n welkome toevoeging tot die Departement.

Paul Williams & Kate Sendin visited Umeå, Sweden

During the month of May I was fortunate enough to travel to Umeå, Sweden for a couple of weeks to work on my MSc project. For almost a decade, Stellenbosch University's Food Science Department has been collaborating with the Swedish Agricultural University. Together they have completed a number of projects regarding near infrared hyperspectral imaging of cereals. My project focuses on the automation of white maize grading, a process which is currently only performed manually.

I was privileged to work under the supervision of Prof Paul Geladi, a highly regarded chemometrician, who introduced me to the rather daunting world of multivariate data analysis. Furthermore, I was able to spend time with the developers of the Evince software that I use, who showed me ways of getting the most out of the programme.

Between lots of time in the lab, I was fortunate to have the full Swedish experience, including 24-hour sunshine, a reindeer braai, and wearing every item of winter clothing I own simultaneously – in summer! Being my first visit to Scandinavia, I was blown away by the natural beauty all around me. This trip was stimulating, opening my eyes to the field of Food Science and the greater scientific world. I greatly appreciate the opportunity made possible by my two supervisors namely Prof Marena Manley & Dr Paul Williams.




MATIES Open day 2015 OPEDAG

Studente en personeel het met groot entoesiasme op Saterdag 28 Februarie deelgeneem aan die US Opedag. Dit is 'n jaarlikse instelling waar voornemende studente en hul ouers geleentheid kry om Matieland te besoek en meer uit te vind oor hul toekomstige studiejare. 27 Februarie is die datum vir die 2016 US Opedag.

Sien jou daar!

Ons mooie Wendy Buys het op 8 Mei 2015 mev Beneke geword toe sy & Ruan by Haute Gabriere Franschhoek getroud is.

Our stars

Baie geluk aan Ilona en Gerrit Steenkamp met die geboorte van hul pragtige eersteling dogtertjie, Linja op 8 Junie 2015.

Brigitte en ‘n paar oud-Matie klasmaats (2002) het onlangs lekker saam gekuier met hul onderskeie krose. Die spannetjie staan egter steeds hul skoene vol in die Voedselbedryf.

Op die foto van links na regs:

Louise Human (Sadie): Technical Manager; Core Fruit

Christelle Marais (Kannenberg): Sustainable Development Specialist; SABMiller

Mariaan von Pressentin (van Kraayenburg): Food Safety Auditor; NSF Africa

Brigitte du Preez (von Pressentin): Research/Sensory Scientist; Stellenbosch University