



Prof Buys is Hoof van die Departement Voedselwetenskap in die Fakulteit Natuur- en Landbouwetenskappe. Die onderliggende tema van al haar navorsing is die verlenging van die rakleefyd van inheemse produkte ten einde te voldoen aan die veranderende behoeftes van ontwikkelende verbruikers in Afrika suid van die Sahara en ontwikkelde verbruikers wêreldwyd. Aanvanklik het sy haar toegelê op die bestudering van die laktoperoksidase-sisteem, wat nie alleen vir die onverhitte pasteurisering van melk in landelike gebiede gebruik word nie, maar ook aangewend kan word om die gehalte en veiligheid van gevorderde produkte op biotegnologiese vlak te verbeter. Dit het daartoe gelei dat sy 'n belangstelling ontwikkel het in die aanpassingsmeganismes van bakterieë tydens die prosessering van voedsel en in voedselomgewings in die algemeen. Sy het ook die suurweerstand van *E. coli* O157:H7-variante bestudeer.

Ná sporadiese voorvalle van kontaminasie van UHT-melk in Suid-Afrika, het prof Buys bakterieë ondersoek wat bederwing van UHT-melk veroorsaak en hoe dié bakterieë by die UHT-proses aanpas. In hierdie studie het sy die vlak van kontaminasie met *Bacillus sporothermodurans* in Suid-Afrika bepaal en probeer om meganismes te identifiseer waardeur die spore van *B. sporothermodurans* vernietig word ten einde metodes te ondersoek om hierdie spore sonder oormatige verhitting onaktief te maak.

Vir prof Buys was 'n hoogtepunt van haar loopbaan die vyf maande navorsingsverlof wat sy in 2011 aan die Universiteit van Valencia in Spanje kon deurbring.

Sy is 'n aktiewe lid van die Suid-Afrikaanse Vereniging vir Voedselwetenskap en -tegnologie, die Suid-Afrikaanse Vereniging vir Suiweltegnologie en die Internasionale Genootskap vir Voedselveiligheid (International Association for Food Protection – IAFP). Een van haar belangrike publikasies (mede-outeur F T Tabit) is "The effects of wet heat treatment on the structural and chemical components of *Bacillus sporothermodurans* spores", in die *International Journal of Food Microbiology*, 140 (207-213). Prof Buys het 'n C2-gradering van die NNS.

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Prof Buys is Head of the Department of Food Science in the Faculty of Natural and Agricultural Sciences. The unifying theme in her research has been the extension of the shelf life of indigenous products to meet the changing needs of developing consumers in sub-Saharan Africa and of developed consumers worldwide. She initially studied the lactoperoxidase system, which is not only used for cold pasteurisation in rural areas, but can also improve the quality and safety of advanced products on a biotechnological level. She then became interested in the adaptation of bacteria during processing and in food environments. She also investigated the acid resistance of *E. coli* O157:H7 strains.

After sporadic outbreaks of contamination had occurred in South African UHT milk, Prof Buys investigated spoilage bacteria in UHT milk, the bacteria's adaptation to the UHT process and to the milk environment. The study determined the level of *Bacillus sporothermodurans* contamination in South Africa and tried to understand the mechanism of *B. sporothermodurans* spore destruction in order to investigate ways of inactivating these spores without excessive heating.

A highlight of Prof Buys's career was the five months' research leave in 2011, which enabled her to work at the University of Valencia in Spain.

She is active in the Food Science and Technology Society of South Africa, the South African Society of Dairy Technology and the International Association for Food Protection. A paper, co-authored with F T Tabit, 'The effects of wet heat treatment on the structural and chemical components of *Bacillus sporothermodurans* spores', which appeared in the *International Journal of Food Microbiology*, 140 (207-213), counts among her important publications. Prof Buys has a C2-rating from the NRF.

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Prof Buys ke Hlogo ya Kgoro ya Thutamahlale a Dijo ka Lefapheng la Thutamahlale a Tlhago le Temo. Hlogotaba yeo e kopantšhago ya dinyakišišo tša gagwe e bile koketšo ya nako ya go dula di sa bole ya ditšweletšwa tša šetšo go fihlelela dihlokwa tšeo di fetogago tša bareki bao ba hlabologago ka Afrika ya Sahara e nnyane gomme o hlabolotše bareki go phatlalala le lefase. La mathomo o ithutile tsela ya proteini ya maswi yeo e sa šomišwego fela bjalo ka sebolayaditwatši maswing sa go tonya metsemagaeng empa e ka kgona go oketša boleng le tšhireletšo ya ditšweletšwa tšeo di tšwetšego pele mo maamong a theknolotši ya bophelo. Ke moka o ile a ba le kgahlego go tšhomišo ya dipakteria nakong ya kapeo le ka ditikologong tša dijo. O nyakišišitše gape le tatolo ya esiti go ditapišo tša kholi ya *E. coli* O157:H7.

Prof Buys o nyakišišitše pakteria ya tshenyoo ka maswing ao a fufuditšwego kudu go bolaya ditwatši, tirišo ya yona ka tshepetšong ya phufutšo ya maswi le go tikologo ya meetse morago ga go phulega mo e sego ga mehleng ka maswing ao a fufuditšwego a Afrika-Borwa. Thuto ye e dirile khwetšo ya tšhilafatšo ka twatši ya go bitšwa *Bacillus sporothermodurans* ka Afrika-Borwa le go leka go kwešiša mokgwa wa tshenyoo ya *B. sporothermodurans* go nyakišiša ditsela tša go fetša disele tša sepoore maatlalantle ga go fiša maswi kudu.

Ntlhakgolo ya mošomo wa Prof Buys e bile maikhutšo a go dira dinyakišišo dikgwedi tše hlano ka 2011 University of Valencia go la Spain.

O tšea karolo ka mafolofolo ka Mokgatlong wa Thutamahlale a Dijo le Theknolotši wa Afrika-Borwa, Mokgatlo wa Boditšhabatšhaba wa Maswi le Mokgatlo wa Tšhireletšo ya Dijo wa Boditšhabatšhaba. Gare ga diphatlalatšo tša gagwe tše bohlokwa go balwa ya "The effects of wet heat treatment on the structural and chemical components of *Bacillus sporothermodurans* spores" yeo e phatlaladitšwego ka go *International Journal of Food Microbiology* 140 (207-213). Prof Buys o na le maemo a C2 go tšwa go NRF.