

## MEDIA RELEASE

### UP-UKZN study investigates likelihood of farmers choosing compost made of human poop

University of Pretoria (UP) researchers lent their expertise to a recent study led by the University of KwaZulu-Natal and found that rural farmers in KwaZulu-Natal are open to buying and using compost made from human sewage as long as they can be sure that it is safe, affordable and works as well as other products on the market.

The researchers asked 341 farmers what influenced their choice of fertiliser or compost, and presented a compost made from human waste as a potential choice.

Dr Simon Gwara of the University of KwaZulu-Natal led the study, which was co-authored by Dr Damien Jourdain of UP's Department of Agricultural Economics, Extension and Rural Development. Dr Gwara called on UP researchers to assist with data analysis using a method called "choice experiments". These experiments allow researchers to understand consumer choices based on how much they value specific characteristics of products, explains Dr Jourdain, an expert in choice experiments and choice modelling.

The research team looked into whether farmers were concerned about the packaging of human compost, whether or not it was fortified with additional nutrients, and investigated potential health and safety risks.

"We found that farmers cared more about fortification and certification of human compost," Dr Gwara says. "Perceived health risks were a potential barrier to the use of compost in agriculture; therefore, certification would mitigate some of the safety concerns."

Overall, the findings suggest that faecal sludge management businesses and other entrepreneurs within the waste value recovery chain should create human compost products that are more acceptable to farmers. For example, human waste can be co-composted with other organic waste to ensure that it is fortified with the proper nutrients and minerals. It could also be sold as pellets in packaging that resembles other commercial composts so that it doesn't remind farmers of human waste.

Clear safety certifications can also be placed on the products to put farmers' minds at ease with regard to any real or perceived risks of using human poop as compost.

Dr Gwara had recognised the potential of the choice experiments approach for this study, and reached out to UP to collaborate on the design and analysis of the study after attending a seminar presented by Dr Jourdain at the University in 2018. UP's Dr Thomas Lundhede, an extraordinary professor in environmental economics, was another co-author of the research.

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Dr Gwara was prompted to understand what consumers might value in human compost products by the realisation that such products could help address several critical socio-economic issues, including waste management, sanitation, agriculture and climate change mitigation.

This study is a first step towards creating human compost products that are more agreeable to farmers, and is an excellent example of how versatile and useful choice experiments are for market research, says Dr Jourdain.

Dr Jourdain and his colleagues at UP have been working with PhD students across South Africa since that 2018 seminar to build capacity in choice experiments for agricultural economics, alongside UP's Department of Agriculture Economics, Extension and Rural Development, and the University's Centre for Environmental Economics and Policy in Africa.

"Personally, this work is very important to me, and I hope to establish a community of practice in South Africa through these student networks and with other people doing work on choice experiments," Dr Jourdain says.

He says choice experiments are used widely elsewhere in the world, but that they are only emerging in Africa. Some of his students are using choice experiments to study preferences around pasture insurance, illegal hunting and even rewilding animals in national parks. Many others are using choice experiments in health research.

"It's quite versatile for very different settings to evaluate the diversity of preferences of different populations," Dr Jourdain says.

He cautions, however, that this approach is based on hypothetical choices, so the research must be carefully crafted to minimise bias in respondents' preferences.

"In the case of human compost pellets, we are talking about a product that does not exist yet," he says. "People may say they would buy it, but in practice, when the products arrive, they might not."

Dr Jourdain says the next step for human compost market research might be to offer an actual test product at an auction where the real buying behaviour of consumers can be observed.

In the meantime, Dr Jourdain is looking forward to building more skills in choice experiments in South Africa and watching how young researchers like Dr Gwara successfully use the method in their work.

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## **ABOUT THE UNIVERSITY OF PRETORIA**

The University of Pretoria (UP) is one of the largest contact and residential universities in South Africa, with its administration offices located on its Hatfield Campus in Pretoria. This 115-year-old institution is also one of the largest producers of research in South Africa.

Spread over seven campuses, it has nine faculties and a business school, the Gordon Institute of Business Science (GIBS). It is the only university in the country with a Faculty of Veterinary Science, which is ranked the best in Africa.

UP has 120 academic departments and 92 centres and institutes, accommodating more than 56 000 students and offering about 1 100 study programmes. It has the most academic staff with PhDs (70%), NRF-rated researchers (613).

The 2023 QS World University Rankings by Subject ranked UP first in South Africa in Accounting and Finance, Law, Economics and Econometrics, Mechanical Engineering, Electrical and Electronic Engineering, Chemical Engineering, Mathematics, and Veterinary Science.

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