AI grain assessment sows seeds for better returns

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South Australian artificial intelligence (AI) company GoMicro is rolling out its new grain assessment technology in Australia, paving the way towards more consistent quality controls and stable grain and pulse

prices.

Based at Flinders University's high-tech New Venture Institute (NVI) at Tonsley Innovation District in Clovelly Park, Adelaide, GoMicro CEO Dr. Sivam Krish says the multi-grain assessor gives growers and domestic and export markets a quick and better way to grade crops, accurately testing more than 1,200 grains in one sample—compared to the existing scanner-based method which assesses about 200 well-separated grains at a time.

"GoMicro relies on the excellent quality of phone cameras and Amazon web services to deliver low-cost, high-precision quality grain and other produce assessments to farmers worldwide," says Dr. Krish.

GoMicro's grain assessment technology is also being trialed in wheat grown in India, corn in Ghana and negotiations are well advanced to expand the assessor rollout with a large Indian ag-tech company to use on grain, corn and soy procurement.

"Accurate verifiable assessment will greatly reduce quality-related assessment risks for all parties in the supply chain," says Dr. Krish.

The new system reduces the risk of wasted production and trade disputes which often involves more subjective human quality assessment.

"This direct digital manufacturing facility, at Flinders University, is working with Queensland grain, seed and pulse trader PB Agrifood to assess the quality of soybeans sold by local farmers," Dr. Krish says.

In the first Australian trial, PB Agrifood field officer Kate McIntyre says the Toowoomba-based company hopes the GoMicro Assessor will be "very useful in day-to-day operations," making digitization solutions accessible to the company as well as growers to produce fair pricing

based on objective assessment.

"When PB Agrifood heard about Go Micro and the use of AI technology to classify grain and pulses, we thought about how this technology could improve efficiency and accuracy in our intake of soybeans," says Ms. McIntyre.

"We believe that the implementation of the technology developed by Go Micro will allow us to establish the quality of the soybeans at intake more quickly and accurately."

Using GoMicro's grain assessment technology. Credit: Flinders University

PB Agrifood has several uses for soybeans including whole beans, flour, kibble and meal. Each of these require different standards of soybeans. Currently, PB Agrifood staff manually categorize these soybeans based on the relevant standards.

The Go Micro technology assesses the soybeans into five categories and creates a table of results for each defect, including the percentage of defective beans in each category. "It will enable us to match these percentages to our intake standards and categorize the beans," says Ms. McIntyre.

"We are still implementing the technology into our intake process with a few changes to be made, for example, our current standards work off a weight sample whereas with the Go Micro app the sample will be based on the number of individual beans.

"We hope that the technology will result in growers getting a fairer and faster categorization of their soybeans."

Dr. Krish says the Go Micro technology has shown the potential for farmers to capitalize on low-cost, high-quality grain assessments to "transform entire harvests into digital assets that can be traded online."

"We are looking at yet more design and AI features to achieve optimal imaging conditions rapidly, even in the field," says Dr. Krish.

"We look forward to making our phone-based AI assessment technology affordable and available to the entire grain industry."

GoMicro has developed a range of phone camera techniques and flexible web-based and artificial intelligence (AI) technologies to promote primary production and profitability via pest and food product surveillance and now the new grain, pulses, coffee and tea assessment

method for farmers and consumers around the world.

Provided by Flinders University