Entry No. IRRC-0086

Category	: International Rice Research Conference
Select Theme	: Disruptive technologies and innovations
Endorsement email	:
Keyword 1	: Mobile advisory technology
Keyword 2	: Big data and open access
Keyword 3	: Biosensor technology
Title of Entry	: Design and Development of EcoWiSe as Real Time Monitoring System for Safe Storage of Agricultural Commodities in Gastight Flexible Containers
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: Storage of agricultural commodities in industrial settings and in food reserves is a major challenge, particularly in tropical climates. Losses are common and add up to 10% annually in weight loss, while qualitative losses are much higher. Hermetic storage in flexible plastic gas tight containers has proven to be useful and paddy, milled rice, rice seeds and rice bran can be stored safely in self generated atmospheres of low oxygen and elevated carbon dioxide as has been published in numerous publications on the subject. Storage can vary from a few weeks to months or more, while commodity quality is maintained. Till recent, monitoring of the “modified atmosphere” in the hermetic containers was with the help of portable oxygen analyzers requiring operators to collect readings on a regular basis. Recently GrainPro developed it’s EcoWiseTM remote sensoring system, which enables collection of storage data remotely with the help of remote sensors connected through a computer to the “cloud”. This system enables collection of data on temperature, humidity and oxygen in regular intervals varying from 5 mints to 24 hrs. Thus operators of storage sites are now able to monitor the storage conditions of their commodity at any location as long as there is Internet access. With the help of scientific data that have been collected over the years on the performance of hermetic storage, an ”algorithm” of storage can be developed which is verified with the data generated from the field, thus being able to not only monitor the stored grain, but also predict its conditions. We can now state that Aw0.7 + O2< 3% = storage time. Data collected from scientific publications on stored paddy and rice, can be matched with data from EcoWise and contribute to the development of a predictive storage model. Ability to monitor and predict storage performance will have major impact on the financing of agricultural commodities and their ability to serve as collateral Read more»

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