

Category	: International Rice Research Conference
Select Theme	: Disruptive technologies and innovations
Endorsement email	:
Keyword 1	: Innovation systems
Keyword 2	: Microbiomes
Keyword 3	:
Title of Entry	: Increasing rice production with precision agriculture and biological innovations for organic and sustainable agriculture
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Select only one type of presentation	: 15 minute oral presentation

Abstract : The seed of plant is like a mother of a child, growing and nursing the embryo until it is capable to survive in the surrounding environment and give the progeny for the new life-cycle. If we want to get strong viable and highly fertile plant, the seed, as the original source of life, must be healthy, carry beneficial genetic information and get the nutrients for proper embryo and plant development and protection. Here we want to share FadeevAgro and AgoBioComplex (ABC) seeds processing technologies that exclude seeds trauma, allow mechanically select the seeds with highest nutrients content, provide them with additional supply of nutrients, such giving minimum 20% increase in yield, improving inheritance of specific genetic traits and nutritional value of crop. The technologies are based on engineering and biological innovations for organic farming. They include novel solutions in mechanization of grain elevators, cleaning and grading machines, gravity tables, seed coating machines and manufacturer of organic substances for and probiotics for management of seed, plant and soil health by organic methods. Rice seeds are very susceptible to being traumatized during harvesting, processing and storage. Mostly, they acquire internal cracks due to the natural susceptibility, harvesting and post-harvesting machinery damages, improper drying and storage conditions. The invisible cracks disturb embryo nutrition, decrease immunity of the germinating seeds against soil pathogens and unfavorable environmental conditions, resulting in quantitative and qualitative losses in crop yield and presumably losses of beneficial genetic traits. To solve the problem, first seeds are non-traumatically and precisely selected based on their density. The dense seeds develop first on maternal plant getting more nutrients comparative to those developing later and presumably inheriting beneficial genetic traits to higher extend. Following the selection, the seeds undergo coating with organic fertilizers. Excessive use of tilling technology and pesticides resulted of soil depletion and degradation, partially due to death of microbiota responsible for conversion of soil microelements and minerals into plant-available biochemical structures. ABC provides the seeds with soil probiotics, organic fungicides and pesticides and more than unique 80 plant nutrients with polysaccharide base, giving full complex for organic plant nutrition and protection.

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