Malatech Water Trading & Service, Ltd.
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IMPROVING YIELDS OF BASMATI !!

PROJECT BACKGROUND

The trials for Basmati were undertaken with Action for Social Advancement (ASA) - an NGO. ASA operates in the state of Madhya Pradesh for farmer's welfare. The beneficiary farmers associated with this project live in isolated pockets in the interiors of the state.

OBJECTIVES OF THE PROJECT

- To provide a natural, holistic, cost effective, sustainable solution to boost soil fertility and improve yields for basmati cultivation.
- To alleviate stress on crops caused by biotic & abiotic factors.
- Impact socio-economic status of the farmer by improving crop productivity.

This project has been awarded with Order-of-merit at the Green Revolution Awards 2018 organised by the Skoch Group.

OUR SOLUTION

Malatech Water has an extensive range of products based on plant microbiome. Magic gro plus is the proprietary formulation that was used for this study.
These products are developed by the in-house R&D team in our DSIR approved laboratory. All our products are certified by ECOCERT, France.

MAGIC GRO PLUS (DRIP APPLICATION)

Magic gro Plus comprises of the rhizosperic (soil around the root zone) microbiome of the plant.

Key Benefits

- Improves nutrient uptake from soil by converting it to plant available forms
- Enhances root development
- Improves plant vigour and strength
- Enhances soil fertility by increasing organic matter in soil
- Helps plant to withstand water thirst during drought/water scarcity

MAGIC GRO PLUS (FOLIAR APPLICATION)

Magic gro Plus also comprises of the phyllosperic (above the ground parts of the plant) microbiome of the plant.

Key Benefits

- Helps the plant to withstand pest infestation and diseases
- Increases the photosynthetic activity of the plant
- Promotes early maturity of the crop
- Improves panicle formation
- Helps to withstand environment stress and water scarcity

METHODOLOGY

For the study we selected two varieties of basmati - PB1 and PS4. The trial plots were spread in Mandla, Kotma and Dindori districts of MP, all these 20 plots were rainfed.

All the plots were exposed to three applications of Magic gro plus.

Magic Gro Plus

- First application : 17-20 days post sowing
- Second application : 65-70 days post sowing
- Third application : 90-95 days post sowing

RESULTS OF BASMATI TRIALS

The biometric parameters, quantity and quality of harvest were studied and recorded.

INCREASE IN YIELD

During these trials MP faced a severe drought in Kharif 2017. Basmati yields are known to be affected between 25% - 40% due to drought. Furthermore, these varieties are susceptible to fungal disease called Rice Blast which further impacted the crop. In the face of such adversity, plots treated with Magic gro showed extremely promising results.

The yield from the treated plots were in line with the published yield, this was achieved without any additional inputs. On the other hand, the yields from the untreated plots dropped between 30-50% when compared to the published yield.

Variety	Published Avg. Yield (quintal/acre)	Treated Plot Yield (quintal/acre)	Control Plot Yield (quintal/acre)	% Age Increase in Yield	Cost Benefits Anylysis
PSB1	14	13.79	8	78%	1:2.49
PSB4	14	15.33	10	50%	1:1.9

BENEFITS TO FARMER

Increase In Gross Income

- PB1 variety : 72% rise in Income
- PS4 variety : 55% rise in Income

Increase In Net Profit

- PB1 variety : 118% increase in profits
- PS4 variety : 69% increase in profits

QUALITY ANALYSIS OF RICE HARVESTED

Sample tested at Indian Institute of Food Processing Technology, Thanjavur.

- 41% decrease in broken rice kernel
- 100% increase in head rice yield
- 5% increase in cooked rice volume
- Improvement in texture post cooking
- LB ratio, amylose content, aroma and colour were all maintained as per standard

BIOMETRIC PARAMETERS

- 40% increase in tiller formation
- 40% increase in grain weight per panicle
- 16% increase in number of grains per panicle
- 40% increase in weight of grains harvested per plant
- 100% alleviation of onset of fungal disease (blast)
- 100% alleviation of symptoms caused due to drought stress

Treated crop is able to withstand abiotic stress

Improvement in panicle size

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