

Effect of application of “Metabolis Gold” on Growth, Yield and Quality of Rice cv. GR 11 (2nd Year)

Objective: To confirm the best concentration of Metabolis Gold to getting more growth & yield of rice crop.

Introduction

Rice (*Oryza sativa* L.) is the main food for over half of the world population. In order to feed 10 billion people in 2050, it is imperative to consider the sustainability of food systems, including better utilizing food already produced. Rice is the single most important crop of the world as half of the world population eats rice every day. Rice supplies 20% of the world's dietary energy supply, while wheat and maize supply 19 and 5% respectively. In China, rice production and consumption are the highest in the world. China accounts for nearly one-third of the global rice market. To meet the high

demand for rice production due to the growing population and economic development, high yield has been the first priority of rice researchers in China for a long time. In



recent years, rice quality has been increasingly important to Chinese consumers as people's living standards improve. Rice is the most prominent crop of India as it is the staple food for most of the people in India. The rice crop is the backbone of livelihood for millions of rural households. India occupies an important position both in the area and production of rice. With the adoption of improved production technologies such as high-yielding varieties/hybrids, expansion of irrigation potential, and use of chemical fertilizers, the supply of rice in the country has kept pace with the increase in the demand. Demand for rice is expected to further increase in the future as population is continuously increasing, so production of rice also needs to be increased. There is a need to further increase rice productivity because the land area under rice cultivation is declining. Enhancing amino acids in the grain is one of the major objectives for improving the nutritional value of rice.

Experimental Details:

Crop	: Rice
Variety	: GR-11
Experiment Layout	: RBD
No. of Replications	: Four
Spacing	: 20 cm x 15 cm
Plot size	: 3.30 m X 2.85 m
Date of TP	: 14/07/2022

Treatment details:

Treat. No.	Treatment Details
T1	Control
T2	Metabolis Gold 0.5 gm
T3	Metabolis Gold 1 gm
T4	Metabolis Gold 2 gm
T5	Metabolis Gold 3 gm

Methodology:

The experiment was conducted at ASPEE, Agricultural Research and Development Foundation Farm, Village- Nare, Taluka- Wada, District, Palghar in the *kharif* season during 2022 in Randomized Block Design (RBD) with four replications ($r=4$). The gross plot size and net plot size were 3.30 m x 2.85 m, and 3.15 m x 2.80 m, respectively. The experimental site was located at 19.650 N latitudes and 73.130 E longitudes with an average annual rainfall of 3600 mm. Five treatments comprising different levels of Metabolis Gold such as T1 - Control, T2–Metabolis Gold 0.5 gm, T3–Metabolis Gold 1.0 gm, T4–Metabolis Gold 2 gm, and T5–Metabolis Gold 3.0 gm /litre water were tested in rice variety of GR11. Treatments were applied twice by spraying over a standing crop. The first spray was applied at 40 days after transplanting, while the second spray was applied 75 days after transplanting of seedling in main field.

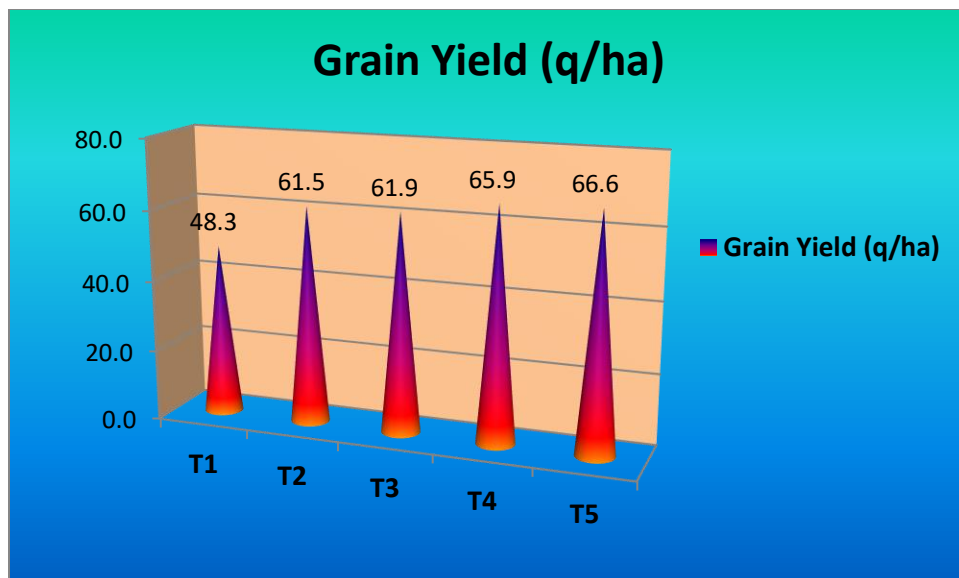
Layout:



Results:

The positive effects of L series amino acids on rice cv GR 11 on growth and production, manifested when it was specifically supplied during the reproductive growth stage (panicle initiation to heading) rather than vegetative and ripening stages, which exerted a feed-forward effect on photosynthesis coupled with an increased in both stomatal conductance.

The number of panicles / plant was recorded maximum in T5 (13.3) and the minimum number of panicles/ plant was recorded in the control treatment. The number of panicles (m²) was recorded as maximum in T5 (387.4). The minimum number of panicles (m²) was recorded in the control treatment. The number of seeds / panicle was recorded maximum in T5 (225.6). The minimum number of seeds/panicle was recorded in the control treatment. The test weight (1000 grain wt.) (gm) was recorded maximum in T5 (19.63 gm). The lowest test weight (1000 grain wt.) (gm) was recorded in the control treatment. The grain yield (66.6 q/ha) and straw yield (94.48 q/ha) also recorded maximum with treatment T5.



Conclusion:

From the study it was concluded that the plant height (cm), number of tillers/plant, number of panicles/ plant, number of panicles/ square meter, length of panicle (cm), highest number of seeds/ panicle, test weight (gm), grain yield (q/ha) and straw yield (q/ha) were found maximum with treatment T5 i.e. application of Metabolis Gold @ 3.0 gm/litre water.