



Integrated Effect of Azolla in Combination with Graded Doses of Nitrogen on Growth and Agronomic Parameters of Rice Crop

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Abstract: *Azolla pinnata*, a floating water fern, is used as green manure (bio-fertilizer) for increasing rice yields. It can fix di-nitrogen in association with *Anabaena Azollae* therefore it helps to reduce the recommended dose of chemical-nitrogen when *Azolla* is applied to the paddy fields. *Azolla* was grown in pots and trays in February, 2016 under laboratory and field by making trenches (2m × 2m × 0.2m) in March, 2016. A field experiment was conducted at CSKHPKV, Palampur to study and evaluate the effects of *Azolla* alone and in combination with graded doses of nitrogen in rice crop. The rice variety used was HPR-2143. The results of the experiment revealed that the maximum plant height was recorded in 50 kg N ha⁻¹ + 8 t *Azolla*, maximum number of tillers m⁻² in 125 kg N ha⁻¹ + 8 t *Azolla*, maximum effective tillers m⁻² in 100 kg N ha⁻¹ + 8 t *Azolla*. The highest number of grains per panicle was recorded in 125 kg N ha⁻¹ + 4 t *Azolla*. The application of 125 kg N ha⁻¹ + 8 t *Azolla* resulted in the highest grain and straw yield. It can be concluded from the experiment that integrated use of *Azolla* and nitrogen fertilizers is an effective way for increasing rice yield.

Keywords: *Azolla*, Rice, Grain yield, Straw yield
