

**THE EFFECTS OF
POLY MULCH APPLICATION ON WEED CONTROL,
MORPHOLOGICAL TRAITS
AND GRAIN YIELD IN RICE CULTIVATION**

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ABSTRACT

A field experiment to investigate the effect of poly mulch application on weed control, grain yield and morphological traits in rice cultivation was conducted at the Rice Research and Development Institute, Bathalagoda, during the months of July to November, 2016.

The experiment was comprised five treatments, such as Mulched with polythene (25 rons gauge, Black color) and dibbling seedlings on open patches, Initially mulching with same/removal of it 04 weeks after, followed by dibbling rice seedlings, Bare land (weedy)-Control, Broadcasting of rice followed by hand weeding and Broadcasting of rice followed by no weeding.

Experiment was laid out in a Randomized Complete Block Design (RCBD) with three replicates. Rice variety BG 300 was used as the medium. Weed density ($06/\text{ft}^2$) and weed dry weight ($0.009\text{g}/\text{ft}^2$) were significantly ($p < 0.05$) reduced by 25-micron polythene compared to that of Control ($356/\text{ft}^2$ and $16.409\text{g}/\text{ft}^2$). There was no any significant different ($p > 0.05$) in morphological traits such as plant height, leaf length, leaf width and panicle length of rice between other four treatments. Polythene mulch (25 microns, gauge) resulted in the highest number of filled grains in a panicle (556) thereby grain weight (143.3g) and the lowest mean number of unfilled grains in a panicle (54.33).

Weeds can successfully be controlled by using poly mulch (25 Microns gauge) in rice fields and it resulted in an increase in rice yield. However, plant height and other morphological characteristics were not affected by the treatments.

Key words: Mulching, Treatments, Significant, Dibbling, Broad casting