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Combined application of oil cake and rice bran reduced the number of weeds and increased the yield of paddy rice in a paddy field incorporated with white clover

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Abstract

The combined application of oil cake and rice bran into the soil surface was found useful for weed control in our previous pot study. The present study was undertaken to evaluate the performance of white clover (*Trifolium repens* L.) while incorporated in the paddy field and effects of combined fertilizer on weed control and rice yield. A plot was divided into two parts i.e. white clover incorporated and not incorporated. The nitrogen content of the incorporated white clover was 12.5 gm⁻². Chemical fertilizer and combined fertilizer plots were compared with non-fertilizer conditions. The mixed ratio of combined fertilizer was oil cake 1.35 and rice bran 1.0. Combined fertilizer was applied to the soil surface, and chemical fertilizer was mixed in the soil. Nitrogen application rate was 8 gm⁻² for any fertilizer. The weed numbers were significantly reduced in the white clover plot irrespective of application condition both at heading and harvest time. Also, weed control ability was improved by the use of combined fertilizer. In the not incorporated plot, the number of weeds was suppressed about 90% by applying combined fertilizer. The rice yield was markedly increased by the incorporation with white clover under all fertilization conditions. Contribution rates of increased rice yield by white clover and combined fertilizer were about 55% and about 25%, respectively. The rice yield was increased by the incorporation with white clover, and the number of weeds remarkably decreased as well. Also, these effects were improved due to combined application of oil cake and rice bran.

Key words: oil cake, rice bran, white clover, weeds, rice yield.

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