

RESEARCH PAPER:

Effect of vermicompost on the growth and biochemical contents of *Oryza sativa* var. *ponni*

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SUMMARY

Paddy is the most important food crop of India. An experiment was designed to improve the yield and biochemical contents of rice. Vermicompost was made using waste banana leaf from banana plantations that were left over after the harvest of the plants. The earthworm employed was *Eudrillus eugineae*. The vermicompost thus produced was amended to the soil at a rate of 5 tones/hectare and ploughed well. Paddy seeds of the variety *ponni* were sown in the experimental plots which were 8m of breadth and 39m length. Experiments such as shoot length, root length, number of grains, 1000 grains weight, number of spikelet, height of the plant, paddy grains protein and carbohydrate content were conducted to study the effect of vermicompost on the growth and biochemical contents of the paddy crop. A control plot was maintained in which the soil was not amended with vermicompost.

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Key Words :

Vermicompost,
Oryza sativa
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Biochemical
contents

Throughout the world, human population, industries and domestic animals increasingly are highly producing large amount of organic wastes in addition to naturally falling leaf litter creating economic and environmental problems. The organic residues, by-products and waste materials if not used for other purposes, it should be returned to the soil from which it was derived, thus ensuring availability of adequate amounts of soil organic matter and nutrients. Composting is the natural process of decomposition of organic matter by microorganisms under controlled conditions. Compost improves soil fertility because of the presence of humic substances in the compost (Senesi, 1989). Earthworms are a resource that may be used in agriculture because of their effect on nutrient dynamics and on the physical structure of the soil which significantly enhance plant growth and improves soil quality (Lee, 1985).

EXPERIMENTAL METHODOLOGY

The field experiments were conducted in an agricultural farm at Gobichettipalayam in Tamil nadu. The soil was well ploughed. The

soil samples were collected and analyzed for their physio- chemical characters with respect to pH, electrical conductivity, moisture content, bulk density, micronutrients and macronutrients. After 10 days, the shoot length was measured. In another fifteen days the seeds grew into seedlings that were collected and transplanted to the experimental plots. The soils were well ploughed and divided into the equal sized plots of 8x39 feet. Triplicates were maintained for each treatment. About 300 seedlings were sown in each plot. Only one seedling was sown in each pit. Irrigation was done by continuous flooding. Various experiments were conducted to study the effect of vermicompost on the growth and yield parameters, biochemical content. The amount of protein was estimated by modified Folin method of Lowry *et al.* (1951), total soluble carbohydrate was estimated by anthrone method (Dubois *et al.*, 1951).

Preparation of vermicompost:

Banana trash (100kg) was mixed with 10kg of cow dung and heaped to a height of 2 feet in a cement tank that was 5 feet in height.

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