

Studies on organic farming in onion (*Allium cepa* L.) for the production of export quality bulbs

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ABSTRACT

An investigation was conducted to study the effect organic farming on growth, yield and yield attributes of onion var. N-2-4-1 during *rabi* season. The results clearly indicated that judicious application of combination of organic manures through application of 3 per cent panchagavya + 50 per cent FYM + 50 per cent poultry manure recommended for organic onion production to get better marketable bulb yield..

Key words : Onion, Organic farming, Growth, Yield.

Organic farming provides better and balanced environment, better food and living conditions to the human beings. It also provides low-cost agriculture development in the long run. Organic farming reduces the cost of production by utilization of organic wastes or its byproducts against chemical fertilizers, which are said to be potential source for pollution unless they are used in productive and efficient way. Organic farming is not more non – chemicalism in agriculture, but it is a system of farming based on integral relationship with nature (Lampkin, 1990). In view of the increased awareness about organic farming, pesticide residue free food production, increased availability organic inputs, investigation on these aspects have thus become imperative to assess their combination and their effect on yield, quality and post harvest storage life of vegetables. Among the vegetable crops, onion is an important bulb vegetable grown commercially for local demand and also for export. In onion, the information on the effect of organic farming using various organic manures and organic growth stimulants are very meagre. Hence, the present experiment was conducted at Horticultural College and Research Institute, TamilNadu Agricultural University, Coimbatore, India.

MATERIALS AND METHODS

The experiment was laid out in a split plot design with 40 treatment combinations replicated twice in the year 2002-03 and 2003-04. The variety used for the experiment was N 2-4-1. The soil in the experimental field is sandy loam in texture. Before raising onion crop, nutrient stabilizing crop maize was taken in prepared ridges and furrows for exploiting residual nutrients status of the existing field. After harvesting of maize, onion crop was

planted in the ridges and furrows at a spacing of 30 x 15. The crop was grown fully organically without using any chemicals. Plant protection measures were taken by using biopesticides and botanicals. The crop was harvested at 50 per cent of the leaf showing yellowing and senescence of leaves and neck fall. The entire plants were uprooted and the bulbs were separated from the stem by cutting the stem into 1 to 2 cm, above the bulb. The bulbs were cured in shade for 10-15 days to remove the field heat and excess moisture. The observations on plant morphological characters, yield and yield contributing characters were recorded and the results were statistically analyzed according to the methods suggested by Panse and Sukhatme (1985).

Treatment details:

Main plot treatments: Foliar spray of organic nutrients

| | |
|----------------|-------------------------------|
| M ₁ | Panchagavya (Cow urine based) |
| M ₂ | Humic substances |
| M ₃ | Coconut water |
| M ₄ | Control (No spray) |

Sub plot treatments: Organic manures:

| | |
|----------------|--|
| S ₁ | FYM 50% as equivalent to RD of + 50% Neem cake NPK as equivalent to RD of NPK |
| S ₂ | FYM 50% as equivalent to RD of + 50% Poultry NPK manure as equivalent to RD of NPK |
| S ₃ | FYM 50% as equivalent to RD of + 50% Pressmud as NPK equivalent to RD of NPK |
| S ₄ | FYM 50% as equivalent to RD of + 50% Vermicompost NPK as equivalent to RD of NPK |
| S ₅ | FYM 50% as equivalent to RD of + 50% Digested NPK pith compost as equivalent to coir RD of NPK |