

EFFECT OF ORGANIC AND INORGANIC FERTILISER ON GROWTH, YIELD, QUALITY OF CABBAGE (*Brassica oleraceae* var. *capitata*)

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ABSTRACT

An experiment was conducted to study the effects of organic and inorganic fertilizers on vegetative growth yield, quality and returns of cabbage var. Pride of India. Vegetative characters viz. mean number of leaves, circumference of stem and leaf area was found maximum in the treatment involving 25% RDF + 75% FYM. Head yield per plot and head yield per hectare were obtained maximum in the treatment applied with 25% RDF + 75% FYM. Quality parameter viz. mean TSS of head, mean ascorbic acid, staying capacity of head, keeping quality of head were obtained superior in the treatment applied with 25% RDF+75% FYM, except shape index which was found superior in the treatment applied with 25% RDF + 75% Teracare. The same treatment of 25% RDF + 75% FYM obtained the highest gross income, % increase over gross return, and net return over control. While benefit cost ratio was found maximum under treatment 50% RDF + 50 % Biomeal.

Key words : Cabbage, P₂O₅, K₂O, FYM, Biomeal.

Cabbage (*Brassica oleracea* var. *capitata*) is a cool season crop used as salad and boiled vegetable. Cabbage is rich source of vitamin A and C and minerals like iodine, iron, copper, potassium, sulphur, etc. The intensive use of chemical inputs has not only polluted the soil, water and the environment causing their slow degradation but also affect the life of human being. So, to eliminate all these bad effects organic farming is best alternative. Organic manures not only increase the yield but also improves physical, chemical and biological properties of soil which in turn improve fertility, productivity and water holding capacity of soil. Now a days many commercial organizations have brought some readymade organic fertilizers into the market. These are enriched with bio-inoculant and micronutrients. Hence an attempt was made to ascertain the effect of organic and inorganic fertilizers on growth, yield and quality of cabbage (*Brassica oleraceae*) var. *capitata*.

Particularly cabbage needs heavy manuring for good plant growth and high yield. Use of judicious combination of organic and inorganic sources is essential not only to maintain soil health out also to increase the productivity. Malewar *et al.* (1998).

The organic manures used were Biomeal (By product of mycelium and bacteria produced during preparation of antibiotics), Teracare (It is composted cocunut coir pith as soil conditioner added with micronutrient) and FYM (Decomposed mixture

of dung and urine of farm animal).

MATERIALS AND METHODS

An experiment was conducted at Department of Horticulture, MAU, Parbhani during 2002-2003. The experiment was laid out in randomised block design comprising of three replications and eight treatments viz. T₁-100% RDF (control), T₂-50% RDF + 50% Biomeal, T₃-25% RDF + 75% Biomeal, T₄ -50% RDF + 50% Teracare, T₅ - 25% RDF + 75% Teracare, T₆ - 50% RDF + 50% FYM, T₇ - 25% RDF + 50% FYM and T₈ - 100% organic manure (33.3% FYM + 33.33% Biomeal + 33.33% Teracare). The cabbage cv Pride of India was selected for the study and planted at the spacing of 45x45cm. Organic manures viz. Biomeal, Teracare and FYM each were applied at 50, 70 and 33.33 percent of recommended dose (1.5t/ha, 2.5 t/ha and 20t/ha, respectively) of given treatments before 15 days of transplanting and light irrigation was given. The recommended dose of N, P₂O₅ and K₂O were applied through urea, single super phosphate and murate of potash, respectively. Half dose of N and full dose of P₂O₅ and K₂O were applied during transplanting. Remaining half dose of N was applied 30 days after transplanting.

Five uniformly growing plants were selected in each treatment for recording all the growth, yield and quality parameters. The observations on vegetative growth viz. number of leaves per plant (non wrapper leaves per plant having length more than 2.5cm were counted and average was worked out at 60 days after transplanting),