

Research
Paper

Influence of integrated nutrient management on curd yield, quality and nutrient uptake and economics of cauliflower (*Brassica oleracea* var. *Botrytis* L.) under middle Gujarat

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ABSTRACT

An experiment on integrated nutrient management in cauliflower was conducted at Agronomy Farm, B.A. College of Agriculture, Anand Agricultural University, Anand during *Rabi* season of the year 2006. The treatment comprised of four levels of organic manures (FYM @ 15 and 20 t ha⁻¹ and vermicompost @ 3 and 4 t ha⁻¹) and three NPK levels (100% RDF, 75% RDF and NPK as per soil test values). Application of vermicompost @ 3 or 4 t ha⁻¹ recorded higher curd yield, protein content, nutrient uptake and net realization as compared to FYM application. In case of inorganic fertilizer treatments, curd yield, protein content and nutrient uptake as well as net realization were noticed with the application of 200:75:37.5 kg NPK ha⁻¹ (100% RDN).

Patel, K.K., Patel, B.A., N.J. Jadav, Patel, J.C. and Panchal, D.B. (2011). Influence of integrated nutrient management on curd yield, quality and nutrient uptake and economics of cauliflower (*Brassica oleracea* var. *Botrytis* L.) under middle Gujarat, *Adv. Res. J. Crop Improv.*, **2** (2) : 193-196.

KEY WORDS : Curd yield, Cauliflower, Integrated nutrient management, Nutrient update

Cauliflower (*Brassica oleracea* var. *Botrytis* L.) is a valuable vegetable crop because of its nutritional value and wide spread production. However, there are many problems in its cultivation. Balanced nutrition has tremendous scope for increasing its production by adopting scientific integrated nutrient management system. Integrated nutrient management minimized the dependence of crop production on chemical fertilizers alone. In addition, organic sources such as farm yard manure, vermicompost, pressmud, etc. have cumulative and residual effects in improving physical condition, chemical properties and biological environment of soil which not only reduces the need of chemical fertilizers but also sustain the productivity of soil. Inclusion of organic manures with inorganic fertilizers may serve as a chelating and complexing agents which prevent the nutrients from precipitation, fixation, oxidation and leaching. Use of organic manure leads to higher and sustainable crop production. However, the contents of nutrient in organics are in small quantities, therefore, their sole additions at a lower rate do not meet the nutrient requirement of crops. The availability of different organics as per the recommended dose is questionable for many farmers.

RESEARCH PROCEDURE

The field experiment was conducted at Agronomy Farm, B.A. College of Agriculture, Anand Agricultural University, Anand (Gujarat) on a soil which had neutral pH (7.88) medium in soluble salt (0.21 dSm⁻¹) and low in organic carbon (4.9 g kg⁻¹). The soil was high in available P₂O₅ (58.5 kg ha⁻¹) and K₂O (425 kg ha⁻¹). The experiment was laid out in split plot design by keeping organic matter in main plot and inorganic fertilizers in sub-plot treatment in three replications. The twelve treatments were formed comprising different levels as under:

Main plot treatment:

Organic manures (Four levels):

M₁: FYM @ 15 t ha⁻¹

M₂: FYM @ 20 t ha⁻¹

M₃: vermicompost @ 3 t ha⁻¹

M₄: vermicompost @ 4 t ha⁻¹

Sub-plot treatment:

Inorganic fertilizers (Three levels):

F₁: 100 per cent RDF (200:75:37.5 kg NPK ha⁻¹)

F₂: 75 per cent RDF (150:56.25:28.20 kg NPK ha⁻¹)