

Integrated nutrient management for sustainable production of pointed gourd (*Trichosanthes dioica* Roxb.) under Ganga diara of Bihar

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ABSTRACT

Based on the above experimental findings it may be concluded that in respect of optimization fruit yield of Parwal substitution of 25% inorganic nitrogen fertilizer by FYM and 75% through commercial inorganic source (Urea) proved the best to obtain maximum production of Pointed gourd fruit. Further in comparison to total fertilizer application as basal dose three splits of inorganic nitrogen proved beneficial in fetching higher fruit yield under Ganga diara situation.

Key words : Parwal, Inorganic nitrogen.

Parwal (Pointed gourd) *Trichosanthes dioica* Roxb. is one of the most important commercial cucurbitaceous vegetable of Diara ecosystem in Gangetic plains of Bihar. It is widely grown on river terrace, deposited with recent young alluvium. It gains commercial importance on account of prolonged availability of its fruits right from the month of March to even early November on flood free lands of the Ganga diara. It is an important revenue earning crop of small and marginal farmers of diara land, which helps in raising their socio-economic upliftment under diaraland situation.

In recent years thrust is mostly given for eco-friendly organic products for human consumption. Sustainable and eco-friendly agriculture, which minimizes the use of harmful energy intensive inputs and is achievable through the blend of organic fertilizers in maintaining crop quality. Organic nutrition for vegetables is especially important as they provide quality foods, which are very important for providing health security to vast vegetarian population in the country. Since, the vegetables are mostly consumed as fresh or partially cooked, they should be devoid of residual effect of inorganic chemicals. Increase in the yield of chilly, okra and brinjal by organic manure have been reported by K.R. Asha (1999), S.R. Rekha (1999) and Sharu and Meeradai (2001). A considerable scientific data were generated recently to show that the produce obtained from organic farming is nutritionally superior with good taste, flavour, luster and better shelf life. Keeping these facts in view organic manures like FYM are available in plenty in the diara belt, the present investigation was carried out to find out the most

appropriate integration of organo-inorganic nutrients for sustainable production of pointed gourd under diara ecosystem of Bihar.

The experiment under ICAR's adhoc project was laid out in randomised block design with three replications and promising cultivar of Parwal (Rajendra Parwal-2) in diara belt of Sabour under Ganga diara. The physico-chemical properties of the experimental plot indicated that the soil was sandy loam in texture. The values of organic carbon ranged between 0.40 and 0.42 per cent; available N-180 and 182 kg/ha, P_2O_5 -18.0 and 18.4 kg/ha, available K_2O - 210.0 and 215.0 kg/ha, during respective two years of experimentation. The pH value was 8.0 and 7.9 i.e.; slightly alkaline in reaction with E.C. value of 0.18 and 0.20 dSm^{-1} during the year 1999-2000 and 2000-2001, respectively. Thus, the soil fertility of river terrace plot indicates low organic carbon and available nitrogen and medium in available P_2O_5 and K_2O during both the years of experimentation. The total amount of annual rainfall received during first and second year of experimentation were 1375.5 and 1257.4 mm, respectively.

MATERIALS AND METHODS

Under the aegis of ICAR's Adhoc Project present investigations was conducted under Bihar Agricultural College, Sabour, Bhagalpur at Babupur Ganga Diara during the year 1999-2000 and 2000-2001 to ascertain best blend of organic and in-organic nutrients for sustainable production of pointed gourd under Ganga diara of Bihar utilizing promising variety Rajendra Parwal-2. The vines of crop were planted in the month of October of 1999 and 2000 in a randomised block design with three replications at spacing 2x2 m. The recommended dose of