

CSK HIMACHAL PRADESH KRISHI VISHVAVIDYALAYA PALAMPUR – 176 062 (H.P.)
DEPARTMENT OF VEGETABLE SCIENCE AND FLORICULTURE

THESIS ABSTRACT

Title of the thesis:	Integrated nitrogen management through biofertilizers in cabbage-summer squash-okra sequence
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ABSTRACT

The present investigation entitled "Integrated nitrogen management through biofertilizers in cabbage-summer squash-okra sequence" was conducted in the Department of Vegetable Science and Floriculture, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur (H.P) during the period September, 2002 to October, 2004, to study the response of integrating chemical nitrogen fertilizer with biofertilizers on marketable yield and yield attributes, quality of the produce, nitrogen uptake by plants, available nitrogen status of soil after crop harvest and benefit : cost ratio. The treatment combinations comprised of three nitrogen levels (80%, 60% and 40% of the recommended dose), two biofertilizers (*Azotobacter* and *Azospirillum*) and two methods of biofertilizer application (soil and seed application) constituting 12 combinations. In all, there were 13 treatments including control (recommended dose of chemical fertilizers). The field experiment was conducted in RBD with four replications.

The results revealed that 80% N + *Azospirillum*, as soil or seed application in all the crops of the sequence studied and 80% N + *Azotobacter* as soil/seed application in summer squash and okra were atleast at par with the control. The data on ascorbic acid content of cabbage head were erratic. The total mineral content of summer squash fruits was not influenced by the treatment combinations. In general, the total mineral content of okra fruits in different treatments was at par with control. The nitrogen uptake by the plants was significantly higher in the treatment combinations giving marketable yield at par or better than the control. The available nitrogen status in the soil after the harvest of cabbage crop was lower (2002-03)/at par (2003-04) with the control. In summer squash, 80% N and 60% N irrespective of biofertilizers and methods of biofertilizer application were at par with control. In okra, the treatment differences were non-significant. In general, application of 80% N along with *Azotobacter*/*Azospirillum* as soil/seed application gave benefit : cost ratios higher or almost equal to the control. In conclusion, 80% N + *Azospirillum* as soil or seed application in all the crops of the sequence studied and 80% N + *Azotobacter* as soil or seed application in summer squash and okra were atleast at par with the control treatment resulting in economy upto 20% of the recommended dose of nitrogen.

(Signature of the student with date)

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