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Effect of organic manures and biofertilizer on soil fertility, yield and quality of Safed musli (*Chlorophytum borivilianum*, Sant. and Fern.)

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SUMMARY

An investigation was carried out on loamy sand soil during *Kharif* season of the year 2008-09 to study the effect of organic manures and biofertilizer on soil fertility as well as yield and quality of safed musli under semi-arid hot region at Anand. Application of vermivompost @ 2 t/ha along with *Azotobactor* gave significantly the higher fasiculated root yield (4444 kg/ha) which was at par with application of castor cake @ 1 t/ha either alone or along with *Azotobactor* and application of neem cake @ 750 kg/ha along with *Azotobactor*. Application of vermicompost @ 2 t/ha along with root treatment of *Azotobactor* showed significantly the highest sapogenine content (1.494 %) in safed musli. Organic carbon content and available nitrogen of soil were significantly affected by addition of organic manure to safed musli at harvest. Application of vermicompost @ 2 t/ha along with *Azotobactor* improved organic carbon content, available nitrogen and phosphorus in the field due to application of manures.

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KEY WORDS : Safed musli, Organic manures, Soil fertility

Safed musli (*Chlorophytum borivillianum*) is an important endear medicinal plant with high demand. The fasiculated roots of safed musli have medicinal properties and used in Indian system of medicine (Geetha and Maiti, 2001). Fasiculated roots are used for the preparation of nutritive tonic used in general sexual weakness. The drug is considered as a valuable nerve and general tonic for strength and vigour. Safed musli have been named in Atherva veda as one of the devine herbs offering curve for many ailments and health related problems. Its demand is increasing rapidly in the international drug market. Foreign demand has been estimated as 300-700 tons annually. Its demand is over 35000 tons but supply about 5000 tons only. There is a need to improve productivity of safed musli by adopting proper package of practices. With keeping in view the above consideration an experiment entitled as studies on effect of organic manures and biofertilizer on soil fertility, yield and quality of safed musli grown on lomy sand soil had been conducted in the field.

EXPERIMENTAL METHODS

The field experiment was conducted at B. A. College of Agriculture, Anand Agriculture University, Anand (Gujarat), India during year 2008-09.Five organic manures *viz.*, FYM @ 5t/ha, vermicompost @ 2 t/ha, castor cake @ 1 t/ha, poultry manure @ 1 t/ha and neem cake @ 750 kg/ha alone or along with *Azotobactor* treatment were applied and these treatments were compared with control. Treatments were tested in Randomized Block Design with three replications. A new identified variety Anand Safed Musli- 1 (ASM-1) was used. Fasiculated roots were planted in the June on beds. The gross plot size was 3.6m x 1.50 m for each treatment. Well Farm yard manure, vermicompost, castor cake, neem cake poultry manure was applied before planting and *Azotobactor* was applied as a root treatment by root dipping for 15-20 minutes. Uniform cultivation practices were followed during the growth period of crop. Fasiculated root yield of safed musli were recorded. The sapogenine content in roots was estimated by procedure described by Mishra (1998). Soil analysis *viz.*, organic carbon content, available

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