

## Inter cropping safed musli (*Chlorophytum borivilianum*)

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### ABSTRACT

The experiment was conducted to identify the crop which provides better shade effect on yield of fasciculated root of safed musli. Among the five selected intercrops, safed musli-senna intercrop combination registered maximum net profit with 1:1.80 cost benefit ratio. Safed musli-bajra intercrop did not prove beneficiary effect on safed musli. Though highest cost of production, safed musli as sole crop earned maximum profit. Thus intercrop and shade condition does not help for the fasciculated root yield of safed musli.

**Key words :** Safed musli, *Chlorophytum borivilianum*, Intercropping, Fasciculated root

### INTRODUCTION

Safed musli is a medicinal crop and it generally grows in the forest (Prajapati *et al.*, 2003). It is observed that musli grows under semishade condition are luxurious. Looking to this, it was decided to study the different inter crops which can give the shade effect to the safed musli. The different inter crops were selected considering the different needs of the farmers. Among them, two of cereal, one of pulse, one of vegetable and one of medicinal crop which are also suitable as an intercrop with safed musli and can give a higher economic return (Kumar *et al.*, 1991).

### MATERIALS AND METHODS

A field study was carried out to find out the suitable inter crops which can give better shade effect to safed musli and can help in increasing the yield of safed musli. The experiment was conducted at the Research farm of Medicinal and Aromatic Plants Project, Anand Agricultural University, Anand with four replications and different crop combinations with safed musli as inter crop. The experimental design was RBD (Randomized Block Design). The experiment was carried out for two years each in *kharif* 2004 and 2005. The soil type of the experiment site was sandy loam and it was the representative soil of middle Gujarat. It was good, fertile and well drain soil. The nutrient status of this soil was low in organic carbon, medium in available nitrogen and phosphorus and rich in potassium.

The experiment was laid out during the last week of June for both the years. The land was fertilized by 10 tones FYM and 2 tones castor cake, then beds were prepared. The dimension of the beds were 5.3×3.55 m<sup>2</sup> (Gross plot size) and 5.00 × 3.25 m<sup>2</sup> (net plot size). No chemical fertilizers were applied. Total treatments were six including one control. Five crops like maize, bajra, okra,

soybean and senna were selected as inter crop with safed musli. During last week of June, experiment was sown after good initiation of monsoon. In each bed, sprouted fasciculated roots of safed musli were planted in three central lines, where as in first and fifth line seeds of intercrop were sown. Two interculturing and light earthing up for three times were done. Three irrigations were given during the dry spell.

### RESULTS AND DISCUSSION

The results of two year experimentation revealed that though higher cost of production, the safed musli as sole crop gave maximum net profit during both the years. The cost benefit ratio was also observed highest in safed musli as sole crop (1:1.94) followed by safed musli-senna inter crop (1.1.82). Further, the intercrop combination safed musli-okra had also given good net profit with 1:1.60 cost benefit ratio (Maheswari *et al.*, 1985). During both the years, the yield of safed musli roots was very poor in safed musli-bajra intercrop combination, while during the year 2004-05 (Table 1), the grain yield of bajra was not obtained. Hence, the cost benefit ratio of intercrop combination of safed musli with bajra performed negative as compared to other intercrop. The fasciculated root yield of safed musli was lowest in safed musli-bajra intercrop combination. Thus, bajra crop had adversely affected production of safed musli. Considering the above results, intercrops and its shade condition did not help to increase root yield of safed musli and cultivation of safed musli as sole crop is more profitable. The similar results was also reported by Vyas and Nein, 1999. (Table 2)

### Conclusion:

From the two year results, looking to the net profit and CBR it can be concluded that Inter cropping does not help to increase the yield of Safed musli and net profit (Table 3).

**Table 1 : Effect of intercropping on safed musli on yield, net profit and CBR in the year of 2004-05**

Sr. No.	Treatments	Yield (kg ha <sup>-1</sup> )	Gross income (Rs.)	Cost of cultivation (Rs.)	Net profit (Rs.)	CBR
1.	Safed musli	1292	258400	164954	93446	1:1.57
	Maize	1500 straw	1500	12078	-10578	1:0.12
2.	Safed musli	996	199200	155482	43718	1:1.28
	Okra	9415	75320	19510	18150	1:3.86
3.	Safed musli	1163	232600	160826	71774	1:1.45
	Soyabean	307	4605	9856	-5251	1:0.47
4.	Safed musli	1353	270600	166906	103694	1:1.62
	Senna	4492	51298	11726	13923	1:4.37
5.	Safed musli	461	92200	138362	-46162	1:0.67
	Bajra	1500 straw	2250	10442	-8192	1:0.22
6.	Safed musli alone	2702	540400	333684	206718	1:1.62

Note : Maize and Bajra seed yields could not obtained due to bird damage

**Table 2 : Effect of intercropping on safed musli on yield, net profit and CBR in the year of 2005-06**

Sr. No.	Treatments	Yield (kg ha <sup>-1</sup> )	Gross income (Rs.)	Cost of production	Net profit (Rs.)	CBR
1.	Safed musli	1046	209200	165854	43346	1:1.26
	Maize	908	7264	11500	-7236	1:0.63
2.	Safed musli	831	166200	156220	9980	1:1.06
	Okra	14498	115984	18480	97504	1:6.27
3.	Safed musli	1440	288000	161126	126874	1:1.79
	Soyabean	1231	18465	9040	9425	1:2.04
4.	Safed musli	1342	268400	167520	100880	1:1.60
	Senna	5631	64306	12560	51746	1:5.12
5.	Safed musli	818	161600	139200	22400	1:1.16
	Bajra	1502	10514	9460	1054	1:1.11
6.	Safed musli Alone	3800	760000	335580	424420	1:2.26

**Table 3 : Net profit and CBR of different inter crops for two year**

Sr. No.	Treatments	Net Profits (Rs.)		Mean	C B R		Mean
		2004-05	2005-06		2004-05	2005-06	
1.	Safed musli / Maize	82868	39110	60989	1:1.47	1:1.22	1:1.35
2.	Safed musli / Okra	99528	107434	103481	1:1.57	1:1.62	1:1.60
3.	Safed musli / Soyabean	66523	136299	101411	1:1.39	1:1.80	1:1.59
4.	Safed musli / Senna	143266	152626	147946	1:1.80	1:1.85	1:1.82
5.	Safed musli / Bajra	-54345	23454	-	1:0.63	1:1.16	1:0.89
6.	Safed musli / Alone	206716	424420	315568	1:1.62	1:2.26	1:1.94

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