Indian J. Hort. 67(Special Issue), November 2010: 276-278

Potential of baby corn cultivation in crop diversification under rice-wheat cropping system

J.K. Nandal*, Vishal Gupta, P.S. Partap and S.K. Tehlan
KVK Sonepat, Directorate of Extension Education, and Department of Vegetable Science
Chaudhary Charan Singh, Haryana Agricultural University, Hisar 125 004

ABSTRACT

An experiment on baby corn cultivation was conducted during 2002-03 and 2003-04 at farmer fields in district Sonepat. Sowing was done at different dates during September to November following proper packages of practices. Result showed that cultivation of baby corn was not only remunerative but also very profitable with net returns of Rs.43100/acre and Rs.35535/acre in respective years. This return was about four times that of wheat crop. The highest crop yield (8q/acre) and net returns (Rs.83600/acre) were obtained from the crop sown on 22nd September. The high remuneration. Further, the farmers have to wait for a longer period to realize income of their crops. However, by growing baby corn crop they can get money in minimum possible time. Since baby corn is in great demand in international market, and with its cultivation and exports foreign exchange could be earned by the country. Green fodder obtained after the harvesting of baby corn will support the cattle industry also. The study made very significant impact and encouraged its cultivation in the district.

Keywords: Baby corn, *Zea mays,* cropping system, crop diversification, time of sowing.

INTRODUCTION

Fingers like young unfertilized cobs of baby corn are consumed as vegetable. The cultivation of baby corn is getting popular due to its high nutritive values, delicious in taste and great potential for export. Baby corn cultivation is solution to problems emerged from continuous rice-wheat cropping system like *Phalaris minor*, water table and degradation of soil health etc. Baby corn cultivation is an alternative to wheat in *rabi* season. The demand and consumption of baby corn in the developed countries had increased manifold. The de-husked young cobs are a five star hotel delicacy. Baby is eaten as a vegetable by the farmers since long in many countries but eaten raw as salad and also used for making soups, deep fried with meat and also in other vegetables, pickles, candy, pakoda etc.

MATERIALS AND METHODS

The present study was carried out at farmer field during the year 2002-03 and 2003-04. Rice wheat cropping system was being followed by the farmer and baby corn cultivation was proposed as alternative to wheat in rabi-season. Staggered sowing was done on different dates from 22nd September to 16th November. The soil of the experimental field was low in nitrogen, medium in phosphorus and high in potash. MH-4 variety was used during both the years of study. Sowing was done by dibbling seed on center of ridges spaced at 50 cm and furrows were used for irrigation purpose. Apply 50:24:24 NPK and $ZnSO_4$ with 4 tons/acre organic manures. Nitrogen should be applied in three split doses. $^{1/3}$N and all P, K and $ZnSO_4$ applied at the time of sowing, 1/5 after 25 days and 1/3 after 40 days of sowing. Need based plant protection measures were adopted. To maintain the quality of baby corn detasseling is an essential operation, it is done by removing the tassel of the plant as soon as it emerges from the flag leaf. Young baby corn ears were picked daily with in 24 hours of silk emergence from the leaf sheath, then dehusked and packed in, polythene bags of half and one kg size. The produce was sold at Azadpur Vegetable Market, Chambal Fertilizer and Chemical Processing Plant at Rathdhana, Sonepat. Crop duration, period of production, gross yield and net returns were calculated for different date of sowing.

RESULTS AND DISCUSSION

Crop duration and period of production of baby corn varied for different date of sowing. The crop could mature in 108 days when sown in 22nd of September but progressive increase in the duration was recorded with delayed sowing in the month of October and November.

*Corresponding author

Longest crop duration of 159 days was recorded in the second year when the crop was sown on 16-11-03 (Table 1). The period of production of baby corn with early sowing in 22nd of September to 20th October was comparatively longer (39-47 days). Progressive decrease was recorded with delayed sowing. It was just 32 days when the crop was in 15th November.

The highest yield (8.0q/acre) was obtained in the crop sown on 22nd September and decrease thereafter delayed sowing (Table 1). The yield seems to be positively correlated with the period of production. The longer period of production under early sowing resulted in higher productivity. Gross income/acre ranged from Rs. 25300 to Rs. 97600 with different dates of sowing. Such wide differences could be attributed to yield variations and price fluctuations. The average market rate calculated for different dates of sowing from Rs. 46/kg to Rs. 122/kg (Table 1). The data suggest some trend in market behaviours. The market was at its peak in December, decreasing thereafter and again peaking up in April. Such market behaiour was dependent on the availability of produce and demand thereof.

The net returns correspond to the gross returns as the expenditure involved is nearly the same under different dates of sowing. The highest (Rs. 83600/acre) and lowest net returns (Rs. 11300/acre) were recorded where sowing was done on 22-9-02 and 16-11-03, respectively. Overall net income/acre cameout to be Rs. 43100 and Rs. 35535 in the first and second year of experiment. The favourable economics in baby corn cultivation under different management and agro-climatic conditions was also reported by Takur *et al*. (2) and Pandey *et al*. (1). Based on the very encouraging results the following conclusions can be drawn from this study. Cultivation of baby corn is not only feasible but also very profitable. The average net returns were Rs. 43100 and Rs. 35535/acre during first and second year of experiment. The corresponding returns for wheat were not more than Rs. 12000/acre. The 22nd September is most optimum sowing time for the seasons of highest productivity and market rate as the time of harvest in December and January. coincide with the peak demand period the average net returns for this time of sowing were Rs. 83600/acre. Its cultivation fits well in the prevailing cropping sequences. In rice we have wide range of varieties maturity in the month of September (HKR-47), October (HKR-126) and November (HBC-19). Thus accommodating the baby corn as succeeding crop in a staggered way in place of wheat in Rabi season. Moreover, baby corn sown in September, October will vacate the field in January-February where a third crop of cucurbits crops could be taken. Staggered sowing are required to ensure the availability of produce for extended period that happens to be the contractual

Table 1. Effect of date of sowing on baby corn production and income from under different dates of sowing.

Year	Area sown (acres)	Date of sowing	Period of harvesting Dates	Days	Crop period (days)	Yield (q/acre)	Price (Rs./kg)	Gross income (Rs./acre)	Total Cost (Rs/acre)	Net income/ (Rs./acre)
2002-03	2.5	22-09-02	23.11.02 – 08.01.03	47	108	8.0	122	97600	14000	83600
2002-03	2.0	02-10-02	26.12.02 – 09.02.03	45	131	7.2	80	57600	14000	43600
2002-03	1.5	20-10-02	29.01.02 – 09.03.03	39	139	6.5	68	44200	14000	30200
2002-03	2.0	15-11-02	19.03.02 – 20.04.03	32	156	5.8	50	29000	14000	15000
Total	8.0							172400		
Average								43100		
2003-04	1.0	24-09-03	26.11.03 – 10.01.04	46	108	7.8	98	76440	14000	62440
2003-04	3.0	10-10-03	30.12.03 – 13.02.04	45	126	7.0	80	56000	14000	42000
2003-04	2.5	30-10-03	28.02.03 – 06.04.04	37	158	6.2	65	40300	14000	26300
2003-04	2.5	16-11-03	20.03.03 – 24.04.04	35	159	5.5	46	25300	14000	11300
Total	9.0							140040		
Average								35535		

obligation as well. This would also check the glut in the market. The study made a visible impact in the district and the farmers in the village Sandal Kalan, Akbarpur barota, Aterna and Jakholi took up its cultivation.

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Received: September, 2008; Revised: February, 2010
Accepted: June, 2010