

ASHGOURD CULTIVATION FOR BETTER RETURNS



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Name of the Center: AICRPDA, Ballawal Saunkhri

Details of NICRA village (Tehsil, District, State): Achalpur and Nainwan,
Tehsil Garhshankar Distt. Hoshiarpur, Punjab

Year of start: 2011

Background

Submontane area of Punjab locally called *Kandi* area constitutes 7.8 per cent of the total state area. The area is characterized by the erratic distribution of rainfall, small and scattered land holdings and severe soil erosion on sloppy lands, poor soil fertility and low moisture retention capacity. Maize is the main *kharif* season crop in *kandi* area and it covers about 70 per cent of the total cropped area. The yield potential of the maize crop is very low which might be due to uncertainty of rains and lack of resources (good quality seed, implements etc.). Nowadays, increase in crop damage by wild and stray animals in the area has led to major setback for the cultivation of maize crop in the area. Crop failures have become a common problem in the area and farmers start keeping some of their land fallow.

In 2010, All India Coordinated Research Project on Dryland Agriculture (AICRPDA) centre – Ballawal Saunkhri launched Central Research Institute for Dryland Agriculture (CRIDA) funded National Innovations on Climate Resilient Agriculture (NICRA) project at villages Achalpur and Nainwan Tehsil Garhshankar of district Hoshiarpur. Under NICRA project, all the interventions for rainfed agriculture developed by AICRPDA centre Ballawal Saunkhri are being transferred to farmers' field at village Nainwan and Achalpur. Awareness camps and training programmes are also being organized in the village for the welfare of the farming community of the area. Custom Hiring Centre for latest agricultural implements has been established in NICRA village to increase the use of latest technology and to reduce the cost of cultivation. Few farmers in the area were growing ashgourd crop before NICRA interventions and there was wide variation in the fruit size, yield and rate of the produce.

Ashgourd cultivation:

Ashgourd (*Benincasa hispida*) is a warm season crop and its fruits are cultivated mainly for culinary purpose. The fruits are covered by white, chalky wax, which deters microorganisms and helps impart an extraordinary longevity to the gourd. The optimal temperature for the growth of ash gourd is in the range of 22-35°C and it is very sensitive to frost and low temperature conditions. The ideal season for growing ashgourd is February-March and June-July. Under rainfed conditions sowing can be done after the first showers in May-June. The recommended manures and fertilizers are 10-15 tonnes of well rotten FYM / compost alongwith 100 kg nitrogen, 50 kg phosphorus and 50 kg potassium per hectare. The full dose of FYM, phosphorus and potassium and half dose of nitrogen is applied in band placement during bed / pit preparation and rest half of

the nitrogen during flowering. PAG-3 is the recommended variety of ashgourd by the Punjab Agricultural University for Punjab conditions. Ashgourd hybrids of private seed companies are also available in the market. The recommended seed rate for ashgourd is 4-5 kg/ha. Sowing of 2-3 seeds per hill is recommended at a row to row spacing of 3.0 m and plant to plant spacing of 0.8-0.9 m. Seed soaking for 7-8 hours in cold water and then its treatment with 0.2% bavistin solution for 2 hours improves the germination percentage as well as it saves the crop from soil borne diseases. Avoid deeper sowing and excess moisture in the ashgourd field. Ashgourd nursery can be raised in the plastic bags and can be transplanted in the field after 15-20 days when seedlings are of 10-15 cm in length. After two weeks remove the unhealthy plants and keep two plants per hill for better growth and yield of ashgourd crop.

During the initial stages of crop growth, irrigate it at weekly interval, and then after 3-4 days during flowering/fruiting. During rainy season, drainage of excessive water is essential for plant survival and growth. Ashgourd is a cross pollinated crop. Insects especially bees play a vital role in pollination hence avoid the spray of insecticides during the flowering stage. The fruits are ready for picking after 120-150 days. The average yield of ashgourd crop is 35-45 t/ha.

NICRA interventions for promotion of ashgourd cultivation:

The ashgourd cultivation was promoted in the NICRA villages using cluster approach during the last three years i.e. from 2012-2014 under the technical guidance of the AICRDA - Ballawal Saunkhri centre. The good quality seed was provided to farmers and technical know-how was imparted through demonstrations, field days and diagnostic visits about the cultivation of crop.

The ashgourd gave an average fruit yield of 26 - 33.8 t/ha over the years (Table 1) with mean of 30.5 t/ha and net return ranged from Rs 39275/- per ha (2012) to Rs. 77994/- per ha (2014). The average B:C ratio during the year varied from 3.98 to 5.12 (mean 4.50).

The rate of the ashgourd varied from Rs 5-10/- per kg every year. The main advantage of the crop is that it is being purchased by the contractors on the spot thus saving the cost on harvesting as well as on transportation to market. The damage of the wild and stray animals in ashgourd crop is minimum as compared to maize crop.

Table 1: Productivity and economics of ashgourd at NICRA village Achalpur and Nainwan

| Year | Crop | Yield (t/ha) | Cost of cultivation (Rs/ha) | Gross returns (Rs/ha) | Net Returns (Rs/ha) | BC Ratio |
|------|----------------|--------------|-----------------------------|-----------------------|---------------------|-------------|
| 2012 | Ash gourd | 33.9 | 11500 | 50775 | 39275 | 4.41 |
| 2013 | Ash gourd | 31.5 | 15823 | 62964 | 47141 | 3.98 |
| 2014 | Ash gourd | 26.0 | 15225 | 77994 | 62769 | 5.12 |
| | Average | 30.5 | 14183 | 63911 | 49728 | 4.50 |

Impact

Ashgourd has become the main cash crop for kharif season in the NICRA villages. Farmers are using the hybrid seed and latest improved technologies for its cultivation. They are fetching remunerative price in the market and the area has become popular for the ashgourd cultivation. As a result, the area under ashgourd crop is increasing rapidly in the adjoining villages and it is improving the economic status of the farmers.



Ashgourd crop
in the fields

Ashgourd
seedlings



Matured
Ashgourd Crop

Marketing of
Ashgourd crop

