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## C O N T E N T S

**Cover I** : Divine Noni  
Courtesy : Dr D.R. Singh, CARL, Port Blair  
**Cover IV** : Amaranthus  
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## Development of sword bean (AHSB 1) for arid agroclimates

Dr. D.K. Samadia and Dr. T.A. More

**Sword bean is an under-exploited leguminous vegetable. Its green, tender and non-fibrous pods are used for vegetable purposes. In north-western parts of India, short perennial land races having low harvest index, are available meagerly with the tribal farmers. It has potential for diversified vegetable production under resource constraints arid agroclimate, but so far there is no improved variety and production technology are available for its commercialization.**



The AHSB 1 is protein-rich legume. In picture: The plants laden pods (left) and good looking pods (right)

**S**WORD bean AHSB 1 has been developed by selection. It is very early for harvesting under extremes of arid conditions. Its plant are medium in growth habit with dark green leaf and white flowers. Flowering starts in 68-72 days, where first picking is from 90-95 days of sowing as a rainy-winter season crop (July-March). It produces uniform pods which are used for vegetable at tender stages.

Light shining green, tender pods of 20-28 cm length, 2.8-3.5 cm width and 50-60 g weight are better in quality and ready for picking 12-18 days after setting. The number of marketable tender pods ranges from 22.4 to 30.5 with a yield potential of about 1.732 kg/plant. For seed production, about 20 mature pods gives 400 g seed/plant. The creamy white seeds are large and kidney-shaped. The seeds are about 2.52 cm in length and 1.61 cm in width. The weight of 1,000 seeds is 2.152 kg (Tables 1 and 2).

### Its Cultivation

Sword bean can be grown as a rainy-winter season crop (July-March). Sowing at onset of monsoon rain mostly in July is ideal for flowering and fruiting in October. Thus, it continues to produce quality pods up to March. This variety has vine growth habit, hence require support or trellis system for commercial cultivation. The channels should be prepared for cultivation under limited irrigation water either through flood in channels or drip technology. Channels 60-75 cm wide are prepared at 2.0-2.5 m apart, which are of about 25-30 m in length. Channels should be fertilized with FYM (50 q), vermicompost (5 q), DAP (100 kg), SSP (100 kg), urea (50 kg), MOP (50 kg) and 10 kg methyl parathion (2% dust) as a basal dose and mixed thoroughly.

Sowing can be done in time with the onset of monsoon in July. About 12-15 kg seed is sufficient for

Table 1. Performance of sword bean genotype AHSB 1 over the years

Character	2003-04	2004-05	2005-06	2006-07
Days to flower (DAS)	72.85	68.44	69.73	72.81
Days to first harvest (DAS)	98.53	89.44	92.72	96.55
Pod yield per plant (kg)	1.852	1.855	1.626	1.855

a hectare crop. Seeds should be soaked in water for 5-6 hours prior to sowing and also treated with fungicide. Single seed is sown at 50 cm distances in channels or near to the drippers

lateral lines under drip system. After germination, only one plant is to be retained at each sowing points. Iron poles (6-7 feet height) with net trellis or support system should be developed near to channels for the spread of vining plants of sword bean. The crop should be irrigated at 7-10 days intervals by flood method only in the channels or at 3-4 days intervals for 2-3 hours under drip technology (emitters 12-14 mm and emitters 4 lph capacity) under sandy soils of arid agroclimate.

Two manual weeding and hoeing should be done after 25-30 and 40-45 days of sowing in channels and

Table 2. Tender pod yield potential with technological advancement (2007 and 2008)

Crop management techniques	Yield (q/ha)
Ordinary support system with channel irrigation technology	55.85
Improved trellis system with drip irrigation technology	88.25
Increase in yield (%)	58.64



The seeds too are potential vegetable

at this time also apply urea 50 kg/ha in two split doses in the standing crop. Weeds between the channels may be controlled by cultivating the area by power tiller or with spades manually. Spraying of insecticides like Rogor, Malathion or Endosulfan @ 1.0-1.5 ml/litre of water, is recommended to control minor insect pests infestation at early plant growth and flowering stages. Tender pods (20-28 cm length and 50-60 g weight) should be harvested at regular intervals and marketed with proper grading.

For further interaction, please write to:

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