

CASH CROP

SUGARCANE

Sugarcane is cultivated on a limited scale in Himachal Pradesh in the districts of Sirmour, Bilaspur, Kangra, Mandi, Hamripur and Una. However, there is much scope for increasing the area under this crop in these districts. Besides, the farmers are showing keen interest in this crop keeping in view the rising cost of sugar in the country. During 1997-98, sugarcane was cultivated on 3,800 hectares with production of 1,39,080 tonnes of cane in the State.

Climate

Sugarcane is best suited to regions having tropical climate but it can be successfully grown in sub-tropical areas also. Approximately, 80 per cent of the total growth of the crop takes place during July to September owing to congenial climate.

Soil

Sugarcane is successfully grown on wide range of soil types ranging from sandy loam to clay loam and can tolerate salinity to some extent. However, well drained loamy soil is ideal for its cultivation.

Varieties

Co J 64 : This is an early maturing variety and is a good germinator. It has a profuse tillering habit with medium compact growth. Its canes are medium thick, greenish yellow, solid and weighty. It is resistant to red rot disease. Sucrose content is 16-17 per cent. It matures in December.

Co 1148 : This is a late maturity variety. It is a good germinator with profuse tillering habit. Its canes are medium thick, highly resistant to frost and is an excellent ratooner. Sucrose content is 15-16 per cent. It matures in February-March.

Land preparation

Four to six ploughings to obtain good tilth are required. First ploughing should be done with furrow turning plough and each ploughing be followed with planking.

Seed selection

The seed should be free from red rot, wilt, smut, ratoon stunting and grassy shoot diseases. Use only top two-third portion of the selected canes for seed.

Seed rate

Use 50,000 three-budded setts for planting an hectare of area.

Seed treatment

To improve germination, dip the cane setts in 0.5 per cent solution of Agallol (3%) or 0.25 per cent solution of Aretan (6%) or Tefasan (6%) before planting, i.e. 1.250 kg Agallol or 625 g Aretan or Tefasan in 250 L water to treat cane seed for one hectare.

Time of planting

Mid hills	Last week of March
Low hills and valley areas	First fortnight of March

Spacing and method of planting

Planting should be done by flat method and row distance should be 75 cm.

Manuring

Nitrogen	-	150 kg/ha
Phosphorus	-	75 kg/ha
Potash	-	100 kg/ha

The full doses of P₂O₅, K₂O alongwith half nitrogen should be applied at the time of planting. Remaining half nitrogen be applied at the time of earthing up. For ratoon crop, increase the dose of nitrogen of 225 kg/ha.

Irrigation

5-7 irrigations are required from the time of planting of onset of rains. Another 2-3 irrigations may be required after the monsoon till the crop is harvested.

Interculture and weed control

First interculture be given 10-15 days after planting. After six weeks, another interculture is required to remove weeds. However, weeds can be controlled by application of Tafazin 50 WP @ 2-2.5 kg/ha in 750-800 L water immediately after planting.

Earthing up

This should be completed in the month of June before onset of monsoon.

Management of Sugarcane Ratoon

The total economy of sugarcane crop is directly dependent upon the successful raising of ratoon crop. With proper management ratoon crop can give as high yield as the plant crop. The first ratoon is only recommended as the subsequent ratoon runs the risk of weeds, pests and diseases and results into poor yields. For a satisfactory ratoon, the canes of plant crop be harvested at ground level or slightly below and stubble shaving is done to allow buds situated on the underground portion of stubble to sprout. The top soil in a ratoon field has to be worked well by ploughing along cane rows. Immediately after the stubble shaving, it is desirable to cover the field with trash. The sprouting from early harvested plant crop in November and December is poor due to the frosty conditions during December and January. To obtain a good ratoon crop, February and March harvesting are found better. When irrigation facilities are available, crop should be irrigated as per the schedule for plant crop. Co J-64 and CO 1148 are good varieties for ratooning but the later yields more than the former. Ratoon crop matures earlier than plant crop. Besides cost of cultivation is low in ratoon than plant crop. To harvest the best ratoon, the following practices should be adopted :

- Harvest closely to ground for better sprouts.
- Remove late tillers or water shoots as they inhibit the full sprouting of the stubbles.
- The nitrogen requirement is one and a half times more than the main plant crop and may be applied in three splits. Drill phosphorus and potash along the cane rows towards the end of March on soil test basis.
- Fill gaps by transplanting pre-germinated shoots. The cane seed cuttings can also be used for gap filling.
- Under rainfed conditions, an application of sugarcane trash at the rate of 7.5 q/ha has been found beneficial for ratoon crop.
- Select CO 1148 as best ratooning sugarcane variety. This yields about 25 per cent more than CO J 64 in ratoon.
- An application of 2.250 kg a.i. per hectare of Atrazine controls all kinds of weeds, which should be applied a week after the harvest of plant crop as pre-emergence.
- Take timely plant protection measures as recommended for the main plant crop.

All other package of practices are the same as those for plant crop.

Plant Protection

Sign of attack/symptom	Control
Insect-pests	
Pyrrilla : It is a serious pest and causes losses in cane yield and sugar recovery. The pest appears in August -September.	Spray the crop with 1 L malathion (Cythion 50 EC) or 1 L endosulfan (Thiodan 35 EC) or 600 ml fenitrothion (Folithion/Sumithion 50 EC) in 1000 L water per ha.
Termites : The attack is from April-June and again in October. They destroy the germinating buds.	<ol style="list-style-type: none"> 1. Apply well rotten FYM 2. Remove the stubbles and debris of the previous crop from the field. 3. At the time of planting, apply 2 L chloropyriphos 20 EC mixed with 25 kg of sand per ha in furrows on setts.
Early shoot borer : The pest attacks from April-June and produces dead hearts.	<ol style="list-style-type: none"> 1. Plant the crop early i.e before mid March. 2. The chemical control is the same as for termites.
Top borer : The pest attacks from March-October and is very serious during July-August. Larvae feed to tender leaves within the whorl and damage the growing points which turn dark. The other signs of attacks are shot holes in leaves, white or red streaks on the upperside of the mid rib and bunchy tops from July onwards.	<ol style="list-style-type: none"> 1. Collect and destroy its moth and egg clusters. 2. Apply 30 kg granules of carbofuran (Furadan 3 G) or phorate (Thimet 10 G) at the base of the shoots in the last week of June or first week of July. Mix well in the soil so as to avoid flowing of granules with the irrigation water and irrigate the crop immediately. This will control the third brood of top borer which causes the maximum damage.
Diseases:	
Smut : The affected canes produce long whip-like shoots. Smutted shoots may also arise from lateral buds.	<ol style="list-style-type: none"> 1. Rogue out the entire diseased clumps and destroy after carefully removing the smutted whips. 2. Use disease-free seed. 3. Plant resistant varieties.
Red rot : The rind loses its bright colour and shrinks. About this time the upper leaves turn pale, wither at the tips and along the margins. When the affected stems are split open, the diseased tissues show reddening with transverse white blotches and they emit an alcoholic smell.	<ol style="list-style-type: none"> 1. Rogue out entire diseased clumps and burn. 2. Setts for sowing should be procured from disease free areas. 3. Burn all trash after crop harvest. 4. Avoid flooding. 5. Sow resistant varieties.

In addition, seed potato is also main cash crop in the upper Shimla hills of the Pradesh in *Kharif* season. This is due to the fact of the natural advantages the State enjoys in respect of potato seed production. The detail of seed potato cultivation is given in the chapter of Crops for Dry Temperate Zone.