

AGRONOMIC PRACTICES

Land Preparation: A fine seed-bed is essential for securing a good plant stand.

Seed Rate

<i>Varieties/hybrids</i>	<i>Seed-rate (kg/acre)</i>
American Cotton	
Bt Hybrids: MRC 7017 BG II, MRC 7031 BG II, MRC 6301, MRC 6304, RCH 308 RCH 314 and RCH 317	0.750
Non Bt Hybrid: LHH 144	1.5
Varieties : LH 2076, F 1861 and LH 1556	3.5
Desi Cotton	
Hybrid PAU 626 H	1.25
Varieties : FDK 124, LD 694 and LD 327	3.0

Acid Delinting of Cotton Seed : Mix 100 g commercial grade concentrated sulphuric acid with 1 kg cotton seed for American as well as *desi* cotton in earthen/plastic container by stirring it vigorously for two to three minutes with a thick wooden or glass rod. As soon as the fuzz gets dissolved, add 10 litres of water, stir well and drain out water through the perforated plastic basket. Repeat these washings three times to make the seed free from sulphuric acid residue. Dip the washed seed for about one minute in sodium bicarbonate solution (12.5 g sodium bicarbonate in 2.5 litres of water) to neutralize the acid residue on the cotton-seed. Give one more washing with water and remove light, damaged and rotten inviable seeds floating on the surface. Dry the healthy fuzz-free seed in the shade by spreading in a thin layer. Treat the dry seed with recommended fungicides.

Precautions

1. Metal or wood container should not be used
2. The operator should wear the plastic gloves
3. The water containing acid and alkali residue should be properly disposed off in the waste land.
4. Inadequate washing and delayed washing of the seed after acid treatment and residual acid on the seed if not neutralized may impair the germination of seed.

Seed Treatment and Seed Soaking : Add half gram (0.5 g) Emisan-6 (methoxy ethyl mercury chloride) and one fourth gram (0.25 g) of Streptocycline for one kg cotton seed in one litre of water. In case of acid delinted seed soak the seed for 2-4 hours and for non-delinted seed 6-8 hours. Also add half gram succinic acid in 5 litres of water to promote good establishment of plant stand, better early growth and more yield. After this treatment, the cotton seed should be smeared with Gaucho 70 WS (Imidacloprid) @ 5 g or cruiser 70 WS (Thiomethoxam) @ 3g/kg seed for preventing damage by cotton jassid. In case undelinted seed is used, rub it with fine earth, cow-dung or ash to remove its fuzz and ensure its uniform distribution.

Time of Sowing : First April to 15th May

Note : Sowing during this period ensures better yield and escapes the attack of insect pests and diseases.

Sowing and Spacing : Sow in lines 67.5 cm apart with a cotton sowing drill. The plants within rows be kept 60 cm apart at thinning in case of *narma* and 45 cm in case of *desi* cotton.

However, for hybrid LHH 144 plant to plant distance should be kept at 75 cm. It may be done after first irrigation or heavy showers. For PAU 626 H and Moti Hybrids the plant to plant spacing should be kept at 60 cm.

Similarly, for Bt hybrids namely MRC 7017 BG II, MRC 7031 BG II, MRC 6301 Bt, MRC 6304 Bt, RCH 308 Bt, RCH 314 Bt and RCH 317 Bt, the plant to plant distance may be kept at 75 cm.

Ridge sowing : Sowing of cotton on ridges prepared with cotton planter and irrigating the crop in furrows saves considerable amount of irrigation water without reduction in seed cotton yield.

Transplanting of cotton seedlings : For gap filling, 3 week old nursery grown in 4"x6" polythene bags, filled with 1:1 mixture of soil and FYM, can be transplanted.

Weed Control : Hoe two or three times. The first hoeing should be done before first irrigation. For hand weeding, use of a wheel hoe is recommended. A tractor drawn cultivator or bullock driven Triphali can also be used in the early stages of the crop growth but their use after fruit initiation should be avoided. Chemical weed control in cotton is cheap and efficient. For control of weeds particularly *itsit* (*Trianthema portulacastrum*), *Madhana/Makra* (*Eleusine* spp), apply Treflan 48 EC, haktimanTriflurex 48 EC (trifluralin) @ 1.0 litre/acre on a well prepared seed bed and incorporate these herbicides thoroughly in 3-4 cm soil or Stomp 30 EC @ 1.0 litre/acre as pre-emergence within 24 hours of sowing. Weeds start emerging at about 5-6 weeks after application of herbicide. Give one hoeing/ interculture around 45 days after sowing to control these weeds. Alternatively, in place of hoeing/interculture apply Gramoxone 24 per cent WSC (paraquat) 500 ml/acre or Roundup 41% SL/Glycel 41% SL (Glyphosate) 1.0 litre or Excel Mera 71 SG 600 g/ acre in 100 litres of water (6-8 weeks after sowing when the crop is about 40-45 cm in height) as a directed spray to control weeds in between the crop rows. To avoid drift, spray these herbicides on non-windy days. The directed spray can be done using knap-sack sprayer fitted with flat fan nozzle and keeping the boom height low (15-20 cm above the ground level) or using a protective hood so that herbicide does not fall on crop leaves. Both paraquat and glyphosate are non-selective herbicides and can cause injury to the crop if it falls on the crop leaves. However, falling of herbicides on stem of the plant is not harmful. In situations where perennial weeds are a problem, glyphosate is more effective and provides long duration control. In situations where *itsit* emerges after first irrigation or with the rain shower Stomp @ 1.0 litre/ acre can also be applied as post-emergence after first irrigation to cotton. If the weeds emerge before the application of the herbicide, a light hoeing/interculture may be done as the Stomp does not control the emerged weeds. Dissolve the herbicide thoroughly in 200-250 litres of water/acre and spray it uniformly with a knap sack sprayer fitted with flat fan or flood jet nozzle. The herbicide can also be sprayed with tractor mounted sprayer fitted with flat fan nozzle. For getting good results with the herbicide, following precautions should be taken :

- Prepare a fine seed bed free from plant residues and clods
- ensure adequate moisture in the field at the time of spray of herbicide.
- Spray of the herbicide should be done either in the morning or evening Hours