

		4. GSD affected shoot should be uprooted and discarded. Spray Dimecron(0.02%) 2-3 times at 15 days interval.
July – September	Red rot, GSD, leaf scald	1. Keep keen watch on red rot affected canes. As and when yellowing or drying of top leaves is seen, confirm red rot by splitting. Such affected stools should be uprooted and burnt. Bunding should be done around the field to check flow of water to other fields. Regular attention should be given on drying of canes 2. On border of field, GSD affected plants should be looked for. If GSD affected plants are frequent, Dimecron(0.02%) may be sprayed 2-3 times at 15 days interval. 3. Uproot leaf scald affected canes and discard.
	Rust	As and when rust pustules start appearing on leaves, spray Dithane M-45 or Dithane Z-78 (0.25%) at 15 days intervals 3-4 times.
	Yellow spot, eye spot	Removal and burning of affected leaves. Spray copper oxychloride (0.2%) 3-4 times at 15 days interval
October to harvesting	All diseases	1. Removal and destruction of smut affected tillers. 2. Early harvesting of crop if disease incidence is high.
After harvesting	All diseases	1. Discontinue ratooning if red rot, wilt or smut incidence is high. 2. Crop rotation should be followed with suitable crop. Use certified seed of sugarcane after rotation.

Integrated Management of Major Diseases of Sugarcane



Sponsored by :

Government of India
Ministry of Agriculture

(Department of Agriculture & Cooperation)

Directorate of Sugarcane Development

8th Floor, Hall No. 3, Kendriya Bhawan, Aliganj, Lucknow - 226 024 (U.P.)



Developed, Designed and Published by :

Director

Indian Institute of Sugarcane Research

Rae Bareli Road, Dilkusha, Lucknow-226002

Integrated Management of Major Diseases of Sugarcane

Sugarcane is a long duration crop of 10-12 months and therefore, is liable to be attacked by a number of diseases. According to an estimate, sugarcane production declines by 19.0 % due to diseases. To increase the crop productivity, management of diseases is of great significance. Due to diversity in agro ecological conditions, the importance of a disease varies and therefore, management strategy should be adopted accordingly.

Several management strategies have been developed as a result of research and development work. In order to save environment from chemical pollution, use of biocontrol has been given utmost attention. The management technologies have been integrated as per need for increasing the efficiency. Calender of management strategy has been described in the following tables for the benefit of sugarcane growers.

Management of sugarcane diseases of plant crop

Stage	Disease	Management
Seed crop	Seed transmitted diseases (red rot, smut, wilt, grassy shoot, leaf scald, ratoon stunting)	Seed should not be taken from disease affected crop. Use certified seed and variety recommended for the region.
Selection of seed	Red rot, wilt, etc.	Discard setts with dry/desiccated eyes
Sett treatment	Red rot, smut	Dipping of setts in Carbendazim (0.2%) acidulated with acetic acid (0.2%) for 30 min before planting

Nucleus seed treatment (for seed production only)	Seed transmitted diseases	Moist hot air treatment (At 54°C & 95-99% R.H for 2.5 hours). This treatment is meant for seed production only.
At planting	Red rot and other soil-borne pathogens / diseases	1. Removal of crop debris during field preparation. 2. Application of <i>Trichoderma</i> culture (effective in biocontrol of red rot) in furrows @ 20 kg / ha (or rate recommended) 3. Intercropping with mustard or coriander in autumn – planted cane is beneficial.
April to June	Smut, red rot, grassy shoot	1. Application of <i>Trichoderma</i> culture near root zone of settlings @ 20 kg /ha (or recommended dose) 2. Smut incidence increases when soil is either too moist or too dry. Smut whips should be removed and burnt. 3. In red rot prone areas, minimum irrigation should be given before the onset of monsoon. Red rot affected plants should he eradicated and burnt. Grassy shoot affected plants should also be eradicated and burnt. If GSD incidence is high, spray Dimecron(0.02%) 2-3 times at 15 days interval.
July to September	Red rot, grassy shoot, leaf scald	1. Keep keen watch on red rot affected clumps. On drying or yellowing of top leaves, the affected clump should be uprooted after confirming the disease. The bunding should be done around the field to check flow of water to other fields. Regular attention should be given on drying of canes.

		2. On border of field, GSD affected plants should be looked for. If GSD affected plants are frequent, Dimecron (0.02%) may be sprayed 2-3 times at 15 days interval 3. Uproot leaf scald affected canes (leaves with white stripes and sprouting of all the buds in cane stalk).
	Rust	As and when rust pustules start appearing on leaves, spray Dithane M-45 or Dithane Z-78 (0.25%) at 15 days intervals 3-4 times.
	Yellow spot, eye spot	Removal and burning of affected leaves. Spray copper oxy chloride (0.2%) 3-4 times at 15 days interval
October to harvesting	Smut, wilt	Smut affected late shoots should be cut and destroyed Wilt affected canes should be cut and burnt
At harvesting and thereafter	Smut, wilt etc.	Canes should be harvested flush with the ground. If possible, stubble shaver machine may be used. Crop debris should be burnt when disease incidence is more than 15-20 %.

Management of diseases in ratoon crop

Stage	Disease	Management
Ratoon initiation	Red rot, smut, wilt, leaf scald, ratoon stunting etc.	1. Crop debris should be burnt after harvest. Weeds around the field should be destroyed 2. Irrigate the field if preceding crop was affected with smut (soil with moisture stress promotes smut incidence) 3. Dried or chlorotic clumps should be uprooted. Smut whips should be cut and burnt.