

Package of Practices for Cotton Cultivation in Telangana State

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Good agriculture practices for Cotton cultivation

- **Suitable varieties:** Adilabad Kapas-1 (ADB-542), WGCV 48, WGCV-79, ADB-39 Narasimha (NA1325), Sri Rama (NDLH 1938), Shivanandi (NDLH-1755).
- **Suitable hybrids:** Select private Bt hybrids that performed well in the past 2-3 years in a specific location. Choose high-yielding popular varieties required for the specific situation.
- Sow the crop early by June 1st /2nd week after good rains (60 mm) or with pre-sowing irrigation. Don't sow cotton after July 20th, as yields will be reduced drastically.
- As far as possible, sow the crop in a span of 1 week to 10 days in a particular village or area to minimize the incidence of PBW.
- Treat the seed with Carbendazim 2 g or *Trichoderma viridae/Pseudomonas fluorescence* 10 g per kg seed in addition to insecticide treatment.
- Take up short duration inter crops in cotton like green gram/ black gram / cowpea/ soybean & medium duration red gram
- Provide supportive irrigations during boll formation & boll development stages in case of prolonged drought for reaping higher yields
- Apply 3 bags (150 kg) of SSP or 50 kg DAP basally or within 15 DAS only once and nitrogen & potash in 4 splits at 20, 40, 60, 80 DAS @ 25-30 kg urea+10 kg MOP every time/acre. Avoid top dressing of complex fertilizers mainly.
- Supplement soil application of fertilizers, with foliar spray of nutrients viz Urea/DAP 2%/KNO₃ 1%/19:19:19 or 18:18:18 1% during boll formation & boll development stages at 7-10 day intervals few times & during adverse climate (drought/excess rains).
- Control weeds by the spray of Pre emergence-Pendemethalin 1 litre & post-emergence (Quizalofopethyl 400 ml + Pyrethiobac sodium 250 ml/acre) weedicides at appropriate times.
- Follow stem application of Monocrotophos (with water) at 1:4 ratio at 30, 45 DAS and Flonicamid (with water) at 1:20 ratio at 60 DAS for control of sucking pests.
- Adopt important integrated pest management strategies like border crop, inter crop, Trap crop, pheromone traps, yellow sticky traps, use of NSKE /Neem oil sprays for effective control of crop pests.
- Follow rotation of insecticide sprays for high efficacy.

- Follow crop rotation once in every 2 years, terminate the crop in 6-7 months compulsorily & grow subsequent crop like green gram / sesamum / maize / green manure crop for incorporation.

Comprehensive measures for management of Pink boll worm

- Incorporate crop stubbles in the field by tractor drawn cotton shredder.
- Take up deep summer ploughings for the elimination of pupal & larval diapauses stages.
- Adopt community sowing in a particular area/ village or villages in a span of 1 week to 10 days.
- Install or erect pheromone traps at 45 days after crop sowing @ 4/acre for monitoring of pest or @8/acre for mass trapping & control of the pest.
- Take up control measures if pheromone catches exceed 8/day/trap for 3 consecutive days or if 10 % rosette flowers or 10% damaged green bolls are noticed in the crop.
- Remove & destroy the rosette flowers continuously during early flowering period (45-70 DAS), to avoid/minimize the pest in later stage of the crop.
- Spray NSKE 5% or neem oil (1500 ppm) @ 5 ml/l of water with surf or sandovit 1 ml/l of water as a prophylactic measure at 40- 45 days of the crop.
- Take up spraying of chemicals like Profenophos (2ml)/Quinolphos (2 ml)/Thiodicarb (1.5 g)/ Emamectinbenzoate (0.5 g)/Chlorantraniliprole (0.3 ml)/Indoxacarb @ 0.4g/Spinosad (0.375 ml)/Spinetoram @0.9 ml etc., alternatively at an interval of 7-10 days depending on pest the load for effective control of pest.
- Mix neem oil once in 2 or 3 sprays with the above chemicals for increasing their efficacy against the pest.
- Go for spraying of Pyrethroids like Cypermethrin or Lambda cyhalothrin 1 ml/l or Chlorpyrifos+Cypermethrin@2ml/orThiomethaxam+Lamdcyhalothrin@0.4ml/orProf enophos+Cypermethrin@2ml/l of water once or twice whenever the pest incidence is severe.
- Terminate the crop between 160-180 days and go for the second crop with green gram/maize/blackgram/jowar/sesamum/groundnut/bengalgram/vegetables/melons etc., depending on water availability.

PACKAGE OF PRACTICES OF COTTON

Cotton is important fiber crop cultivated in all the districts of Telangana.

Soils: Deep black soils and red loamy soils with irrigation and good drainage facility.

Sowing time: June 15th to July 15th. **Don't sow cotton beyond July 20th.**

Seed rate: American cotton varieties (*G.hirsutum.L*): 5 kg/ha, Varietés (for closer spacing/HDPS sowing):10-12 kg / ha; Cotton hybrids:2-2.5 kg / ha

Spacing (cm) : Varieties (normal sowing):105 x 60 / 90 x 60; Varieties (closer spacing/HDPS sowing): 80x20/90x15/90x20/60 x 30 / 60 x 15; Hybrids (Bt / non Bt): 120 x 60 / 120 x 45 / 90 x 60 / 90 x 45

Seed Treatment: Treat the seed with Imidacloprid 70 WS @ 5 g /Gaucho 600 FS @ 5 ml/Thiamethoxam (Cruiser) 70 WS @ 4 g followed by treatment with *Pseudomonas fluorescens* @ 10 g or *Trichoderma viride* @ 10 g or Carbendazim 50 WP @ 2 g/kg seed.

Fertilizers: Varieties: 90 kg N + 45 kg P₂O₅ + 45 K₂O/ha; **Hybrids:** 120-150 kg N + 60 kg P₂O₅ + 60 kg K₂O/ha

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Weed Management: Spray pendimethalin or alachlor @ 1.0 l/acre or Pendimethalin extra @ 700 ml/acre immediately or within 48 hours after sowing. For control of grassy and broad-leaved weeds take up post-emergence spraying of Quizalofopethyl @ 400 ml/acre or Propaquizafop @250ml/acre and Pyriithiobac sodium @ 250 ml/acre at 25-30 DAS.

Insect Pest Management:

Jassids/aphids / thrips - Monocrotophos 36 SL @ 1.6 ml/l : Acephate 75 SP @1.5g/l : Imidacloprid 17.8 SL @ 0.25 ml/l : Acetamiprid 20 SP @ 0.2 g/l, Thiamethoxam 25 WG @ 0.2 g/l, Fipronil 5 SC @ 2.0 ml/l , Diafenthiuron @ 1.25 g/l, Flonicamid@ 0.3 g /l, Spinetoram 117%SC @0.9ml/l, Sulfoxaflor @ 1 g/l, Acephate + Imidacloprid @ 2g/lit, Dinutoferan @ 0.3g/lit.

Whitefly: Profenophos 50 EC @ 2.0 ml/l, Diafenthiuron 50% WP @ 1.25 g/l , Sulfoxaflor @ 1 g/l , bifenthrin @0.65 ml/l, Diafenthiuron + bifenthrin @1.25 ml/l

Red spider mite: Wettable sulphur 80 WP @ 3.0 g/l, Dicofol 18.5 SC @ 5 ml/l , Spiromesifen 22.9% SC@ 1 ml/l

Mealy bug: Profenophos @ 3 ml + 1 ml Sandovit / Triton /l, Acephate @ 2 g + 1 ml Sandovit/l.

Boll worms: Thiodicarb @ 1.5 g/l, Indoxacarb @ 1 ml/l, Spinosad @ 0.35 ml/l, Emamectin benzoate @ 0.5 g/l, Novaluron @ 1 ml/l, Spinetoram @ 0.9ml/l, Chlorantraniliprole @ 0.3 ml/lit, Flubendiamide @ 0.2 g/lit, Quinolphos @ 2ml/l and Chlorpyrifos @2ml/l

Diseases management

Black arm / Angular leaf spot/bacterial blight: Seed treatment with Carboxin + Thiram @ 2.5 g/kg seed or *Pseudomonas fluorescens* @ 10 g / kg seed; spraying Copper Oxy Chloride @ 3 g / l water starting from 50 days after sowing, 2-3 times, at fortnightly intervals.

Leaf spots: Mancozeb 2.5 g/l or Copper oxychloride 3 g/l or Propiconazole 1 ml/l for 2-3 times at 15 days intervals.

Grey mildew: wettable Sulphur 3 g/l or Carbendazim 1 g/l (or) Kresoxim methyl @ 1 ml/lit , 2-3 times, at 10-15 days interval

Rust: Tridemorph @ 1 ml or Propiconazole @ 1 ml or calixin 1 ml/l, 2-3 times, at fortnightly intervals.

Bollrots: Copper-oxy-chloride 3 g + Streptocyclin 0.1 g or Kresoxim methyl @ 1 ml or Dithane M-45 @ 2.5g or Carbendizim @ 1 g/l water

Root rot: *Trichoderma viridae* application @ 5 kg/ha along with FYM while sowing. Seed treatment with Carbendazim 2 g/kg seed. Drench the soil around the base of affected plants with copper oxychloride @ 3 g/l of water.

Alternaria leaf spot: spray with Pyraclostrobin @ 2.0 g / lt (or) Fluxapyranad + Pyraclostrobin @ 0.6 ml/lit @ (or) Tebuconazole + Trifloxystrobin @ 0.6g/lit

Harvesting: Kapas from fully opened bolls should be collected during cooler times of the day and it should be free from debris like dried leaves/bracts etc. Picking, bagging & selling of kapas should be done variety wise to maintain quality & fetch better price

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Information collected and uploaded by Dr. M. Sabesh, CICR