ROHINI COLLEGE OF ENGINEERING AND TECHNOLOGY
AUTONOMOUS INSTITUTION
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Anjugramam - Kanyakumari Main Road, Palkulam Varivoor P.O. - 629 401, Kanyakumari District.

24AG201 - CROP PRODUCTION TECHNOLOGY

UNIT 4

PRODUCTION PRACTICES OF AGRICULTURAL CROPS

- Handweedingat30-45 DAS

Irrigation

- Cotton can be irrigated at
  - 75% depletion available soil moisture in clay
  - 50% ASM at sandy loam soils
- Early irrigation is important to have proper plant growth
- Methods of irrigation
  - Flooding through furrows
  - Surge may be followed
  - Drip fetigation is also possible

After cultivation Thinning and gap filling

- Gap filling on10th day
- Seedlings raised from by poly ethylene bag may be useful
- Thin the seedlings to single plant on15th day

Earthing up

- Digging and earthing up is essential for soil aeration

Harvesting

- Hand picking is usual practice
- Strippers–spindle or brush type is used in developed countries
- May be machinery
  - Method of sowing needs change
  - One time harvest
- Seed cotton should be collected from fully opened bolls
- After harvesting should be dried in clean threshing floor

GREEN MANURES

Green manuring &Green leaf manuring

- Green manuring
  - Growing of crop purposely and incorporating it in the soil for manuring
- Green leaf manuring
  - Collecting green leaves from all available sources and using for manuring

Green manure suitable for S.India

Daincha- *Sesbania aculeata*

- Tolerant to drought, stands under flood
- Vigorous growth produces good biomass
- Can be incorporated within 45 days
- 10-20 to green matter
- Easy decomposition
- Seed rate 20kg

Sesbania speciosa

- Resembles daincha
- Can be cultivated in the standing water
- Bio mass production is higher than *S. aculeata*
- Seed rate 15kg
- It can be even in the bunds
    - To be used as GLM
    - To have seed production

Sesbania rostrata

- As intercrop along rice
- As daincha it can be cultivated
- Germination requires seed scarification
- More suitable to summer
- Stem nodulating GM
- Seed rate 15-20 kg

Kolunchi /wildindigo (Tephrosia purpurea)

- Suitable for sandy soil
- It is very hardy and drought tolerant
- Self sown crop is possible if sown 3-4 times
- Mature seeds remaind or mant in the rice soil
- More suitable for single cropped wetlands
- Not graced by cattle
- Seed scarification is needed
- Seed rate 15-20 kg

Indigo/ Avuri (Indigifera tinctoria)

- It is long duration crop resembles kolunchi
- It is more leafy
- Also a medicinal plant of today
- Comes up well in clayey soil
- One or two irrigations are needed
- Seed rate 15kg

Sunn hemp- *Crotalaria juncea*

- Vigorous growing
- Comes well in loamy soil under irrigation
- Seed rate 25-35kg/ha
- Subject to complete defoliation by insects
- Susceptible to water logging

Pillipesara- Vignatrilobata

(Syn: Phaseolus trilobus)

- It is pulse crop
- Sown as rice fallow pulses in AP
- Early slow growth
- Graced by animals and then allowed to grow
- Green matter produced is 8–10 t fallowed for six weeks
- Seed rate 10-15 kg

GREEN LEAF MANURE- GLM

Leguminous trees

- Pungam
- Cassia
- Subabul
- Gliricidia
- Trees & shrubs
- Neem
- Calotropis
- Ipomoea
- Pungam- *Pongamia glabra*

Greenmanure	**N content (%)**	**N accumulation (kg/ha)**
Crotolaria juncea	2.8 –3.2	80– 130
Sesbania aculeata	2.6 –3.2	130–185
S. rostrata	3.2 –3.4	170–220
S. speciosa	2.3 –3.1	115–160
Phaseolus trilobus	2.2 –2.8	85– 115
Tephrosia purpurea	2.9 –3.2	70 -115

Greenleafmanure–NContent

Tree	**Botanicalname**	**N(%)**
Pungam	*Pongania glabra*	1.3 –1.5
Neem	*Azardirachta indica*	1.0 –1.2

Konnai	*Cassia florida*	1.4 –1.6
Glyricidia	*Gliricidi amaculata*	2.3 –2.8
Vahai	*Albizzial ebbek*	1.1 –1.4
Erukku	*Calotropis gigantea*	1.4 –1.5
Subabul	*Leucaena lucocephala*	3.5 –3.7

Forages

Fodder sorghum

Season & varieties

- Irrigated (Jan-Feb & Apr-May)-CO11,CO 27
- Rainfed (Jun-July& Sep-Oct)-CO11, CO27, K7, K10 Field preparation
- Beds & channels

Seed rate

- Irrigated - 40kg/ha
- Rainfed -75kg

Spacing

- 30x 15cm

Fertilizer

- Irrigated-60-40-20NPK(50%Nat30DAS)
- Rainfed–30-20-20

Harvest

- Singlecutat50%flowering

Fodder yield

- Greenmatter-30-40t,Drymatter20-24t,Protein-9%

Fodder Pearl millet Season & varieties

- Irrigated (Thru'out theyear)-CO8
- Rainfed (Jun-July & Sep-Oct)-CO8

Field preparation

- Beds & channels

Seed rate

- 10kg/ha

Spacing

- 25x10 cm

Fertilizer

- 25-20-10NPK(50%Nat25DAS)

Harvest

- Single cut at foot leaf stage
- 30tgreenfodder

Fodder maize

Season & varieties

- Irrigated - Ganga5
- Rainfed- AfricanTall

Field preparation

- Beds&channelsorridgesat30cm Seed

rate

- 40kg/ha

Spacing

- 30x15cm

Fertilizer

- 25-20-10NPK(50%Nat25DAS)

Harvest

- Harvest when the cob is at milky stage
- Green fodder
    - 30 t Ganga5,
    - 40 t African tall

Forage - Grasses

Guinea Grass–*Panicum maximum*

- Season & varieties
    - Thru'year–CO1
- Field preparation
    - Well drained soil with ridges & furrows, not at heavy clay
    - FYM 25t
- Seed rate
    - 2.5kg/ha, Slips-66,000nos.
- Spacing
    - 50x30 cm
- Fertilizer
    - 50-50-40 NPK
    - 25kg N at every cut
- Harvest
    - First cut at 75 DAS or 45 DAP, then at 45 days
    - Green fodder 175 t from 8 cuts
    - May be intercropped with Hedge Lucerne for nutritious fodder

Blou Buffel Grass /Anjan grass-*Cenchrus glaucus*

- Season & varieties
  - N E Monsoon–CO1(Neela Kolukkattai)
- Field preparation
  - Well drained soil high ca content with ridges &furrows
  - FYM 25 t
- Seed rate
  - 6-8kg/ha
- Spacing
  - o50x30cm, sow at shallow depth , break seed dormancy
- Fertilizer
  - o25- 40- 20NPK
  - 25 kg N at everycut
- Harvest
  - First cut at 75 DAS ,then 4-6 cuts depending upon growth
  - Green fodder 40 t from 4 cuts

Bajra Nappier Hybrid

- Season & varieties
- Thru'year– BN2,NB21,CO1,CO2
- Field preparation
  - Well drained soil with ridges & furrows–not at heavy clay
  - FYM 25t
- Seed rate
  - 40,000slips
- Spacing
  - 50x50 cm
- Fertilizer
  - 50-50-40NPK
  - 100 N kg after each cut
- Harvest
  - Cut at 75-80 DAP subsequent at 45 days interval
  - Green fodder 250-400t

PREPARED BY
JESHWIN GIFTSON S P
AP/AGRI