AGRO-ADVISORY TO GROWERS OF JUTE AND ALLIED FIBRES

issued by

ICAR-CRIJAF, Barrackpore

05 June -14 June, 2020 (Issue No: 09/2020)

www.crijaf.org.in

An ISO 9001: 2015 Certified Institute
Barrackpore, Kolkata-700121, West Bengal

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# Agro-advisory to Farming Community of Jute and Allied Fibres
## (05 June-14 June, 2020)

## I. Likely weather in the coming week in jute and allied fibre growing states

<table>
<thead>
<tr>
<th>State/Agroclimatic Zone/Region</th>
<th>Weather Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gangetic West Bengal</strong> (Murshidabad, Nadia, Hoogly, Howrah, North 24-Parganas, Purba Burdwan, Paschim Burdwan, South 24-Parganas, Bankura, Birbhum)</td>
<td>Light to moderate rainfall/thunder shower is expected during 5-8 June, 2020 (total rain upto 46 mm). Maximum temperature ($T_{\text{max}}$) is expected to be around 32-37°C, and minimum temperature ($T_{\text{min}}$) of around 23-28°C. In Murshidabad, heavy rainfall is expected on 6th June (upto 39 mm).</td>
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<tr>
<td><strong>Sub-Himalayan West Bengal</strong> (Cooch Behar, Alipurduwar, Jalpaiguri, North Dinajpur, South Dinajpur and Malda)</td>
<td>Light to heavy rainfall is expected during 5-8 June, 2020 (total rain upto 89 mm). Maximum temperature ($T_{\text{max}}$) is expected to be around 25-34°C, and minimum temperature ($T_{\text{min}}$) of around 21-27°C.</td>
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<tr>
<td><strong>Assam</strong>: Central Brahmaputra Valley Zone (Marigaon, Nagaon)</td>
<td>Light to moderate rainfall/thunder shower is expected during 5-8 June, 2020 (total rain upto 64 mm). Maximum temperature is expected to be around 29-31°C, minimum temperature of around 21-23°C.</td>
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<tr>
<td><strong>Assam</strong>: Lower Brahmaputra Valley Zone (Goalpara, Dhubri, Kokrajhar, Baongaigaon, Barpeta, Nalbari, Kamrup, Baksa, Chirang)</td>
<td>Heavy rainfall/thunder shower is expected during 5-8 June (total rain upto 158 mm). Maximum temperature is expected to be around 27-31°C, minimum temperature of around 20-25°C.</td>
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<tr>
<td><strong>Bihar</strong>: Agro-climatic Zone II (Northern East, (Purnea, Katihar, Saharsa, Supaul, Madhepura, Khagaria, Araria, Kishanganj)</td>
<td>Light to moderate rainfall/thunder shower is expected during 5-8 June, 2020 (total rain upto 57 mm). Maximum temperature is expected to be around 28-34°C, minimum temperature of around 22-27°C.</td>
</tr>
<tr>
<td><strong>Odisha</strong>: North Eastern Coastal Plain (Balasore, Bhadrak, Jaipur)</td>
<td>Light rainfall is expected in Balasore on 5th June (7 mm), on 6th June (1 mm), 7th June (1 mm) and no rainfall on 8th June, 2020. In Bhadrak and Jaipur districts, no rainfall is expected during 5-8 June, 2020. Maximum temperature is expected to be around 34-37°C, minimum temperature of around 26-29°C.</td>
</tr>
<tr>
<td><strong>Odisha</strong>: North East and South Eastern Coastal Plains Region: Kendrapara, Khurda, Jagatsinghpur, Puri, Nayagarh, parts of Cuttack, and parts of Ganjam</td>
<td>Light rainfall is expected during 5-8 June, 2020 (total rain upto 3 mm). Maximum temperature is expected to be around 35-40°C, minimum temperature of around 26-29°C.</td>
</tr>
</tbody>
</table>

Source: IMD (https://mausam.imd.gov.in/) and www.weather.com
The very severe cyclone “Amphan” made landfall on 20th May, 2020, lashing with maximum wind speed of 155 kmph. Parts of West Bengal like North 24-Parganas, South 24-Parganas, Kolkata, East and West Midnapore, Howrah and Hooghly and some districts of Odisha like Balasore, Jagatsinghapur were the severely affected and wrecks havoc on life and properties. Thousands of trees were uprooted in the gales, electricity and telephone lines brought down, many houses were flattened and standing crops like jute and rice were affected.

The cyclone severely affected the standing jute crop (20-70 days old crop) in various jute growing areas in West Bengal as well as in Assam. Due to cyclonic storm and heavy rainfall, jute field are severely waterlogged and plants are lodged which may affect the fibre production. The damage can be minimized by adopting following corrective measures.

**Immediate Corrective measures**

- Immediately remove the water by making suitable drainage path on the field bund towards downward slope. After removing the stagnant water from the field, make field ditch (20 cm wide and 20 cm depth at 10 meter interval) for removing the remaining water.
- Straighten the lodged plants of 4 feet and above height by tying 8-10 plants together, if possible, after removing the water.
- Crops up to 30 days age, first remove the excess water from the field and then one protective spray with Copper Oxychloride @ 0.25% or Mancozeb @0.2% is advocated to control seedling blight, damping off diseases during cloud free weather.
III. Agro-advisory for jute crop

1. Timely sown jute crop at 25 March-10 April (Crop age: 70-80 days)

- In cyclone affected areas, waterlogging in jute field occurs that adversely affects the crop. Remove the stagnant water from the field by making suitable ditch along the slope and thereafter spray fertilizer mixture (2% DAP and 1% MOP) to boost the growth and vigour of the crop. The drained out water may be collected and store in nearby pond for future use.

- Infestation of hairy caterpillar after rain when the temperature and relative humidity raises may occurs. Eggs and young larvae are seen in cluster on the leaf surface. The pest spreads quickly and damage the leaves. Early monitoring to spot early infestation is required. Remove the egg masses and newly emerged larvae in bunch. Spray Lambda Cyhalothrin 5EC@ 1ml/litre or Indoxacarb 14.5 SC@ 1.0 ml/litre in extreme cases.

- Another insect, semilooper causes foliar damage in almost all the jute growing tracts. Slender, greenish larvae with light yellow head, narrow dark green dorsal lines are easily noticed when they crawl by producing a loop in the middle. The crop is most susceptible at 50-80 DAS. Damage starts in all cases from unopened leaves in upper part of the plant which represent the most susceptible portion. Damage is restricted to 9 fully opened leaves of the crop. The edges of the tender leaves are eaten, serrated, diagonal cuts occurs in apical leaves. Sometimes damaged stem induce branching. Whenever the damage by semilooper reaches 15% then any contact insecticide such as Profenophos 50 EC @2 ml/litre, Fenvalerate 20EC @ 1.0 ml/litre or Cypermethrin 25EC @ 0.5 ml/litre may be applied. The insecticidal sprays need to be targeted towards the apical portion of the plant rather than covering the whole plant.

- Under warm and humid condition leaf infection by *Macrophomina phaseolina* may occurs which ultimately infect the stem through petioles and leaf margin causing stem rot disease. One protective foliar spray with systemic fungicide like Carbendazim @ 2 g/litre may apply at 20 days interval. Waterlogging may increase the stem rot infection, therefore, proper drainage is essential.

![70-80 days crop affected by cyclone ‘Amphan’, remove water immediately and improve field condition](image1)

![Unaffected crop](image2)

![Under warm humid condition leaf infection by Macrophomina phaseolina may occurs which ultimately causing stem rot diseases. Protective foliar spray with Carbendazim @ 2g/litre may apply at 20 days interval. Avoid waterlogging and improve drainage](image3)
2. Jute sown after 15 April (Crop Age: 60-70 days)

Water Management
- During excess rain due to ‘Cyclonic Depression’ many fields waterlogged that adversely affected crop growth and predispose the crop to stem rot/root rot. Remove excess water from field immediately by creating field ditches (20 cm wide and 20 cm depth) along the gradient at 10 m intervals and improve the field conditions.

Management of Pest and Diseases
- Just after the impact of ‘Amphan’ due to high wind speed and heavy rainfall, all the stages of insect will be washed out. After 10 days of cyclone if the weather clears up, the insect pest infestation may gradually increase depending on the prevailing crop and weather condition.
- Infestation of hairy caterpillar after rain when the temperature and relative humidity raises may occurs. Eggs and young larvae are seen in cluster on the leaf surface. The pest spreads quickly and damage the leaves. Early monitoring to spot early infestation is required. Remove the egg masses and newly emerged larvae in bunch. Spray Lambda Cyhalothrin 5EC@ 1ml/lit or Indoxacarb 14,5 SC@ 1.0 ml/litre in extreme cases.
- Another insect, semilooper causes foliar damage in almost all the jute growing tracts. Slender, greenish larvae with light yellow head, narrow dark green dorsal lines are easily noticed when they crawl by producing a loop in the middle. The crop is most susceptible at 50-80 DAS. Damage starts in all cases from unopened leaves in upper part of the plant which represent the most susceptible portion. Damage is restricted to 9 fully opened leaves of the crop. The edges of the tender leaves are eaten, serrated, diagonal cuts occurs in apical leaves. Sometimes damaged stem induce branching. Whenever the damage by semilooper reaches 15% then any contact insecticide such as Profenophos 50 EC @2 ml/litre, Fenvalerate 20EC @ 1.0 ml/litre or Cypermethrin 25EC @ 0.5 ml/litre may be applied. The insecticidal sprays need to be targeted towards the apical portion of the plant rather than covering the whole plant.
- Under warm and humid condition leaf infection by Macrophomina phaseolina may occurs which ultimately infect the stem through petioles and leaf margin causing stem rot diseases. One protective foliar spray with systemic fungicide like Carbendazim @ 2 g/litre may apply at 20 days interval. Waterlogging may increase the stem rot infection, therefore, proper drainage is essential.

Intercropping
- First harvesting of mung (intercrop with jute) may be done if pods are fully matured. Avoid harvesting in bad weather condition.
**Crop affected by water logging. Drain out the excess water through surface drainage.**

**Hairy caterpillar infestation with high temperature and humidity after rainfall. The pest spreads very quickly. Monitor early infestation and remove the egg masses and newly emerged larvae in bunch. Spray lambda cyhalothrin 5EC @ 1ml/litre or indoxacarb 14.5 SC @ 1.0 ml/litre in extreme cases.**

**If damage by semilooper reaches 15% then contact insecticide such as Profenophos 50 EC @ 2 ml/litre, Fenvalerate 20EC @ 1.0 ml/litre or Cypermethrin 25EC @ 0.5 ml/litre may be applied. The insecticidal sprays need to be targeted towards the apical portion of the plant rather than covering the whole plant.**

**Different stages of stem rot (A)-leaf blight, (B) stem rot and (C) root rot: Apply foliar spray of Carbendazim @ 2g/litre at 20 days interval.**

**Crop affected by water logging.**

**Intercropping mung with jute**

**60-70 days old crop at different places of North and South Bengal.**

**ICAR-Central Research Institute for Jute and Allied Fibers**

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3. Jute sown after 20 April (Crop Age: 40 – 50 days)

**Water Management**

- During excess rain due to ‘Cyclonic Depression’ in many areas, field are waterlogged that adversely affected the crop growth. Remove excess water from field immediately by creating field ditches (20 cm wide and 20 cm depth) along the gradient at 10 m intervals.

**Pest and Disease Management**

- Closed tender leaves of 30-50 day old jute crop may damaged by grey weevils usually after rain. The damage portions in leaves broaden as the plant grows. Weevils are grey in colour with dark white spots, elongated head, visible on plants. Spray combination of (Chlorpyriphos 50EC+Cypermethrin 5EC) @ 1-1.5 ml/l or Chlorpyriphos 20EC @2ml/litre or Quinalphos 25 EC@1.25 ml/litre

- Farmers should also be remain alert about infestation of hairy caterpillar after rain when the temperature and relative humidity raises. Eggs and young larvae are seen in cluster on the leaf surface. The pest spreads quickly and damage the leaves. Early monitoring to spot early infestation is required. Remove the egg masses and newly emerged larvae in bunch. Spray Lambda Cyhalothrin 5EC@ 1ml/lit or Indoxacarb 14,5 SC@ 1.0 ml/litre in extreme cases.

- If drought prevails mite infestation with the symptom of thickening and interveinal crinkling in the terminal young leaves which later turn coppery-brown. Avoid water stress and foliar spray of Fenpyroximate 5 EC @ 1.5 ml/litre or Spiromesifen 240 SC @ 0.7 ml/litre or Propargite 57 EC @ 2.5 ml / litre alternatively in rotation at 10 days interval if infestation persist beyond 10 days. In case of rain, wait for at least 5-6 days to initiate the Acaricide spray if symptoms initiates/persists

- Another insect, semilooper causes foliar damage in almost all the jute growing tracts. Slender, greenish larvae with light yellow head, narrow dark green dorsal lines are easily noticed when they crawl by producing a loop in the middle. The crop is most susceptible at 50-80 DAS. Damage starts in all cases from unopened leaves in upper part of the plant which represent the most susceptible portion. Damage is restricted to 9 fully opened leaves of the crop. The edges of the tender leaves are eaten, serrated, diagonal cuts occurs in apical leaves. Sometimes damaged stem induce branching. Whenever the damage by semilooper reaches 15% then any contact insecticide such as Profenophos 50 EC @2 ml/litre, Fenvalerate 20EC @ 1.0 ml/litre or Cypermethrin 25EC @ 0.5 ml/litre may be applied. The insecticidal sprays need to be targeted towards the apical portion of the plant rather than covering the whole plant

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**Cyclone hit water logged field, drain out stagnant water immediately**

**50-60 days old jute crop unaffected by cyclone**
Hairy caterpillar infestation with high temperature and humidity after rainfall. The pest spreads very quickly. Monitor to spot early infestation and remove the egg masses and newly emerged larvae in bunch. Spray lambda Cyhalothrin 5EC@ 1ml/litre or Indoxacarb 14,5 SC@ 1.0 ml/litre in extreme.

Control of grey weevils with Spray combination of Chlorpyriphos 50EC+cypermethrin 5EC @ 1-1.5 ml/litre or Chlorpyriphos 20EC @2ml/litre or Quinalphos 25 EC@1.25 ml/litre.

Avoid water stress, maintain soil moisture and foliar spray of Fenpyroximate 5 EC @ 1.5 ml/litre or Spiromesifen 240 SC @ 0.7 ml/litre or Propargite 57 EC @ 2.5 ml / litre alternatively in rotation at 10 days interval.

Damaged caused by severe cyclone and rain. Immediately remove water from the field and improve the field condition through intercultural operation (A, B, C).
### 4. Jute sown last week of April (Crop age: 35-45 days)

**Water Management**
- During excess rain due to ‘Cyclonic Depression’ the field may be waterlogged that adversely affect the crop growth. Remove excess water from the field immediately creating field ditches (20 cm wide and 20 cm depth) along the gradient at 10 m intervals.

**Nutrient Management**
- If last top dressing is due, apply 20 N/ha under assured moisture condition or apply one irrigation after top dressing and maintain 50-55 plants/square meter.

**Pest and Disease Management**
- Unopened tender leaves of 30-50 day old jute crop may damaged by grey weevils usually after rain. The damage portions in leaves broaden as the plant grows. Weevils are grey in colour with dark white spots, elongated head, visible on plants. Spray combination of (Chlorpyriphos 50EC+Cypermethrin 5EC) @ 1-1.5 ml/litre or Chlorpyriphos 20EC @2ml/litre or Quinalphos 25 EC@1.25 ml/litre
- Farmers should be alert about the initial infestation of hairy caterpillar after rain when the temperature raises with high humidity. Eggs and young larvae are seen in bunch on the leaf surface. The pest spreads quickly and damage the leaves. Monitor to spot early infestation. Remove the egg masses and newly emerged larvae in bunch. Spray Lambda Cyhalothrin 5EC@ 1ml/litre or Indoxacarb 14.5 SC@ 1.0 ml/litre in extreme cases.
- The mite insect appears at 30-35 DAS with the symptom of thickening and interveinal crinkling in the terminal young leaves which later turn coppery-brown. Avoid water stress, maintain soil moisture at field capacity to reduce the damage by mite infestation. Foliar spray of Fenpyroximate 5 EC @ 1.5 ml/litre or Spiromesifen 240 SC @ 0.7 ml/litre or Propargite 57 EC @ 2.5 ml / litre alternatively in rotation at 10 days interval if infestation persist beyond 10 days. In case of rain, wait for at least 5-6 days to initiate the Acaricide spray if symptoms initiates/persists.
5. Jute sown in first week May (Crop age: 30-35 days)

**Plant Management**
- If weeding and thinning operation is not done at 3rd week stage, operate mechanical weeder with scraper of ICAR-CRIJAF Nail Weeder or Single Wheel Weeder to remove established weeds. Maintain the plant population (50-55 plant/square meter) by thinning. In extreme drought, apply one shallow irrigation (3 cm)

**Nutrient Management**
- After weeding and thinning, apply top dressing of Nitrogen fertilizer @ 20kg/ha in medium and high fertile soil (40 DAS) and irrigate the crop. In low fertile soil it is @ 27 kg/ha.

**Water Management**
- During excess rain due to ‘Cyclonic Depression’ the field may be waterlogged that adversely affect crop growth. Remove excess water from field immediately creating field ditches (20 cm wide and 20 cm depth) along the gradient at 10 m intervals.

**Pest and Disease Management**
- Grey weevils may damaged unopened tender jute leaves of 30-50 day old usually after rain. The damage in leaves broaden as the plant grows. Weevils are grey in colour with dark white spots, elongated head, visible on plants. Spray combination of (Chlorpyriphos 50EC+Cypermethrin 5EC) @ 1-1.5 ml/litre or Chlorpyriphos 20EC @2ml/litre or Quinalphos 25 EC@1.25 ml/litre
- If drought persists mite infestation may appears. Avoid water stress and foliar spray of Fenpyroximate 5 EC @ 1.5 ml/litre or Spiromesifen 240 SC @ 0.7 ml/litre alternatively in rotation at 10 days interval if infestation persist beyond 10 days. In case of rain, wait for at least 5-6 days to initiate the Acaricide spray if symptoms initiates/persists.
- The farmers are advised to be vigilant at this stage on the infestation of indigo caterpillar also. Spray Chlorpyriphos 20EC @ 2ml/Litre of water in the afternoon if infestation persists.
IV. Agro-Advisory for Allied Fibres

A) SISAL

**Preparation & Maintenance of Secondary Nursery**
- Bulbils raised in the primary nursery should be planted in secondary nursery at spacing of 50 × 25 cm. Every 11th row is skipped to get space facilitating weeding and other intercultural operation.
- Sisal compost or FYM @ 5 tonnes / ha and N: P₂O₅: K₂O:: 60 : 30: 30 kg /ha should be applied at the time of preparation of nursery for rapid development of sisal plantlets in secondary nursery.
- Nitrogen can be applied in 3 splits - 1/3rd at basal, 1/3rd at 1st weeding (28 days after planting) and 1/3rd at 50-55 days after planting.

**Maintenance of New Sisal Planation**
- Weeding should be done in 1-2 years old sisal plantation to reduce competition for nutrient and water.

**Double-rowed Sisal Plantation**
- Well drained field having soil depth of at least 15 cm should be selected for sisal plantation. The whole land need not be ploughed, when sisal plantation is taken in sloppy land.
- Demarcation of land for the main field, cleaning of bushes and weeds and pitting of 1 ft³ size with spacing 3.5 m + 1m x 1m for Double row sisal plantation should be done.
- Pit should be filled up with mixture of soil and sisal compost or FYM for making soil porous. Lime should also be added @ 2.5 tonnes per hectare in acidic soil and the filling of soil in the pit should be 1-2 inch above the ground level for proper establishment of the suckers.

**Inter cropping in Sisal Plantation**
- Kharif crops like brinjal, elephant footyam and ragi can be profitably grown in interspace of double rowed sisal plantation and maintenance of existing intercrops.

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**Harvesting of sisal leaves**

**Secondary nursery**

**Double row sisal plantation**

**Zebra disease of sisal**

**Spraying of Copper Oxychloride @ 2-3 g/litre water**

**Inter cropping Elephant Footyam**

**Intercropping with ladies finger**

**Inter cropping with pome granate**
As per forecast, medium to heavy/thunder showers are very likely to occur in Assam (Barpeta district), therefore, provision of draining out of rain water is very much essential as the crop is very sensitive to waterlogging.

Timely harvesting of ramie crop is most important operation, which is to be done after every 45-60 days old plant. Stem colour turns green to brown beyond this period, which is indication of over maturity of fibre and poor quality as well. Ramie farmers must be attentive to avoid this situation.

Stage back operation is recommended in old plantation for uniform crop stand and followed by application of recommended dose of fertilizers i.e. 30-15-15 kg/ha of NPK.

For new plantation gap filling may be done if uniformity in crop stand is not achieved.

Application of Quizalofop Ethyl 5% EC @ 1.0 ml/litre significantly reduces all grassy weeds. Application should be based on intensity of weeds more especially grassy weeds.

Insect pests like Indian red admiral caterpillar, Hairy caterpillar, Lady bird beetle, Termites, Leaf beetle and Leaf roller may be seen in the field. Based on the incidence of these pests spraying of 0.04% Chlorpyriphos is recommended.

Diseases like Cercospora leaf spot, Sclerotium rot, Anthracnose leaf spot, Damping off and yellow mosaic may be seen during these times. Based on the occurrence of these diseases foliar spraying of fungicides such as Mancozeb @2.5 ml/litre or Propiconazole @1 ml/litre is recommended.
C) SUNNHEMP

1. Farmers sown sunnhemp crop during mid April (Crop age: 50-55 days)
   - Farmers are advised to be vigilant on the infestation of hair caterpillar, if substantial infestation observed, spraying of Chloropyriphos 20EC @ 2ml/litre any Neem based formulations @ 3-4ml /litre is recommended.
   - If drought condition persist and there is no likelihood of immediate rain one light irrigation may be provided
   - There may be incidence of viral diseases like leaf curl and sunnhemp mosaic. Affected plant may be removed and destroy to prevent the further spread of the disease

2. Farmers sown the crop after 20 April (Crop age: 45-50 days)
   - The farmers are advised to be vigilant on leaf curl and phyllody infection. If infection observed, uprooting and burning of infected plants followed by spraying of Imidacloprid 17.8 SL @ 0.5-1ml/lit is recommended to minimise vector population.
   - If dry condition persists flea beetle infestation may occurs which feeds on the leaves making small holes. Farmers are also advised to be vigilant on the infestation of hair caterpillar, if substantial infestation observed, spraying of Chloropyriphos 20EC @ 2ml/litre any Neem based formulations @ 3-4ml /litre is recommended.
   - Under extreme heat condition one irrigation is recommended.
3. Farmers sown sunnhemp crop in last week of April (Crop age: 35-45 days)

- If no rainfall occurs or water stress is observed one light irrigation is advocated at 35 days after sowing. Maintain plant population (55-60 plant/square meter).
- If dry condition persists flea beetle infestation may occur which feeds on the leaves making small holes. Farmers are also advised to be vigilant on the infestation of hair caterpillar, if substantial infestation observed, spraying of Chloropyriphos 20EC @ 2ml/litre or any Neem based formulations @ 3-4ml /litre is recommended.

4. Farmers sown the crop in first week of May (Crop age: 30-35 days)

- Under water stress, one light irrigation is advocated. One hand weeding after irrigation is required at 35 days after sowing for better growth and maintain plant population (55-60 plant/square meter).
- If weeding is not done, one scraper/ wheel hoe or hand weeding may be given between rows to control weeds, thinning of excess plants need to be done to maintain optimum plant population (55-60 plant/square meter).
- Under drought stress, flea beetle infestation may occur which feeds on the leaves making small holes. Farmers to be vigilant on the infestation of hair caterpillar, if substantial infestation observed, spraying of Chloropyriphos 20EC @ 2ml/litre or any Neem based formulations @ 3-4ml /litre is recommended.
1. Mesta crop not yet sown

- Prepare land for sowing of Mesta (Roselle and Kenaf). For Roselle, variety like AMV-5, MT-150 and HS-4288 and for Kenaf variety like JRM-3 (Sneha) and JBM81 (Shakti) may be used. Before sowing seed should be treated with Carbendazim @2 g kg\(^{-1}\).
- For broadcasting and line sowing, seed rate should be 15 kg and 12 kg ha\(^{-1}\) respectively. Spacing should be 30 cm x 10 cm and depth of sowing is 2-3 cm. Laddering after sowing is essential for conservation of soil moisture and better germination of seed. Under rainfed condition sowing @12-14 kg seed/ha in open furrows developed by cultivators may be done to save from phasic drought. Fertilizer dose is N:P:K::60:30:30 with elemental sulphur @30 kg/ha (soil < 20 kg sulphur/ha).
- The recommended fertilizer for rainfed conditions is N:P\(_2\)O\(_5\):K\(_2\)O::40:20:20 kg ha\(^{-1}\) and N:P\(_2\)O\(_5\):K\(_2\)O::60:30:30 kg ha\(^{-1}\) under irrigated conditions. Nitrogenous fertilizer needs to be applied in 2-3 spilt dose. Phosphorus and potash should be applied as basal along with 5 t FYM/ha. Farmers can also refer Soil Health Card for actual NPK requirement as per their soil test report.
- Under rainfed conditions, pre emergence application of Butachlor 50% EC @ 4 ml/litre water after 24-48 hrs of sowing to control weeds and pre emergence application of Pretilachlore 50 EC @ 3 ml/litre water after 40-48 hrs of sowing to control weeds under irrigated conditions and spray solution of 500-600 litres water/ha is necessary.
- For insurance, strip cropping with black gram (4:4) or intercropping with maize or groundnut are advocated.

2. Sowing of mesta in last week of May (crop age 10 days)

- Prepare drainage channel along the slope of the land.
- Spray Quizalofop Ethyl 5% EC or 10% EC @ 1.0 ml or 0.7 ml/litre at 10 days after sowing (DAS) followed by one manual weeding. For established weed control, use scrapper of CRIJAF Nail weeder at 10 DAS.
V. Safety and preventive measures to be taken to prevent spread of COVID-19 virus

1) Farmers should follow social distancing, safety measures and to maintain personal hygiene by washing hands with soap, wearing of face mask and protective clothing at each and every step in the entire process of field operations like land preparation, sowing, weeding, irrigation.

2) Prefer sowing operations by CRIJAF seed drill over the broadcasting wherever feasible. Also stagger the field operations wherever possible and avoid engaging more number of persons for sowing and land preparation on the same day.

3) Proper sanitation and cleanliness of machine like seed drill, nail weeder, irrigation pump, tilling equipment, tractor etc. are to be maintained especially when machines are shared and used by farmer groups.

4) Also maintain safe distance of 3-4 feet during rest, taking of meals, seed treatment at home, loading/unloading of manures and fertilisers.

5) Engage only familiar persons to the extent possible and after reasonable enquiry as to avoid the entry of any suspect or likely carrier during field activity.

6) Collect the seed, fertilizer, pesticides and other inputs from known shop and after returning from market immediately wash your hands and exposed parts of the body. Always use face masks while going market for seed purchase.

7) Install Aarogya Setu app in your mobile to know the essential health services related to COVID-19

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- Wash your hands
- Use a tissue for coughs
- Avoid touching your face
- Wear face mask
VI. Advisory for jute mill workers

- The workers staying inside the mills may be engaged in multiple numbers of short duration shifts (with minimum number of workers/shift) for running the mills in staggered manner.
- In general adequate numbers of washing points are to be given inside the mills so that the workers can wash hands more frequently. During the duty the workers should not smoke.
- The toilets must be cleaned, sanitized for more number of times to check the spread of virus infection.
- The workers are advised to use gloves, face mask, shoes, proper protective clothing while working in the mill.
- Inside the mill, the working points are to be relocated so that sufficient distances are maintained among the personnel as per the need of social distancing to suppress the transmission of the virus.
- The workers who are exposed to working surfaces more frequently, most of the time touch and handle important points of machines like switches, livers etc. should be extra precautions in hand sanitization and hand washing with soap. Besides, such surfaces and machine parts should be cleaned with soap water to remove the infective virus.
- The aged high risk workers should be allowed to work in more isolated places inside the mill premises so that their chances of exposure to others is reduced to great extent.
- The mill workers must avoid gathering during tiffin/lunch hours, must maintain 6-8 ft distance between two individuals and wash their hands properly before taking foods.
- The workers must report the doctor or the mill owners immediately in case any type of symptoms related to the COVID infection.

Wish you all a healthy and safe stay!

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Acknowledgement: The Institute acknowledges the contribution of Chairman and Members of the Committee of Agro-advisory Services of ICAR-CRIJAF; Heads of Crop Production, Crop Improvement and Crop Protection division, In-charges of AINPNF and Extension section of ICAR-CRIJAF and other contributors of their division/section; In-charges of Regional Research Stations of ICAR-CRIJAF and their team; In-charge AKMU of ICAR-CRIJAF and his team for preparing this Agro-advisory (Issue No: 09/2020)