

AGRO-ADVISORY TO GROWERS OF JUTE AND ALLIED FIBRES

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**भाकृअप -केन्द्रीय पटसन एवं समवर्गीय रेशा अनुसंधान संस्थान
ICAR-Central Research Institute for Jute and Allied Fibers**

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**Agro-advisory to Farming Community of Jute and Allied Fibres
(25 July- 04 August, 2020)**

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

State/Agroclimatic Zone/Region	Weather Forecast
Gangetic West Bengal (Murshidabad, Nadia, Hoogly, Howrah, North 24-Prganas, Purba Burdwan, Paschim Burdwan, South 24-Parganas, Bankura, Birbhum)	Light to moderate rainfall is expected during 25-28 July, 2020 (total rain upto 51 mm). Maximum temperature (T_{max}) is expected to be around 31-35°C, and minimum temperature (T_{min}) of around 26-28°C.
Sub-Himalayan West Bengal (Cooch Behar, Alipurduwar, Jalpaiguri, North Dinajpur, South Dinajpur and Malda)	Moderate to heavy rainfall/thunder shower is expected during 25-28 July, 2020 (total rain upto 133 mm). T_{max} is expected to be around 24-35°C, and T_{min} of around 21-26°C.
Assam: Central Brahmaputra Valley Zone (Marigaon, Nagaon)	Moderate rainfall/thunder shower is expected during 25-28 July, 2020 (total rain upto 84 mm). Maximum temperature is expected to be around 32-37°C, minimum temperature of around 23-26°C.
Assam: Lower Brahmaputra Valley Zone (Goalpara, Dhubri, Kokrajhar, Baongaigaon, Barpeta, Nalbari, Kamrup, Baksa, Chirang)	Moderate to heavy rainfall/thunder shower is expected during 25-28 July (total rain upto 102 mm). Maximum temperature is expected to be around 32-36°C, minimum temperature of around 24-26°C.
Bihar: Agro-climatic Zone II (Northern East) (Purnea, Katihar, Saharsa, Supaul, Madhepura, Khagaria, Araria, Kishanganj)	Moderate to heavy rainfall/thunder shower is expected during 25-28 July, 2020 (total rain upto 88 mm). Maximum temperature is expected to be around 31-34°C, minimum temperature of around 25-26°C.
Odisha: North Eastern Coastal Plain (Balasore, Bhadrak, Jajpur)	Very light to light rainfall/thunder shower is expected during 25-28 July, 2020 (total rain up to 11 mm). Maximum temperature is expected to be around 33-36°C, minimum temperature of around 26-27°C.
Odisha: North East and South Eastern Coastal Plains Region Kendrapara, Khurda, Jagatsinghpur, Puri, Nayagarh, parts of Cuttack, and parts of Ganjam	Very light to light rainfall is expected during 25-28 July, 2020 (total rain upto 20 mm). Maximum temperature is expected to be around 33-35°C, minimum temperature of around 25-27°C.

Source: IMD (<https://mausam.imd.gov.in/>) and www.weather.com

II. Agro-advisory for Jute Crop

1. Timely sown jute crop at 25 March-10 April (Crop age: 120-130 days)

- Farmers should immediately harvest their jute crop, keep jute bundles in the field for 3 to 4 days for leaf shedding, as leaves after decomposition will add organic matter and some amount of plant nutrients in the soil.
- Do not use banana stems as covering material over the 'jak'. Direct use of mud or soil over the jak leads to poor quality fibre which should be avoided, instead, farmers can use old cement or fertilizer bags filled with soil or mud as weighing material. Use of reusable plastic bags filled with water can be an alternate option as weighing material.
- If available, farmers can use water hyacinth over the 'jak', it improves fibre quality.
- Use 'Crija Sona' for faster retting with quality improvement and higher fibre recovery @ 4 kg/ bigha of harvested jute plants. 'Crija Sona' should be applied in each layer of jak, higher amount at the basal portion and less amount at the top portion of the plants during jak preparation.
- Farmers using 'Crija Sona' for jute retting should check the 'jak' after 8 to 10 days of its application to avoid over retting.
- If retting is over, extract the fibre, wash it in water and dry it in the sun, dry fibre should not have more than 10% moisture.



1. Checking of 'jak' (for complete retting) should be done after 10 days if applied CRIJAF Sona
2. Ensure that the 'jak' should be in submerged condition for proper retting



Harvesting of 120 days old crop, and keep the bundle in field for 3-4 days for leaf shedding



'Jak' preparation in nearby water body



Covering of 'jak' with water hyacinth (if available) that improve fibre quality

2. Jute sown after 15 April (Crop Age: 110-120 days)

- As the jute crop is in mature stage (120 days old), farmers can harvest their jute crop. After harvest of the crop, jute bundles should be kept upright in the field for 3 to 4 days for leaf shedding, these leaves after decomposition will return some amount of plant nutrients taken by the plants during growth. Sort the chads pat (< 1.5 m) properly for smooth retting.
- Do not use banana stems as covering material over the jak. Direct use of mud or soil over the 'jak' also leads to poor quality fibre which should be avoided, instead, farmers can keep the mud or soil in the old cement or fertilizer bags as weighing material. Farmers can use reusable plastic bags filled with water as weighing material over jak for better fibre quality. If available, farmers can use water hyacinth over the jak, it improves fibre quality.
- Farmers can use "CRIJAF Sona" for faster retting with quality improvement and higher fibre recovery @ 4 kg/ bigha (30kg/ha)of harvested jute plants. CRIJAF Sona should be applied during the preparation of jak at each layer of jute plants, in such a way that, more amount of the CRIJAF Sona powder will be applied at the basal portion of the jute plants and less amount at the top portion of the plants.



1. Harvesting of 120 days old crop



2. Bundle making allow for leaf shedding



3. Jak preparation



4. Application of CRIJAF Sona over the jak for quality retting and reducing retting duration



5. Application of load (sand/stone/soil etc.) in cement bag over the jak to submerge the jak



6. Alternative load i.e. water in plastic bag put over the jak to submerge it

3. *In-situ* Tank based Farming System in Jute and Mesta

- Keeping in view the erratic distribution of rainfall, non-availability of community retting tank, declined per capita availability of water resources, high cost of cultivation and labour and dryness of rivers, ponds/canals, farmers face problems of proper retting of jute and mesta. Due to retting with poor quality water of community pond and sometimes with insufficient water, quality of fibre is affected and is not internationally competitive.
- To overcome such problems, in-situ retting tank based farming system model can be adapted by the farmers before rainy season to make jute and mesta farming more profitable. Since the annual rainfall of jute growing states are high, ranges from 1200 to 2000 mm and 30-40% of the rainfall goes as runoff, some portion of runoff water can be harvested by constructing a tank in the lower most corner of the field.

Dimension of the Pond and Retting Process for one acre of harvested raw jute

- The pond dimension of 40 ft × 30 ft × 5 ft was sufficient for retting of jute harvested from half acre of land at a time. Jute harvested from one acre can be used for retting easily in two cycles. The pond bund should have sufficient width (1.5-1.8 m) to grow plants like papaya, banana and vegetables. The total area of farming system which includes digging and bund area will be 180 m². If farmers want to afford more land under farming system, pond dimension of 50 ft x 40 ft x 5 ft can be adopted
- Provision should be made for appropriate lining of in-situ retting tank with LDPE agri-film of 150-300 microns to minimize the seepage and percolation loss, particularly in light textured soil.
- Three jaks should be prepared at a time and each jak should consist of three layers. Gap of 20- 30 cm from jak to the soil bottom and 20-30 cm water above the jak should be maintained.

Advantages of in-situ retting tank

- The cost of transporting the harvested jute bundles to the conventional retting spot (about Rs. 4000 - 5000/ acre) can be saved by constructing in-situ retting pond.
- By using CRIJAF Sona, retting can be completed with in 12 to 15 days compared to 18 to 21 days under conventional retting. CRIJAF Sona @14 kg per acre should be used for retting purpose. During 2nd cycle retting, dose of CRIJAF Sona can be reduced to 50% by which Rs. 400/- can also be saved.
- Fibre quality can be improved by at least one to two grades because retting will be performed in freshly harvested rainwater and also with free flowing rainwater of the rainy season.

In addition to retting of jute and mesta, the harvested water can be utilized in multiple ways

1. Dyke based horticulture (papaya, banana, seasonal vegetables) (Profit of about Rs. 10,000-12,000/- per tank)
2. Rearing of air breathing fish like telapia, magur and singhi, 50-60 kg
3. Apiaries (Profit from honey around Rs. 7000/- per tank) and also honey bees will help in pollination
4. Mushroom cultivation and vermicomposting.
5. Approximately 50 nos. ducks can be reared in the pond which result in additional income of Rs. 5000 /-.
6. After retting, the water can be utilized for providing supplement irrigation to crops in jute based cropping sequence resulting additional income of Rs 4000/acre.

Thus, by loosing jute of Rs. 1000 to 1200 after construction of in-situ retting tank in the field, farmers can earn about Rs. 30,000/- in that area from multiple farming with saving of transport cost another about Rs. 4000-5000/- This technology will also be helpful in reducing negative impacts from extreme weather events like drought, cyclone, flood etc.



***In-situ* retting tank for jute and mesta based farming system developed at ICAR-CRIJAF Farm**

Temporary Retting Pond

- Places where retting water is not available, temporary retting pond can be created by digging or raising one metre bund in the selected area. For one bigha (0.13ha) jute, the pond size is 10.0m × 8.0m x 1.0m
- Fill the pond with ground water. Three days before jute steeping, add 50 kg sunnhemp twig, 100 kg old retting tank mud, 1 kg molasses and 1 kg ammonium sulphate for quick microbial culture development.
- Arrange jute bundles in 3 layers in alternate manner. As weight material put soil filled 40 cement bags over jute bundles.
- Drain out tanned water before fibre extraction from micro pond and refill it with fresh water. Continue the flow of water for one hour to remove remaining tanned water. Jute rets within 20-27 days.
- Use of CRIJAF Sona (4 kg/bigha) will reduce the retting duration by 4-5 days.
- After fibre extraction, dismantle the bunds, puddle the pond floor and transplant rice as usual.



Digging of temporary pond



Method of jakking in the pond for retting

4. Jute sown after 20 April (Crop Age: 90-100 days)

- The farmers are advised not to take any further crop protection measure if the crop is harvested in time (120 days crop age). However, he should be vigilant on infestation and outbreak of hairy caterpillar in late harvested crop.
- Waterlogging at this stage may aggravate the incidence of stem rot/root rot. Therefore, remove water through proper drainage. Remove the affected plants and plant with lanky growth which do not add any effective fibre yield.
- In very low land situation when removal of stagnant water from jute field is not possible and the crop has already attained 100-110 days, farmers may harvest the crop to realize around 80 % of normal fibre yield. This exceptional practice may meet the return from investment. As water stagnation is there, it is not possible to keep the crop for leaf shedding in the field, in such case, prepare the “jak” in 2 to 3 layers depending on the depth of water in the retting tank.
- Do not use banana stems as covering material over the jak. Direct use of mud or soil over the jak should also be avoided, instead, farmers can keep the mud or soil in the old cement or fertilizer bags as weighing material. Direct use of banana stem and mud over the jak will produce black coloured jute fibre with very low fibre quality.
- Farmers can use “Crijaif Sona” for faster retting with quality improvement and higher fibre recovery @ 4 kg/ bigha of harvested jute plants. Crijaif Sona should be applied during the preparation of jak at each layer of jute plants, in such a way that, more quantity of the Crijaif Sona powder is to be applied at the basal portion of the jute plants as compare to the terminal portion of the plants.



110 days crop at North 24 Pgs



100 days crop at Hoogly



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



At emergency and continuous waterlogged condition, harvesting of 100 days old crop may be done



Preparation of 'Jak' in nearby water body after harvesting

5. Jute sown last week of April (Crop age: 75-85 days)

- In case of dense crop foliage and warm weather vigilant about the infestation of hairy caterpillar. Search, remove and damage the egg masses if any. The pest should be managed depending on the severity of damage with spraying of Lambda Cyhalothrin 5EC@ 1ml/lit or Indoxacarb 14.5 SC@ 1.0 ml/litre in extreme cases.
- Another insect, semilooper may causes foliar damage at this stage also. 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, incidence of stem rot and root rot may aggravate. Under such condition avoid waterlogging through proper drainage. Remove the affected plants and plant with lanky growth which do not add any effective fibre yield.
- In very low land situation when removal of stagnant water from low land jute field is not possible and the crop is 90-100 days old, farmers may harvest the crop to realize about 70 % of normal fibre yield. Prepare the "jak" in 2 to 3 layers depending on the depth of water in the retting tank. Do not use banana stems and mud or soil over the jak directly. Use "Crijaf Sona" @ 4 kg/ bigha for faster retting and quality fibre.



90-100 days old crop

Hairy caterpillar infestation with high temperature and humidity after rainfall. The pest spreads very quickly. 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



At emergency and continuous waterlogged condition, harvesting of 80-90 days old crop may be done

Under normal condition 5-10 % incidence of stem rot /root rot is observed. Waterlogging at this stage aggravate the incidence. Therefore, remove the water from the field and remove the infected and lanky plant to check further spread and hassle-free fibre extraction after retting



6. Jute sown in first week May (Crop age: 70-75 days)

- 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. Foliar spray with systemic fungicide like Carbendazim @ 2 g/litre may apply at 20 days interval. Waterlogging may increase the stem rot/root rot, therefore, proper drainage is essential. Remove the affected plants and plant with lanky growth which do not add any effective fibre yield.
- 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.
- In very low land situation when removal of stagnant water from low land jute field is not possible and the crop is 80-90 days old, farmers may harvest the crop to realize 50-60 % of normal fibre yield. This exceptional practice may partly meet his investment on jute cultivation



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



Severe incidence of stem rot /root rot in farmers' field in Hoogly district of West Bengal. Integrated approach of control from next seasons: (a) application of lime in acidic soil @2-4 ton /ha (b) avoid Potato – Jute sequence (c) seed treatment with Carbendazim @2g/kg or Trichoderma @10g/kg seed (d) avoid water logging in the field (e) at initial stage foliar spray of Carbendazim @ 2g/litre



If 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.

III. Agro-Advisory for Allied Fibres

A) SISAL

Maintenance and raising of Secondary Nursery

- The farmers who have already raised secondary nursery, should give due attention for drainage of nursery area as well as keeping the nursery weed free. Intercultural operation and spraying with Matalaxyl ,25%+Mancozeb 72% wp (0.25%) should be taken up for obtaining healthy sucker. Application of sisal compost will be helpful for supplying nutrient to the soil as well as for suppression of weed growth also.
- Farmers who are yet to raise Secondary Nursery must plant the bulbils in secondary nursery at a spacing of 50×25 cm after pruning of older lower leaves as well as roots and treatment with Mancozeb 64% + Metalaxyl 8% @ 2.5 g per litre of water for 20 minutes. 80,000 bulbils can be raised in one-hectare nursery area out of which about 72000-76000 of suckers will usually survive. It is assumed that mortality of bulbils in secondary nursery is 5-10 percent.
- Bulbils should be planted in secondary nursery in rows with help of dibbler at a depth of 5 to 7.5cm. The bulbils should be planted in such a way that neck region is at ground level. Every 11throw is skipped to facilitate 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 secondary nursery for rapid development of sisal plantlets in secondary nursery. Nitrogen should be applied in 3 spits- 1/3rd at basal, 1/3rd at 1st weeding (28 DAP) and 1/3rd at 50-55 days after planting. The above practices are same for Hybrid sisal.

Collection of Sucker from Main Field

- In addition to growing of bulbil in primary nursery followed by secondary nursery to produce the sucker as planting material, sisal sucker can also be collected from the main plantation. Generally, 2-3 suckers are produced per annum, which is also the potential source of planting material and can be directly planted in the main field. These suckers are uprooted after the onset of the monsoon. The old roots should be trimmed and damaged withered leaves also should be removed before planting. Care should be taken so that bole (crown region) of the plant is not damaged during trimming of old roots.

Maintenance of New Sisal Plantation

- Weeding should be done in 1-2 years old sisal plantation to reduce competition for nutrient and water. Spraying of Copper oxychloride @3.0 g/lit or Mancozeb 64% + Metalaxyl 8% @ 2.5 g per litre of water in case of appearance of first symptom of the zebra disease or alternaria leaf spot of sisal. Application of sisal compost 2 ton/ha with 60:30:60 kg/hac should be taken up immediately for proper growth and yield, those who have not applied till date.



Secondary

Pit digging and planting of suckers in double-row system



Sisal sucker



Double row sisal

Sisal plantation in the Main field

- Sisal suckers should be planted across the slopes and parallel to the contours to check soil erosion. Suckers should not be kept in heap and should be kept in single layer under shade for better survival of plants. The planting of the suckers is to be completed within 45 days of collection. Atleast 100 suckers per hectare should be kept as reserved for gap filling to maintain required plant population.
- Sisal Suckers raised in the secondary nursery should be preferred as planting material compared to sucker obtained from sisal plants from main field to have uniform crop stand. The suckers should have length greater than 30 cm, weight 250 g and consist of 5-6 leaves. Furthermore, suckers should be healthy.
- Suckers raised in the secondary nursery or collected from sisal plantation should be planted in main field after trimming/ pruning of older lower leaves and roots after treatment with Mancozeb 64% + Metalaxyl 8% @ 2.5 g per litre of water for 20 minutes. Suckers should be planted in a hole made in the center of the pits with the help of sharp pointed wood/ho. The suckers should be planted in such a way that neck region is at ground level.
- Sisal compost or FYM @ 5 tonnes/ha and N: P₂O₅: K₂O:: 60:30:60 Kg/ha should be applied for rapid development of sisal plant. Nitrogen should be applied in two equal splits: 50 % during pre-monsoon period and rest during post-monsoon period.
- Farmers who have not prepared main field for sisal plantation till now, may select well drained field having minimum soil depth of 15 cm for sisal plantation. The entire field need not be ploughed, when sisal plantation is taken in sloppy land.
- Demarcation of land for the main field, cleaning of bushes, removal of weeds and pitting of 1 ft³ size with spacing 3.5 m + 1m × 1m for Double-row sisal plantation should be done and about of 4500 suckers per hectare are required. However, even planting can also be taken at spacing of 3.0 m + 1m × 1m under adverse situation with plant population of 5000 per hectare.
- 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 to maintain the pH in range of 6 to 7 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 for additional income

- In the interspace of double row sisal plantation, leguminous crops like cowpea and green gram can be profitably taken up for additional income, which will also act as soil cover crop, fix atmospheric nitrogen and will suppress the weed growth.



Intercropping with 1. ragi 2. cowpea 3. green gram

Maintenance of fruit plant in interspace of sisal

B) RAMIE



- Application of Quizalofop Ethyl 5% EC @ @ 1.0 ml/litre is highly recommended during this time which significantly reduces all grassy weeds.
- Indian red admiral caterpillar, Hairy caterpillar, Lady bird beetle, Termites, Leaf beetle and Leaf roller may be seen in the field and based on the incidence of these pests spraying of 0.04% Chlorpyrifos is recommended. Cercospora leaf spot, Sclerotium rot, Anthracnose leaf spot, Damping off and yellow mosaic may be seen during these times. Spraying of fungicides such as Mancozeb @2.5 ml/lit or Propiconazole @1 ml/lit is recommended. Control operation may be taken up only on the basis of proper monitoring of pests and diseases
- Medium to heavy/ thunder showers are very likely to occur in these areas; therefore field should be well drained during heavy rain as the crop is very sensitive to waterlogging.
- In some fields yellowing of leaves has been found due to water stagnation. Draining of excess water is recommended to protect the crop from complete failure.



Rramie plantation



Harvesting of ramie crop



Ramie fibre extraction



Spraying of non-selective herbicide like Paraquat or Glyphosate



Stagnant water to be removed immediately



Ramie fibre after extraction (un-degummed)

C) SUNNHEMP

1. Sunnhemp crop sown during mid April (Crop age: 100-105 days)

- The farmers are advised to check for completion of retting process, if retting is completed, the bundles are dashed against water for 3 to 4 times to remove excess lignin and then bundles are moved in water to and fro. Washed bundles are stacked vertically for dripping of water from the sticks and fibres.
- When washed bundles of sunnhemp are dried. Fibre from each plant is extracted/peeled off manually from bottom to top side in long strip. The extracted fibre is again dried in the sun, put up in twists and bundles for marketing.



1. Steeping of retted bundle 2. Washing of fibres 3. Stripping of fibre 4. Drying of fibres

2. Sunnhemp crop sown after 20 April (Crop age: 95-100 days)

- The farmers are advised to harvest the crop at 90-100 days. The crop is harvested with the help of sickle and plants are tied in small bundles of 15-20 cm in diameter to facilitate retting and washing. The upper tender portion of the plants are cut and used either as a fodder for cattle or incorporated into soil for green manuring.
- Bundles are then taken to the retting tank where these are kept side by side horizontally to form a plate form of any convenient size and then pressed deep into water (20-25 cm) with the help of bamboo or stones or wooden logs for retting. The retting process requires generally 3-5 days depending upon prevalent temperature. The test for completion of retting is done by separation of bark from the stick.



Harvesting of crop at 90-100 days



Bundling of harvested plant



Making of Jak in nearby water body

3. Sunnhemp crop sown in last week of April (Crop age: 85-90 days)

- Due to high rainfall, water logging conditions in sunnhemp field may occurs that adversely affects the crop and aggravate the incidence of vascular wilt. Water stagnant in the field has to be removed by making suitable ditch along the slope.
- Prepare the nearby pond / waterbody for preparation of jak after harvesting at around 100days.



90 days old crop



Removing of water from the field

4. Sunnhemp crop sown in first week of May (Crop age: 80-85 days)

- If drought condition persist and there is no likelihood of immediate rain one light irrigation may be provided.
- In areas where heavy rainfall occurs waterlogging may happens which may aggravate the wilt incidence, in such cases remove the excess water through surface drainage.
- Farmers are advised to be vigilant on the infestation of hairy caterpillar, if substantial infestation observed, spraying of Lambda Cyhalothrin 5EC@ 1ml/lit or Indoxacarb 14.5 SC@ 1.0 ml/litre is recommended.



75-80 Days old crop



Crop affected by Hairy caterpillar

D) Mesta

2. Mesta sown in last week of May (crop age 60 days)

- Avoid waterlogging and improve drainage so that the crop remain free from biotic and abiotic stress. Very often food and stem rot may aggravate due to water logging. Spray Copper oxychloride 50% @ 4-5g/litre towards the basal region of the plant.
- Similarly, phoma leaf blight is a common disease which affect the leaf from margin and progress inwards. Under humid condition the disease spread fast and defoliate the plant. If substantial infection (>5%) is noticed spray Copper oxychloride 50% @ 4-5g/litre or Mancozeb @ 2g/litre.



60-70 days old crop

3. Sowing of mesta in first week of June (crop age 50-60 days)

- Under warm and humid condition foot and stem rot may occurs which spread very fast with high rainfall. Avoid waterlogging and improve drainage. Spray Copper oxychloride 50% @ 4-5g/litre towards the basal region of the plant.
- Similarly, phoma leaf blight is a common disease which affect the leaf from margin and progress inwards. Under humid condition the disease spread fast and defoliate the plant. If substantial infection (>5%) is noticed spray Copper oxychloride 50% @ 4-5g/litre or Mancozeb @ 2g/litre.
- In case of stretches of dry period, mealybug infestation may occur. Foliar spray of Profenophos 50EC @ 2ml/litre may be taken up after monitoring and removal of mealybug colonies if spotted in large numbers.



60 days old crop

4. Sowing of mesta in mid June (crop age 40-50 days)

- For grass weed control spray Quizalofop ethyl 5% EC @ 0.1% follow by one hand weeding. To remove established weeds operate CRIJAF nail weeder with scrapper or single wheel jute weeder. After weeding second top dressing of nitrogen @20kg/ha to be applied.
- Under warm and humid condition foot and stem rot may occurs which spread very fast with high rainfall. Avoid waterlogging and improve drainage. Spray Copper oxychloride 50% @ 4-5g/litre towards the basal region of the plant.
- Similarly, phoma leaf blight is a common disease which affect the leaf from margin and progress inwards. Under humid condition the disease spread fast and defoliate the plant. If substantial infection (>5%) is noticed spray Copper oxychloride 50% @ 4-5g/litre or Mancozeb @ 2g/litre.



40 days old mesta crop

4. Sowing of mesta in end of June (crop age 30-40 days)

- Remove established weeds using scrapper of CRIJAF Nail Weeder or Single wheel jute weeder and apply second top dressing of Nitrogen @ 20 kg/ha at 40 DAS
- If heavy rainfall occurs, proper drainage is essential for proper growth as well as to protect the crop from soilborne diseases
- Under warm and humid condition foot and stem rot may occurs which spread very fast with rainfall. Avoid waterlogging and improve drainage. Spray Copper oxychloride 50% @ 4-5g/litre towards the basal region of the plant.
- Phoma leaf blight affect the leaf from margin and progress inwards. The progress of the disease is very fast under humid condition. If more than 5% of the leaf affected, spray Copper oxychloride 50% @ 4-5g/litre or Mancozeb @ 2g/litre.
- Farmers are keep vigilant to the infestation of flea beetle which make holes in the cotyledonery stage and growing seedlings. Spray imidacloprid 17.8 SC @0.3 ml/litre or profenophos 50EC @ 2ml/litre
- In case of stretches of dry period, mealybug infestation may occur. Foliar spray of Profenophos 50EC @ 2ml/litre may be taken up after monitoring and removal of mealybug colonies if spotted in large numbers.



Foot and stem rot



Phoma leaf blight of mesta

5. Sowing of mesta in end of June (Crop age 20-30 days)

- After weeds using scrapper of CRIJAF Nail Weeder or Single wheel jute weeder and apply first top dressing of Nitrogen @ 20 kg/ha at 20 DAS
- Farmers are keep vigilant to the infestation of flea beetle which make holes in the cotyledonery stage and growing seedlings. Spray imidacloprid 17.8 SC @0.3 ml/litre or profenophos 50EC @ 2ml/litre
- Under warm and humid condition foot and stem rot may occurs which spread very fast with rainfall. Avoid waterlogging and improve drainage. Spray Copper oxychloride 50% @ 4-5g/litre towards the basal region of the plant
- Similarly, phoma leaf blight is a common disease which affect the leaf from margin and progress inwards. Under severe infection defoliation may occurs. Protective spray with Copper oxychloride 50% @ 4-5g/litre or Mancozeb @ 2g/litre is advocated.
- In case of stretches of dry period, mealybug infestation may occur. Foliar spray of Profenophos 50 EC @ 2ml/litre may be taken up after monitoring and removal of mealybug colonies if spotted in large numbers.

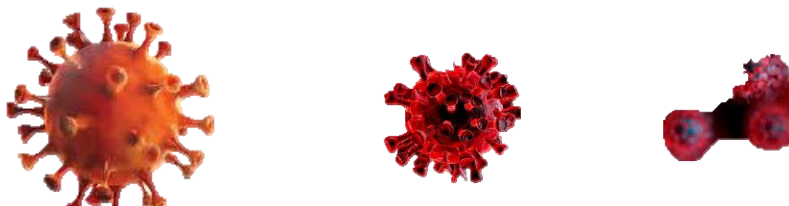


Foot and stem rot



Phoma leaf blight of mesta

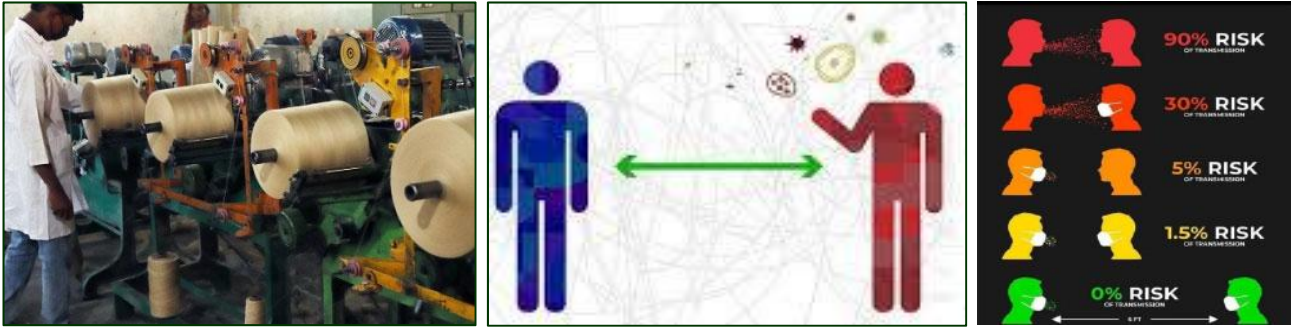
IV. Safety and Preventive Measures to be Taken to Prevent Spread of COVID-19 Virus



- 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) During harvesting of jute and preparation of *jak* in nearby water body, maintain proper distance and use face mask. Engage only familiar persons to the extent possible to prevent the entry of any suspect or likely carrier of COVIT 19 virus.
- 3) Proper sanitation and cleanliness of machine like sickle, 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



V. 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, levers 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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