

AGRO-ADVISORY TO GROWERS OF JUTE AND ALLIED FIBRES

issued by

ICAR-CRIJAF, Barrackpore

16-25 May, 2020 (Issue No: 07/2020)



**भा.कृ.अ.प. -केन्द्रीय पटसन एवं समवर्गीय रेशा अनुसंधान संस्थान
ICAR-Central Research Institute for Jute and Allied Fibers**

An ISO 9001: 2015 Certified Institute

Barrackpore, Kolkata-700120, West Bengal

www.crijaf.org.in



**Agro-advisory to Farming Community of Jute and Allied Fibres
(16 to 25 May, 2020)**

I. Likely weather 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/thunder shower is expected on 19 th May (total rain upto 11 mm). Maximum temperature is expected to be around 33-39°C, and minimum temperature of around 23-26°C.
Sub-Himalayan West Bengal (Cooch Behar, Alipurduwar, Jalpaiguri, North Dinajpur, South Dinajpur and Malda)	Light to moderate rainfall/thunder shower is expected in next 4 days (total rain upto 109 mm). Maximum temperature (T_{max}) is expected to be around 28-36°C, and minimum temperature (T_{min}) of around 18-26°C. In Malda and South Dinajpur - T_{max} will be 36-39°C and T_{min} of 26-27°C, light rainfall is expected (total upto 10 mm).
Assam: Central Brahmaputra Valley Zone (Marigaon, Nagaon)	Light to moderate rainfall/thunder shower is expected in next 4 days (upto rain 61 mm). Maximum temperature is expected to be around 31-33°C, minimum temperature of around 21-22°C.
Assam: Lower Brahmaputra Valley Zone (Goalpara, Dhubri, Kokrajhar, Baongaigaon, Barpeta, Nalbari, Kamrup, Baksa, Chirang)	Moderate to heavy rainfall/thunder shower is expected in next 4 days (total rain upto 157 mm). Maximum temperature is expected to be around 29-32°C, minimum temperature of around 20-24°C.
Bihar: Agro-climatic Zone II (Northern East, (Purnea, Katihar, Saharsa, Supaul, Madhepura, Khagaria, Araria, Kishanganj)	Light to moderate rainfall is expected in next 4 days (total rain upto 56 mm). Maximum temperature is expected to be around 32-40°C, minimum temperature of around 21-27°C.
Odisha: North Eastern Coastal Plain (Balasore, Bhadrak, Jajpur)	Moderate to heavy rainfall/thunder shower is expected on 19 th May (total rain upto 54 mm). Maximum temperature is expected to be around 29-36°C, minimum temperature of around 22-26°C.
Odisha: North East and South Eastern Coastal Plains Region: Kendrapara, Khurda, Jagatsinghpur, Puri, Nayagarh, parts of Cuttack, and parts of Ganjam	Moderate to heavy rainfall/thunder shower is expected on 19 th May (total rain upto 127 mm). Maximum temperature is expected to be around 29-36°C, minimum temperature of around 21-26°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: 50-60 days)

- During excess rain due to 'Norwester' / 'Cyclonic Depression' some field may be waterlogged that adversely affect 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. At optimum condition maintain plant population (55-60 plants/square meter).
- Closed tender leaves of 30-50 day old jute crop may be 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 (Chlorpyrifos 50EC+Cypermethrin 5EC) @ 1-1.5 ml/l or Chlorpyrifos 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.



Timely sown (50-60 days old) jute crop



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



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/lit or indoxacarb 14,5 SC @ 1.0 ml/l in extreme cases.



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.



A. Mite infested crop at 30-35 days after sowing

B. 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



Crop affected by water logging. Drain the excess water through surface drainage



Damaged caused by hailstorm. If damage is > 50-60% resowing may be done otherwise improve the field condition through inter cultural operation

2. Jute sown after 15 April (Crop Age: 30-40 days)

- 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.
- During excess rain due to 'Norwester' / '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.
- Unopened tender leaves of 30-50 day old jute crop may be 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 (Chlorpyrifos 50EC+Cypermethrin 5EC) @ 1-1.5 ml/l or Chlorpyrifos 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/lit 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
- The farmers are also advised to be vigilant about the infestation of indigo caterpillar at 30-40 days crop, spray Chlorpyrifos 20EC @ 2ml/Litre of water in the afternoon if infestation persists.



35-40 days old crop at different places of North and South Bengal



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/lit or indoxacarb 14,5 SC@ 1.0 ml/l in extreme cases.

Control grey weevils infestation with spray combination of Chlorpyrifos 50EC+cypermethrin 5EC @ 1-1.5 ml/l or Chlorpyrifos 20EC @2ml/l or Quinalphos 25 EC@1.25 ml/l



- A. Mite infested crop at 30-35 days after sowing**
B. Avoid water stress, maintain soil moisture and foliar spray of Fenpyroximate 5 EC @ 1.5 ml/litre or Spiromesifen 240 SC @ 0.7 ml/lit or Propargite 57 EC @ 2.5 ml / lit alternatively in rotation at 10 days interval



Damaged caused by hailstorm. If damage is > 50-60% resowing may be done otherwise improve the field condition through inter cultural operation



Water logged crop. Drain the excess water through surface drainage

3. Jute sown after 20 April (Crop Age: 20-30 days)

- If weeding and thinning operation is not done at 3rd week stage, operate mechanical weeders 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) and top dress 2nd nitrogen dose @ 20 kg/ha
- After weeding and thinning, apply top dressing of Nitrogen fertilizer @ 20kg/ha in medium and high fertile soil (20 DAS) and irrigate the crop. In low fertile soil it is @ 27 kg/ha.
- During excess rain due to 'Norwester' / '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.
- Unopened tender leaves of 30-50 day old jute crop may be 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 (Chlorpyrifos 50EC+Cypermethrin 5EC) @ 1-1.5 ml/l or Chlorpyrifos 20EC @ 2ml/litre or Quinalphos 25 EC@1.25 ml/litre
- If drought persists mite infestation may appear at 30-35 DAS. 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 persists beyond 10 days. In case of rain, wait for at least 5-6 days to initiate the Acaricide spray if symptoms initiate/persist.
- The farmers are advised to be vigilant at this stage on the infestation of indigo caterpillar also. Spray Chlorpyrifos 20EC @ 2ml/Litre of water in the afternoon if infestation persists.



30 days old crop at different places of North and South Bengal



A. Mite infested crop at 30-35 days after sowing
B. Avoid water stress and foliar spray of Fenpyroximate 5 EC @ 1.5 ml/litre or Spiromesifen 240 SC @ 0.7 ml/lit or Propargite 57 EC @ 2.5 ml / lit alternatively in rotation at 10 days interval

To control Indigo cater pillar, at 15 DAS, Chloropyrphos 20EC @ 2ml/litre may be sprayed in the afternoon. Repeat it at 8 - 10 days interval, if the problem persists.



Collar rot caused by soil fungi due to dry soil condition. Apply Copper Oxychloride @0.25% solution if incidence is >5%.



Drain the excess rain water through surface drainage as early as possible

4. Jute sown last week of April (Crop age: 15-25 days)

- Operate mechanical weeders with scraper of ICAR-CRIJAF Nail Weeder or Single Wheel Weeder to remove established weeds at 15-20 days after sowing. During continuous rains, weeding by Nail weeder may not be possible. In that situation, apply Quizalofop Ethyl 5EC @ 1.5-2.0 ml/Litre for grass weed control followed by one hand weeding to kill the other weeds.
- In extreme drought condition apply one shallow irrigation (3 cm). In certain places heavy rainfall may occurs in such areas remove excess water from jute fields immediately by creating field ditches (20 cm wide and 20 cm depth) along the gradient at 10 m intervals.
- Apply 1st top dressing of Nitrogen @20 kg /ha at 20 DAS after final weeding and thinning.
- The farmers are also advised to be vigilant at this stage on the infestation of indigo caterpillar. Spray Chlorpyrphos 20EC @ 2ml/Litre of water in the afternoon if infestation persists.
- Collar rot might appear in dry soil condition. Irrigate the field and spray Copper Oxychloride @ 0.25% if incidence is more than 5%. However, in heavy rain condition, 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.



Use scraper of Nail Weeder at 20-21 days after sowing

Use of Single Wheel Weeder at 20-21 days after sowing





To control Indigo caterpillar, at 15 DAS, Chloropyriphos 20EC @ 2ml/litre may be sprayed in the afternoon. Repeat it at 8 - 10 days interval, if the problem persists.

Collar rot caused by fungi due to dry soil condition. Apply Copper Oxychloride @ 0.25% solution if incidence is >5%.

Drain the water through surface drainage as early as possible



5. Jute sown in first week May (Crop age: 10-15 days)

- For post emergence grass weed control, spray Quizalofop Ethyl 5 EC @ 1.5 to 2.0 ml/Litre of water at 15-20 days after sowing and follow one hand weeding to kill the other weeds.
- To remove excess water from jute fields immediately, create field ditches (20 cm wide and 20 cm depth) along the gradient at 10 m intervals.
- Collar rot might appear in dry soil condition. Irrigate the field and spray Copper oxychloride @ 0.25% if incidence is more than 5%. However, in heavy rain condition, 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.



Drain the water through surface drainage as early as possible



If possible use Nail Weeder / single wheel weeder at 10 days after sowing for composite weed control or apply Quizalofop Ethyl @ 1.0 ml/litre for grass weed control

III. Agro-Advisory for Allied Fibres

A) SISAL

- The farmers who have not yet harvested sisal leaves, go for harvesting of leaves during afternoon hours and extract the fibre on the same day, if the maximum temperature is not beyond 40°C. Spraying of Copper Oxychloride @ 2-3 g/litre water may be taken up against disease infestation after harvesting of leaves.
- Weeding and plant protection operation in primary nursery should be taken properly for attaining desired growth so that the same can be transferred to secondary nursery during month of July.
- Demarcation of land, cleaning and pitting of 1ft³ size with spacing of 3.5m + 1m × 1m for Double row sisal plantation should be taken up in the main field. But it is not advisable to plough-open the whole area for sisal cultivation in sloppy and eroded land having no vegetation cover, encouraging further erosion.
- Maintenance of existing intercrops and field preparation for taking different kharif crops in interspace of double rowed sisal plantation should be taken up for additional income. Intercropping with pulses, vegetables, fodder is recommended.
- Spraying of Mancozeb 64 % + Metalaxyl 8 % @ 2.5 g / lit of water and Copper Oxy-chloride @ 3.0 g / lit of water should be taken up in primary nursery and main field respectively, just after the appearance of first symptoms of zebra disease.



A

A. Harvesting of leaves
B. Fibre extraction



B



Inter cultural operation in primary nursery

Zebra disease of sisal
Spraying of Copper Oxychloride @ 2-3 g/litre water



Inter cropping with sapota



Inter cropping with bottle gourd



Inter cropping with fodder

B) RAMIE



- Those farmers have not yet sown, they are suggested to complete the planting immediately. using quality rhizomes/ plantlets of R1411 (Hazarika) variety of ramie. Number of rhizome required for one hectare is 55000 (900kg).
- Make a furrow of about 4-5 cm deep with row to row distance 60-75 cm. Pieces of 10-15 cm length rhizome/ plantlet/ stem cutting are to be planted in the furrow at a distance of 30 cm.
- Application of 20:10:10 kg NPK/ha is recommended those completed sowing during 1st fortnight of March.
- Integrated applications of organic (FYM or Ramie compost about 20-25%) and inorganic sources of nutrients are recommended for balanced nutrition to the crop and for maintaining good soil health.
- Application of Quizalofop Ethyl 5% EC @ 40 g a.i./ha at 20 days of sowing as well as after each cutting significantly reduces all grassy weeds.
- Stage back operation is recommended for old Ramie plantation for uniform crop stand.
- As per weather forecast of Assam, medium to heavy/ thunder showers are very likely to occur. Ramie crop is very much sensitive to waterlogging, therefore field should be well drained during heavy rain.



**Harvesting of
rhizome for planting**

**Planting of ramie in
well prepared soil by
furrow method**



**Stage back operation for
uniform crop stand and
growth**

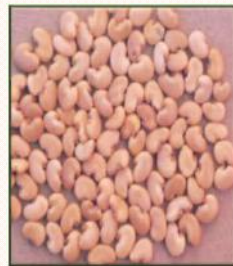
C) SUNNHEMP

1. Farmers who have not yet sown sunnhemp

- Maximum and minimum temperature are predicted to be 38-41°C and 25-26°C, respectively and scanty rainfall is likely to occur during next one week.
- The Farmers are advised for land preparation and sowing of sunnhemp with a pre-monsoon rainfall. Certified seed of improved varieties of sunnhemp such as Prankur (JRJ 610), Ankur (SUIN 037), Shailesh (SH-4), Swastik (SUIN 053) and K-12 (Black) can be sown after seed treatment with carbendazim @ 2g/ kg.
- Basal dose of N: P₂O₅: K₂O @ 20:40-50:40 kg/ha (Urea: SSP: MOP @ 20: 312.5:66.7 kg/h) is recommended for sowing and should be mixed thoroughly with soil during final tilth. 25% of nutrient should be from FYM.
- Line-sowing with row to row spacing of 20 cm and plant to plant spacing of 5 – 7 cm at the depth of 2-3 cm. A seed rate of 25 kg/ha for line sowing and 35 kg/ha for broadcasting is recommended.



Black coloured seed



Yellow coloured seed



Land preparation and sowing with Carbendazim @ 2g/kg treated seed

2. Farmers already completed sowing of sunnhemp during mid April (Crop age: 30-35 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 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.



30-40 days old sunnhemp crop

Flea beetle infested crop



Crop affected by hairy caterpillar

3. Farmers sown the crop after 20 April (Crop age: 25-30 days)

- Under water stress, one light irrigation is advocated. One hand weeding after irrigation is required at 25 days after sowing for better growth and maintain plant population (55-60 plant/square meter).
- Under drought stress, flea beetle infestation may occurs which feeds on the leaves making small holes. Farmers to be vigilant on the infestation of hair caterpillar, if substantial infestation observed, spraying of Chlorpyrifos 20EC @ 2ml/litre or any Neem based formulations @ 3-4ml /litre is recommended.



25-30 days
old crop

Flea beetle
infested crop



4. Farmers sown the crop in last week of April (Crop age: 15-25 days)

- After irrigation one scrapper/ wheel hoe or hand weeding may be given after 15-20 days of sowing in between rows to control weeds, thinning of excess plants need to be done to maintain optimum plant population (55-60 plant/square meter).
- If drought condition persist after sowing, leaf hopper infestation may observed which weaken the young seedlings by sucking the sap from leaf. Therefore, one light irrigation is needed.
- The farmers are advised to be vigilant on the infestation of stem girdler or hairy caterpillar. In case of infestation observed, spraying of Chlorpyrifos 20 EC @ 2ml/litre is recommended.



Wheel hoe for weed control
and soil mulching



Crop affected by hairy
caterpillar

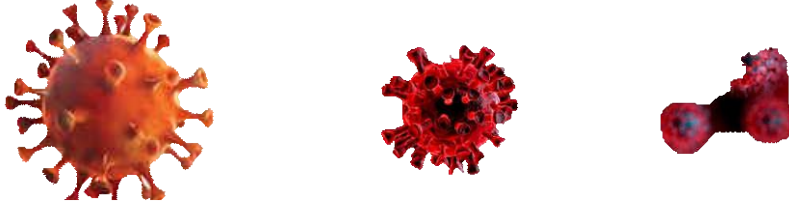
5. Farmers sown the crop in first week of May (Crop age: 10-15 days)

- Irrigation and drainage channel to be prepared. One scrapper or hand weeding at around 15 days after sowing (DAS) to reduce weed growth as well as soil mulching
- Farmers to be vigilant on the infestation of stem girdler. In case of infestation observed, spraying of Chlorpyrifos 20 EC @ 2ml/litre is recommended.

Preparation of irrigation and
drainage channel and hand
weeding at around 15DAS



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) 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

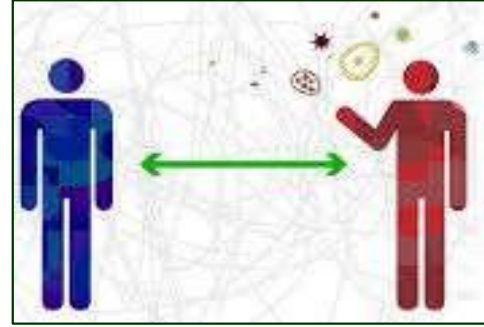


Aarogya Setu

मैं सुरक्षित | हम सुरक्षित | भारत सुरक्षित



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, 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

Conceptualized & Published by
Dr Gouranga Kar
Director
ICAR-CRIJAF
Nilganj, Barrackpore
Kolkata-700120, West Bengal

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: 07/2020)