



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**

**MANIPUR BULLETIN****22<sup>nd</sup> July, 2016****Tamenglong**

IAAS, ICAR-RC Manipur Centre in association with India Meteorological Department, Regional Meteorological Centre, Guwahati and Northern Hemisphere Analysis Centre, New Delhi, Ministry of Earth Science, Govt. of India reports the weather forecasts for the next five days, i.e., from 23<sup>rd</sup> to 27<sup>th</sup> July, 2016 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (19<sup>th</sup> to 21<sup>st</sup> July, 2016)**

The sky remained mainly cloudy to overcast and rainfall of 6.4 mm was recorded during past three days. Maximum temperature range observed was 28.0 to 31.2 °C, range of minimum temperature observed was 22.1 to 22.4 °C, mean relative humidity observed in morning and afternoon were 87.33 % and 71.33 % respectively. The average wind speed range was 3.1 to 5.9 km/hr.

**Weather forecast for next five days of Tamenglong (23<sup>rd</sup> to 27<sup>th</sup> July, 2016)**

Likely to have light rain and heavy rain at isolated places. Sky will remain mainly cloudy to overcast, with maximum temp. 29 - 31 °C & minimum temp. 22 - 24 °C. Relative humidity may reach upto 100 % (max RH) & 98 % (min RH). The average wind speed may be 2 km/hr. Wind direction may be Westerly to North - Westerly during the next five days.

**Weather Outlook for subsequent 2 days from 27th July to 29th July 2016****Rainfall at many places very likely over northeastern states****Weather warning for next five days \*****Likely to have heavy rain at isolated places over Manipur on 22<sup>nd</sup> July, 2016**

| Name of the crop          | Stage                           | Pest and disease     | Agro-meteorological advisories   |
|---------------------------|---------------------------------|----------------------|--|
| <b>Field Crops</b>        |                                 |                      |  |
| <b>Main kharif rice</b>   | Transplanting to Establishment  |                      | <ul style="list-style-type: none"> <li>➤ In replanting flooding fields, prepare rice nurseries in raised beds with RC- Maniphou 7.</li> <li>➤ During final leveling apply fertilizer @ 65kg Urea, 250 kg SSP and 33kg MOP as basal dose before transplanting seedlings.</li> <li>➤ Uproot 25-35 days old seedlings. About 1200-1300 bundles of seedlings (40cm diameter) are required for transplanting in one hectare area. Row planting of 2-3 seedlings per hill may be done at 25x10cm using beaded rope.</li> <li>➤ Maintain a thin film of water upto 7 days after transplanting. Release excess water if accumulated due to rain.</li> <li>➤ Thinning may be done in rice fields where plant population is high and replant in area where plants have died due to flood.</li> </ul> |
|                           |                                 | Thrips & Leaf folder | <ul style="list-style-type: none"> <li>➤ Spray Lambdacythrin 5% EC @ 15 ml/ 15 lit of water.</li> </ul>  |
| <b>Kharif maize</b>       | Cob formation to maturity       |                      | <ul style="list-style-type: none"> <li>➤ Weeding may be done on sunny days to control weeds/ insect-pest.</li> <li>➤ Maintain proper drainage system to avoid water logging.</li> <li>➤ Mature cobs may be harvested.</li> </ul>   |
| <b>Soybean</b>            | Sowing to vegetative            |                      | <ul style="list-style-type: none"> <li>➤ Maintain proper drainage system to avoid water logging</li> <li>➤ If not sown early, sowing must be done during July.</li> <li>➤ Keep the plot clean to avoid hairy caterpillars. Hand weeding should be done before 30-35 days after sowing.</li> <li>➤ For control of red hairy caterpillars in crops at vegetative stage, dust 5% Malathion @ 20 kg/ ha to control it or spray Dichlorovos 7.6 EC 0.05% (0.6ml/ lit of water)</li> </ul>   |
| <b>Storage (seed)</b>     |                                 |                      | <ul style="list-style-type: none"> <li>➤ Dry, clean and store the seeds in RC-seed bins after proper drying of seeds along with charcoal. Check for moisture content or weight of seeds. After proper drying, store grains in well ventilated godowns. Spray Malathion 1% in godowns.</li> </ul>   |
| <b>Horticulture Crops</b> |                                 |                      |  |
| <b>Turmeric/ Ginger</b>   | Vegetative to rhizome formation | Leaf spot disease    | <ul style="list-style-type: none"> <li>➤ Spray Redomil MZ-72 WP @ 2g/lit of water alternatively with Carbendazim @ 2g/ lit of water at 14 days interval.</li> </ul>  |
|                           |                                 | Rhizome rot          | <ul style="list-style-type: none"> <li>➤ To prevent rhizome rot spray Redomil MZ 72 W.P. @ 2 g/ lit of water at 15 days interval for 2-3 times.</li> </ul>   |
|                           |                                 |                      | <ul style="list-style-type: none"> <li>➤ For grown up plants spray Dithan M45 @ 2 to 2.5 ml/lit of water as prophylactic measures after the rain.</li> </ul>   |
| <b>Bhindi</b>             | Fruiting to harvesting          | Jassids              | <ul style="list-style-type: none"> <li>➤ Infested leaf curl upward in margin. If small young nymphs of different colours are found on the underside of the leaves, spray Monocrotophos 36EC @ 1 ml / lit of water after harvesting the mature fruits.</li> </ul>   |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



|   |                       |            |   |
|---|-----------------------|------------|---|
| <b>Turmeric/ Coriander</b>                                  | Intercropping         |            | <ul style="list-style-type: none"> <li>- Coriander variety Green Wonder or local one may be sown as intercrop plants in Turmeric field.</li> <li>- High density sowing at a spacing of 5 cm x 10 cm may also be done.</li> </ul>  |
| <b>Cowpea</b>   | Sowing                |            | <ul style="list-style-type: none"> <li>- Cowpea may be sown as an intercrop in the fruit orchard such as lemon, orange, passion fruit, etc.</li> <li>- Land preparation; sowing spacing: 45 – 60 cm from seed to seed and row to row; raised beds are preferred for sowing.</li> <li>- Recommended varieties: Yard long bean &amp; Pusa Barsati.</li> </ul> |
| <b>Cucurbits (Water-melon, pumpkin, bitter gourd, etc.)</b> | Vegetative/harvest    |            | <ul style="list-style-type: none"> <li>- Avoid water stagnation in the root zone, harvest the mature ones.</li> <li>- Avoid the fruits to touch the ground by staking or with the support of dried twigs.</li> </ul>  |
| <b>Passion Fruit</b>  | Flowering to fruiting | Fruit rot  | - Spray Metalxyl + Mancozeb @ 2 g/litr water at 7 days interval   |
|   |                       | Fruit fly  | - Apply poison baiting with Jaggery + fruit juice + Malathion (20:20:1) @ 40-50 baits/ha.   |
|   |                       | Brown Spot | - Remove the infected leaves and burn. Spray Zineb @ 2 mg/ltr water.  |
|   |                       | Termite    | - Apply Chloropyriphos 10%G @ 25 kg/ha into the soil.   |
|   |                       | Collar rot | - Drench the soil of collar region with 1% Bordeaux mixture   |

### Animal Sciences

| Name of the animal   | Growth stage                          | Disease/ infestation  | Agro-meteorological advisories   |
|--|---------------------------------------|-----------------------|--|
| Do not let animals to graze in fodder fields now, as at the time of sudden growth in fodder after long submergence presence of cyanide has been found. |                                       |                       |  |
| <b>Poultry (Chicken/ Turkey/ Duck)</b>   | All age groups                        | Care & management     | <ul style="list-style-type: none"> <li>➤ Do not give muddy water as there is chance of <i>colibacillosis</i> during the rainy season.</li> <li>➤ Use water sanitizer in drinking water/potassium permanganate (few grains)</li> <li>➤ Keep the litter dry &amp; add 2 kg lime powder for 100 sq. ft. area and mix it properly.</li> </ul>  |
|  |                                       | Coccidiosis           | ➤ Use Amprolium @ 1.5g/ltr of drinking water for 5-7 days and electrolyte can be associated.   |
|  |                                       | Deworming             | ➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose.   |
| <b>Sheep/ Goat</b>   | All age groups excepts the young ones | Care & management     | <ul style="list-style-type: none"> <li>➤ Keep the animals on the platform if possible to avoid <i>Pneumonia</i> due to moisture problem</li> <li>➤ Give multivitamins @ 15ml orally</li> <li>➤ Use quality disinfectants for disinfecting the surrounding of the sheds.</li> <li>➤ 21 days after shearing sheep, their bodies should be drenched with Butox @ 2ml/ lit water. Use medicated water for drenching.</li> </ul>  |
|  |                                       | De-worming            | ➤ De-worming of animals should be done using Abendazole/Levamisole @ 7.5 mg/kg b.wt. or Ivermectin @ 50mg/kg b. wl.  |
| <b>Pig</b>   | All age groups except the young ones  | Care and management   | <ul style="list-style-type: none"> <li>➤ Mineral mixture be added in feed @ 10-20 g/adult animal.</li> <li>➤ Treat drinking water with potassium permanganate/ sanitizer.</li> <li>➤ Provide ample ventilation in the shed/ dry bedding. Avoid dampness in sheds</li> </ul>  |
|  |                                       | Mites infestation     | ➤ Spray with Skin Heal Spray in sufficient quantity.   |
|  |                                       | Enteric disease       | ➤ Use Livocin @ 7.5 mg per kg b.wt. 3-5 days.  |
| <b>Cattle</b>  | All age groups excepts the young ones | Diarrhoea & Dysentery | ➤ Prompt treatment with Antibiotics Sulpha drugs.  |
|  |                                       | Deworming             | ➤ Give Piperazine liquid @ 10-15ml orally once only.   |
|  |                                       | B.Q./ H.S/FMD         | ➤ If the animals have not yet been vaccinated, give vaccine, now for Black Quarter, Haemorrhagic septicaemia, Foot & Mouth Disease, Enterotoxaemia etc.  |
|  |                                       | Endoparasites         | ➤ De-worm orally once using Nilzan-F @ 90ml/ 300 kg body weight.   |
|  |                                       | Care & management     | <ul style="list-style-type: none"> <li>➤ If the animals do not have access to green fodders, vitamin E injection/ supplements should be given.</li> <li>➤ Food supplements may be given @ 20-30 gm/animals.</li> <li>➤ Do not let animals graze in irrigated fodder fields/meadows.</li> <li>➤ After the birth of the self the new born must be fed with Colostrum within the first two hours.</li> <li>➤ Give Calmore Forte @ 100ml orally once daily.</li> </ul> |
|  |                                       | Milk Fever            | ➤ Protect from milk fever by giving daily a mixture of calcium and phosphorus @ 70-100ml.  |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



| <b>Fishery:</b>                |                        |                   |   |
|--------------------------------|------------------------|-------------------|---|
| <b>Type of Farming</b>         | <b>Stage</b>           | <b>Management</b> | <b>Agro-metrological advisories</b>   |
| <b>Carp culture</b>            | Fish nurseries         | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.0-1.5m</li> <li>➤ Agri-lime should be applied in ponds</li> <li>➤ Ponds should be free from aquatic weed, predatory insects and fish.</li> <li>➤ Encircle the pond with net or bamboo mat as a preventive measure for flood.</li> </ul>  |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Fish feed should be provided @ 10-15 % body weight per day.</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ About 5 million feeding fries are stocked per 1 ha for pre-nursing pond</li> <li>➤ Duration is 25-45 days.</li> </ul>  |
|                                | Grow out               | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.5-2.0m</li> <li>➤ Regular liming should be done @ 30-35 kg/ha at 30 days interval</li> </ul>   |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Sampling of fish for growth, disease (if any) should be done by regular netting.</li> <li>➤ Partial harvesting of marketable size fishes are also recommended</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ Feed should be provided @ 3-5 % body weight per day</li> <li>➤ Feed can be fed at 2 times a day.</li> </ul>  |
|                                | Paddy cum fish culture | water             | <ul style="list-style-type: none"> <li>➤ Water depth of the field can be increase by pumping or draining if water is available to continue the culture.</li> <li>➤ 20-40% of the paddy plot can be made as 1.0-1.5m depth trenches.</li> <li>➤ 1000-3000 fish fingerlings can be stocked in 1 hectare rice field.</li> <li>➤ Feeding should be done @ 2% body weigh5t per day.</li> </ul> |
| <b>Integrated Fish Farming</b> | Pig                    |                   | <ul style="list-style-type: none"> <li>➤ About 30-40 two months old pigs may be kept for proper fertilization of the one ha pond. Pigs are feed on mash at an average of 1kg/day. Green grasses or animal folder is also provided. Grass with interlocked soil in the root system (sod) is provided once a week to avoid mineral deficiency.</li> </ul>                                   |
|                                | Duck                   |                   | <ul style="list-style-type: none"> <li>➤ 200-400 ducks of 2-3 months old are sufficient to adequately fertilize a 1 ha pond.</li> </ul>   |

(I. Meghachandra Singh)  
 Scientist i/c, IAAS



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**

**MANIPUR BULLETIN****22<sup>nd</sup> July, 2016****Thoubal**

IAAS, ICAR-RC Manipur Centre in association with India Meteorological Department, Regional Meteorological Centre, Guwahati and Northern Hemisphere Analysis Centre, New Delhi, Ministry of Earth Science, Govt. of India reports the weather forecasts for the next five days, i.e., from 23<sup>rd</sup> to 27<sup>th</sup> July, 2016 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (19<sup>th</sup> to 21<sup>st</sup> July, 2016)**

The sky remained mainly cloudy to overcast and rainfall of 6.4 mm was recorded during past three days. Maximum temperature range observed was 28.0 to 31.2 °C, range of minimum temperature observed was 22.1 to 22.4 °C, mean relative humidity observed in morning and afternoon were 87.33 % and 71.33 % respectively. The average wind speed range was 3.1 to 5.9 km/hr.

**Weather forecast for next five days of Thoubal (23<sup>rd</sup> to 27<sup>th</sup> July, 2016)**

Likely to have light rain and heavy rain at isolated places. Sky will remain mainly cloudy to overcast, with maximum temp. 28 - 30 °C & minimum temp. 21 - 23 °C. Relative humidity may reach upto 99 % (max RH) & 98 % (min RH). The average wind speed may be 2 - 4 km/hr. Wind direction may be Westerly to North - Westerly during the next five days.

**Weather Outlook for subsequent 2 days from 27th July to 29th July 2016****Rainfall at many places very likely over northeastern states****Weather warning for next five days \*****Likely to have heavy rain at isolated places over Manipur on 22<sup>nd</sup> July, 2016**

| Name of the crop          | Stage                           | Pest and disease     | Agro-meteorological advisories   |
|---------------------------|---------------------------------|----------------------|--|
| <b>Field Crops</b>        |                                 |                      |  |
| <b>Main kharif rice</b>   | Transplanting to Establishment  |                      | <ul style="list-style-type: none"> <li>➤ In replanting flooding fields, prepare rice nurseries in raised beds with RC- Maniphou 7.</li> <li>➤ During final leveling apply fertilizer @ 65kg Urea, 250 kg SSP and 33kg MOP as basal dose before transplanting seedlings.</li> <li>➤ Uproot 25-35 days old seedlings. About 1200-1300 bundles of seedlings (40cm diameter) are required for transplanting in one hectare area. Row planting of 2-3 seedlings per hill may be done at 25x10cm using beaded rope.</li> <li>➤ Maintain a thin film of water upto 7 days after transplanting. Release excess water if accumulated due to rain.</li> <li>➤ Thinning may be done in rice fields where plant population is high and replant in area where plants have died due to flood.</li> </ul> |
|                           |                                 | Thrips & Leaf folder | <ul style="list-style-type: none"> <li>➤ Spray Lambdacythrin 5% EC @ 15 ml/ 15 lit of water.</li> </ul>  |
| <b>Kharif maize</b>       | Cob formation to maturity       |                      | <ul style="list-style-type: none"> <li>➤ Weeding may be done on sunny days to control weeds/ insect-pest.</li> <li>➤ Maintain proper drainage system to avoid water logging.</li> <li>➤ Mature cobs may be harvested.</li> </ul>   |
| <b>Soybean</b>            | Sowing to vegetative            |                      | <ul style="list-style-type: none"> <li>➤ Maintain proper drainage system to avoid water logging</li> <li>➤ If not sown early, sowing must be done during July.</li> <li>➤ Keep the plot clean to avoid hairy caterpillars. Hand weeding should be done before 30-35 days after sowing.</li> <li>➤ For control of red hairy caterpillars in crops at vegetative stage, dust 5% Malathion @ 20 kg/ ha to control it or spray Dichlorovos 7.6 EC 0.05% (0.6ml/ lit of water)</li> </ul>   |
| <b>Storage (seed)</b>     |                                 |                      | <ul style="list-style-type: none"> <li>➤ Dry, clean and store the seeds in RC-seed bins after proper drying of seeds along with charcoal. Check for moisture content or weight of seeds. After proper drying, store grains in well ventilated godowns. Spray Malathion 1% in godowns.</li> </ul>   |
| <b>Horticulture Crops</b> |                                 |                      |  |
| <b>Turmeric/ Ginger</b>   | Vegetative to rhizome formation | Leaf spot disease    | <ul style="list-style-type: none"> <li>➤ Spray Redomil MZ-72 WP @ 2g/lit of water alternatively with Carbendazim @ 2g/ lit of water at 14 days interval.</li> </ul>  |
|                           |                                 | Rhizome rot          | <ul style="list-style-type: none"> <li>➤ To prevent rhizome rot spray Redomil MZ 72 W.P. @ 2 g/ lit of water at 15 days interval for 2-3 times.</li> </ul>   |
|                           |                                 |                      | <ul style="list-style-type: none"> <li>➤ For grown up plants spray Dithan M45 @ 2 to 2.5 ml/lit of water as prophylactic measures after the rain.</li> </ul>   |
| <b>Bhindi</b>             | Fruiting to harvesting          | Jassids              | <ul style="list-style-type: none"> <li>➤ Infested leaf curl upward in margin. If small young nymphs of different colours are found on the underside of the leaves, spray Monocrotophos 36EC @ 1 ml / lit of water after harvesting the mature fruits.</li> </ul>   |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



|   |                       |            |   |
|---|-----------------------|------------|---|
| <b>Turmeric/ Coriander</b>                                  | Intercropping         |            | <ul style="list-style-type: none"> <li>- Coriander variety Green Wonder or local one may be sown as intercrop plants in Turmeric field.</li> <li>- High density sowing at a spacing of 5 cm x 10 cm may also be done.</li> </ul>  |
| <b>Cowpea</b>   | Sowing                |            | <ul style="list-style-type: none"> <li>- Cowpea may be sown as an intercrop in the fruit orchard such as lemon, orange, passion fruit, etc.</li> <li>- Land preparation; sowing spacing: 45 – 60 cm from seed to seed and row to row; raised beds are preferred for sowing.</li> <li>- Recommended varieties: Yard long bean &amp; Pusa Barsati.</li> </ul> |
| <b>Cucurbits (Water-melon, pumpkin, bitter gourd, etc.)</b> | Vegetative/harvest    |            | <ul style="list-style-type: none"> <li>- Avoid water stagnation in the root zone, harvest the mature ones.</li> <li>- Avoid the fruits to touch the ground by staking or with the support of dried twigs.</li> </ul>  |
| <b>Passion Fruit</b>  | Flowering to fruiting | Fruit rot  | - Spray Metalxyl + Mancozeb @ 2 g/litr water at 7 days interval   |
|   |                       | Fruit fly  | - Apply poison baiting with Jaggery + fruit juice + Malathion (20:20:1) @ 40-50 baits/ha.   |
|   |                       | Brown Spot | - Remove the infected leaves and burn. Spray Zineb @ 2 mg/ltr water.  |
|   |                       | Termite    | - Apply Chloropyriphos 10%G @ 25 kg/ha into the soil.   |
|   |                       | Collar rot | - Drench the soil of collar region with 1% Bordeaux mixture   |

### Animal Sciences

| Name of the animal   | Growth stage                          | Disease/ infestation  | Agro-meteorological advisories   |
|--|---------------------------------------|-----------------------|--|
| Do not let animals to graze in fodder fields now, as at the time of sudden growth in fodder after long submergence presence of cyanide has been found. |                                       |                       |  |
| <b>Poultry (Chicken/ Turkey/ Duck)</b>   | All age groups                        | Care & management     | <ul style="list-style-type: none"> <li>➤ Do not give muddy water as there is chance of <i>colibacillosis</i> during the rainy season.</li> <li>➤ Use water sanitizer in drinking water/potassium permanganate (few grains)</li> <li>➤ Keep the litter dry &amp; add 2 kg lime powder for 100 sq. ft. area and mix it properly.</li> </ul>  |
|  |                                       | Coccidiosis           | ➤ Use Amprolium @ 1.5g/ltr of drinking water for 5-7 days and electrolyte can be associated.   |
|  |                                       | Deworming             | ➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose.   |
| <b>Sheep/ Goat</b>   | All age groups excepts the young ones | Care & management     | <ul style="list-style-type: none"> <li>➤ Keep the animals on the platform if possible to avoid <i>Pneumonia</i> due to moisture problem</li> <li>➤ Give multivitamins @ 15ml orally</li> <li>➤ Use quality disinfectants for disinfecting the surrounding of the sheds.</li> <li>➤ 21 days after shearing sheep, their bodies should be drenched with Butox @ 2ml/ lit water. Use medicated water for drenching.</li> </ul>  |
|  |                                       | De-worming            | ➤ De-worming of animals should be done using Abendazole/Levamisole @ 7.5 mg/kg b.wt. or Ivermectin @ 50mg/kg b. wl.  |
| <b>Pig</b>   | All age groups except the young ones  | Care and management   | <ul style="list-style-type: none"> <li>➤ Mineral mixture be added in feed @ 10-20 g/adult animal.</li> <li>➤ Treat drinking water with potassium permanganate/ sanitizer.</li> <li>➤ Provide ample ventilation in the shed/ dry bedding. Avoid dampness in sheds</li> </ul>  |
|  |                                       | Mites infestation     | ➤ Spray with Skin Heal Spray in sufficient quantity.   |
|  |                                       | Enteric disease       | ➤ Use Livocin @ 7.5 mg per kg b.wt. 3-5 days.  |
| <b>Cattle</b>  | All age groups excepts the young ones | Diarrhoea & Dysentery | ➤ Prompt treatment with Antibiotics Sulpha drugs.  |
|  |                                       | Deworming             | ➤ Give Piperazine liquid @ 10-15ml orally once only.   |
|  |                                       | B.Q./ H.S/FMD         | ➤ If the animals have not yet been vaccinated, give vaccine, now for Black Quarter, Haemorrhagic septicaemia, Foot & Mouth Disease, Enterotoxaemia etc.  |
|  |                                       | Endoparasites         | ➤ De-worm orally once using Nilzan-F @ 90ml/ 300 kg body weight.   |
|  |                                       | Care & management     | <ul style="list-style-type: none"> <li>➤ If the animals do not have access to green fodders, vitamin E injection/ supplements should be given.</li> <li>➤ Food supplements may be given @ 20-30 gm/animals.</li> <li>➤ Do not let animals graze in irrigated fodder fields/meadows.</li> <li>➤ After the birth of the self the new born must be fed with Colostrum within the first two hours.</li> <li>➤ Give Calmore Forte @ 100ml orally once daily.</li> </ul> |
|  |                                       | Milk Fever            | ➤ Protect from milk fever by giving daily a mixture of calcium and phosphorus @ 70-100ml.  |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



| <b>Fishery:</b>                |                        |                   |   |
|--------------------------------|------------------------|-------------------|---|
| <b>Type of Farming</b>         | <b>Stage</b>           | <b>Management</b> | <b>Agro-metrological advisories</b>   |
| <b>Carp culture</b>            | Fish nurseries         | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.0-1.5m</li> <li>➤ Agri-lime should be applied in ponds</li> <li>➤ Ponds should be free from aquatic weed, predatory insects and fish.</li> <li>➤ Encircle the pond with net or bamboo mat as a preventive measure for flood.</li> </ul>  |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Fish feed should be provided @ 10-15 % body weight per day.</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ About 5 million feeding fries are stocked per 1 ha for pre-nursing pond</li> <li>➤ Duration is 25-45 days.</li> </ul>  |
|                                | Grow out               | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.5-2.0m</li> <li>➤ Regular liming should be done @ 30-35 kg/ha at 30 days interval</li> </ul>   |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Sampling of fish for growth, disease (if any) should be done by regular netting.</li> <li>➤ Partial harvesting of marketable size fishes are also recommended</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ Feed should be provided @ 3-5 % body weight per day</li> <li>➤ Feed can be fed at 2 times a day.</li> </ul>  |
|                                | Paddy cum fish culture | water             | <ul style="list-style-type: none"> <li>➤ Water depth of the field can be increase by pumping or draining if water is available to continue the culture.</li> <li>➤ 20-40% of the paddy plot can be made as 1.0-1.5m depth trenches.</li> <li>➤ 1000-3000 fish fingerlings can be stocked in 1 hectare rice field.</li> <li>➤ Feeding should be done @ 2% body weigh5t per day.</li> </ul> |
| <b>Integrated Fish Farming</b> | Pig                    |                   | <ul style="list-style-type: none"> <li>➤ About 30-40 two months old pigs may be kept for proper fertilization of the one ha pond. Pigs are feed on mash at an average of 1kg/day. Green grasses or animal folder is also provided. Grass with interlocked soil in the root system (sod) is provided once a week to avoid mineral deficiency.</li> </ul>                                   |
|                                | Duck                   |                   | <ul style="list-style-type: none"> <li>➤ 200-400 ducks of 2-3 months old are sufficient to adequately fertilize a 1 ha pond.</li> </ul>   |

(I. Meghachandra Singh)  
 Scientist i/c, IAAS





**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**

**MANIPUR BULLETIN****22<sup>nd</sup> July, 2016****Ukhrul**

IAAS, ICAR-RC Manipur Centre in association with India Meteorological Department, Regional Meteorological Centre, Guwahati and Northern Hemisphere Analysis Centre, New Delhi, Ministry of Earth Science, Govt. of India reports the weather forecasts for the next five days, i.e., from 23<sup>rd</sup> to 27<sup>th</sup> July, 2016 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (19<sup>th</sup> to 21<sup>st</sup> July, 2016)**

The sky remained mainly cloudy to overcast and rainfall of 6.4 mm was recorded during past three days. Maximum temperature range observed was 28.0 to 31.2 °C, range of minimum temperature observed was 22.1 to 22.4 °C, mean relative humidity observed in morning and afternoon were 87.33 % and 71.33 % respectively. The average wind speed range was 3.1 to 5.9 km/hr.

**Weather forecast for next five days of Ukhrul (23<sup>rd</sup> to 27<sup>th</sup> July, 2016)**

Likely to have light rain and heavy rain at isolated places. Sky will remain mainly cloudy to overcast, with maximum temp. 27 - 29 °C & minimum temp. 19 - 21 °C. Relative humidity may reach upto 99 % (max RH) & 93 % (min RH). The average wind speed may be 2 - 3 km/hr. Wind direction may be Westerly to North - Westerly during the next five days.

**Weather Outlook for subsequent 2 days from 27th July to 29th July 2016****Rainfall at many places very likely over northeastern states****Weather warning for next five days \*****Likely to have heavy rain at isolated places over Manipur on 22<sup>nd</sup> July, 2016**

| Name of the crop          | Stage                           | Pest and disease     | Agro-meteorological advisories   |
|---------------------------|---------------------------------|----------------------|--|
| <b>Field Crops</b>        |                                 |                      |  |
| <b>Main kharif rice</b>   | Transplanting to Establishment  |                      | <ul style="list-style-type: none"> <li>➤ In replanting flooding fields, prepare rice nurseries in raised beds with RC- Maniphou 7.</li> <li>➤ During final leveling apply fertilizer @ 65kg Urea, 250 kg SSP and 33kg MOP as basal dose before transplanting seedlings.</li> <li>➤ Uproot 25-35 days old seedlings. About 1200-1300 bundles of seedlings (40cm diameter) are required for transplanting in one hectare area. Row planting of 2-3 seedlings per hill may be done at 25x10cm using beaded rope.</li> <li>➤ Maintain a thin film of water upto 7 days after transplanting. Release excess water if accumulated due to rain.</li> <li>➤ Thinning may be done in rice fields where plant population is high and replant in area where plants have died due to flood.</li> </ul> |
|                           |                                 | Thrips & Leaf folder | <ul style="list-style-type: none"> <li>➤ Spray Lambdacythrin 5% EC @ 15 ml/ 15 lit of water.</li> </ul>  |
| <b>Kharif maize</b>       | Cob formation to maturity       |                      | <ul style="list-style-type: none"> <li>➤ Weeding may be done on sunny days to control weeds/ insect-pest.</li> <li>➤ Maintain proper drainage system to avoid water logging.</li> <li>➤ Mature cobs may be harvested.</li> </ul>   |
| <b>Soybean</b>            | Sowing to vegetative            |                      | <ul style="list-style-type: none"> <li>➤ Maintain proper drainage system to avoid water logging</li> <li>➤ If not sown early, sowing must be done during July.</li> <li>➤ Keep the plot clean to avoid hairy caterpillars. Hand weeding should be done before 30-35 days after sowing.</li> <li>➤ For control of red hairy caterpillars in crops at vegetative stage, dust 5% Malathion @ 20 kg/ ha to control it or spray Dichlorovos 7.6 EC 0.05% (0.6ml/ lit of water)</li> </ul>   |
| <b>Storage (seed)</b>     |                                 |                      | <ul style="list-style-type: none"> <li>➤ Dry, clean and store the seeds in RC-seed bins after proper drying of seeds along with charcoal. Check for moisture content or weight of seeds. After proper drying, store grains in well ventilated godowns. Spray Malathion 1% in godowns.</li> </ul>   |
| <b>Horticulture Crops</b> |                                 |                      |  |
| <b>Turmeric/ Ginger</b>   | Vegetative to rhizome formation | Leaf spot disease    | <ul style="list-style-type: none"> <li>➤ Spray Redomil MZ-72 WP @ 2g/lit of water alternatively with Carbendazim @ 2g/ lit of water at 14 days interval.</li> </ul>  |
|                           |                                 | Rhizome rot          | <ul style="list-style-type: none"> <li>➤ To prevent rhizome rot spray Redomil MZ 72 W.P. @ 2 g/ lit of water at 15 days interval for 2-3 times.</li> </ul>   |
|                           |                                 |                      | <ul style="list-style-type: none"> <li>➤ For grown up plants spray Dithan M45 @ 2 to 2.5 ml/lit of water as prophylactic measures after the rain.</li> </ul>   |
| <b>Bhindi</b>             | Fruiting to harvesting          | Jassids              | <ul style="list-style-type: none"> <li>➤ Infested leaf curl upward in margin. If small young nymphs of different colours are found on the underside of the leaves, spray Monocrotophos 36EC @ 1 ml / lit of water after harvesting the mature fruits.</li> </ul>   |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



|   |                       |            |   |
|---|-----------------------|------------|---|
| <b>Turmeric/ Coriander</b>                                  | Intercropping         |            | <ul style="list-style-type: none"> <li>- Coriander variety Green Wonder or local one may be sown as intercrop plants in Turmeric field.</li> <li>- High density sowing at a spacing of 5 cm x 10 cm may also be done.</li> </ul>  |
| <b>Cowpea</b>   | Sowing                |            | <ul style="list-style-type: none"> <li>- Cowpea may be sown as an intercrop in the fruit orchard such as lemon, orange, passion fruit, etc.</li> <li>- Land preparation; sowing spacing: 45 – 60 cm from seed to seed and row to row; raised beds are preferred for sowing.</li> <li>- Recommended varieties: Yard long bean &amp; Pusa Barsati.</li> </ul> |
| <b>Cucurbits (Water-melon, pumpkin, bitter gourd, etc.)</b> | Vegetative/harvest    |            | <ul style="list-style-type: none"> <li>- Avoid water stagnation in the root zone, harvest the mature ones.</li> <li>- Avoid the fruits to touch the ground by staking or with the support of dried twigs.</li> </ul>  |
| <b>Passion Fruit</b>  | Flowering to fruiting | Fruit rot  | - Spray Metalxyl + Mancozeb @ 2 g/litr water at 7 days interval   |
|   |                       | Fruit fly  | - Apply poison baiting with Jaggery + fruit juice + Malathion (20:20:1) @ 40-50 baits/ha.   |
|   |                       | Brown Spot | - Remove the infected leaves and burn. Spray Zineb @ 2 mg/ltr water.  |
|   |                       | Termite    | - Apply Chloropyriphos 10%G @ 25 kg/ha into the soil.   |
|   |                       | Collar rot | - Drench the soil of collar region with 1% Bordeaux mixture   |

### Animal Sciences

| Name of the animal   | Growth stage                          | Disease/ infestation  | Agro-meteorological advisories   |
|--|---------------------------------------|-----------------------|--|
| Do not let animals to graze in fodder fields now, as at the time of sudden growth in fodder after long submergence presence of cyanide has been found. |                                       |                       |  |
| <b>Poultry (Chicken/ Turkey/ Duck)</b>   | All age groups                        | Care & management     | <ul style="list-style-type: none"> <li>➤ Do not give muddy water as there is chance of <i>colibacillosis</i> during the rainy season.</li> <li>➤ Use water sanitizer in drinking water/potassium permanganate (few grains)</li> <li>➤ Keep the litter dry &amp; add 2 kg lime powder for 100 sq. ft. area and mix it properly.</li> </ul>  |
|  |                                       | Coccidiosis           | ➤ Use Amprolium @ 1.5g/ltr of drinking water for 5-7 days and electrolyte can be associated.   |
|  |                                       | Deworming             | ➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose.   |
| <b>Sheep/ Goat</b>   | All age groups excepts the young ones | Care & management     | <ul style="list-style-type: none"> <li>➤ Keep the animals on the platform if possible to avoid <i>Pneumonia</i> due to moisture problem</li> <li>➤ Give multivitamins @ 15ml orally</li> <li>➤ Use quality disinfectants for disinfecting the surrounding of the sheds.</li> <li>➤ 21 days after shearing sheep, their bodies should be drenched with Butox @ 2ml/ lit water. Use medicated water for drenching.</li> </ul>  |
|  |                                       | De-worming            | ➤ De-worming of animals should be done using Abendazole/Levamisole @ 7.5 mg/kg b.wt. or Ivermectin @ 50mg/kg b. wl.  |
| <b>Pig</b>   | All age groups except the young ones  | Care and management   | <ul style="list-style-type: none"> <li>➤ Mineral mixture be added in feed @ 10-20 g/adult animal.</li> <li>➤ Treat drinking water with potassium permanganate/ sanitizer.</li> <li>➤ Provide ample ventilation in the shed/ dry bedding. Avoid dampness in sheds</li> </ul>  |
|  |                                       | Mites infestation     | ➤ Spray with Skin Heal Spray in sufficient quantity.   |
|  |                                       | Enteric disease       | ➤ Use Livocin @ 7.5 mg per kg b.wt. 3-5 days.  |
| <b>Cattle</b>  | All age groups excepts the young ones | Diarrhoea & Dysentery | ➤ Prompt treatment with Antibiotics Sulpha drugs.  |
|  |                                       | Deworming             | ➤ Give Piperazine liquid @ 10-15ml orally once only.   |
|  |                                       | B.Q./ H.S/FMD         | ➤ If the animals have not yet been vaccinated, give vaccine, now for Black Quarter, Haemorrhagic septicaemia, Foot & Mouth Disease, Enterotoxaemia etc.  |
|  |                                       | Endoparasites         | ➤ De-worm orally once using Nilzan-F @ 90ml/ 300 kg body weight.   |
|  |                                       | Care & management     | <ul style="list-style-type: none"> <li>➤ If the animals do not have access to green fodders, vitamin E injection/ supplements should be given.</li> <li>➤ Food supplements may be given @ 20-30 gm/animals.</li> <li>➤ Do not let animals graze in irrigated fodder fields/meadows.</li> <li>➤ After the birth of the self the new born must be fed with Colostrum within the first two hours.</li> <li>➤ Give Calmore Forte @ 100ml orally once daily.</li> </ul> |
|  |                                       | Milk Fever            | ➤ Protect from milk fever by giving daily a mixture of calcium and phosphorus @ 70-100ml.  |





**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



| <b>Fishery:</b>                |                        |                   |   |
|--------------------------------|------------------------|-------------------|---|
| <b>Type of Farming</b>         | <b>Stage</b>           | <b>Management</b> | <b>Agro-metrological advisories</b>   |
| <b>Carp culture</b>            | Fish nurseries         | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.0-1.5m</li> <li>➤ Agri-lime should be applied in ponds</li> <li>➤ Ponds should be free from aquatic weed, predatory insects and fish.</li> <li>➤ Encircle the pond with net or bamboo mat as a preventive measure for flood.</li> </ul>  |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Fish feed should be provided @ 10-15 % body weight per day.</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ About 5 million feeding fries are stocked per 1 ha for pre-nursing pond</li> <li>➤ Duration is 25-45 days.</li> </ul>  |
|                                | Grow out               | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.5-2.0m</li> <li>➤ Regular liming should be done @ 30-35 kg/ha at 30 days interval</li> </ul>   |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Sampling of fish for growth, disease (if any) should be done by regular netting.</li> <li>➤ Partial harvesting of marketable size fishes are also recommended</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ Feed should be provided @ 3-5 % body weight per day</li> <li>➤ Feed can be fed at 2 times a day.</li> </ul>  |
|                                | Paddy cum fish culture | water             | <ul style="list-style-type: none"> <li>➤ Water depth of the field can be increase by pumping or draining if water is available to continue the culture.</li> <li>➤ 20-40% of the paddy plot can be made as 1.0-1.5m depth trenches.</li> <li>➤ 1000-3000 fish fingerlings can be stocked in 1 hectare rice field.</li> <li>➤ Feeding should be done @ 2% body weigh5t per day.</li> </ul> |
| <b>Integrated Fish Farming</b> | Pig                    |                   | <ul style="list-style-type: none"> <li>➤ About 30-40 two months old pigs may be kept for proper fertilization of the one ha pond. Pigs are feed on mash at an average of 1kg/day. Green grasses or animal folder is also provided. Grass with interlocked soil in the root system (sod) is provided once a week to avoid mineral deficiency.</li> </ul>                                   |
|                                | Duck                   |                   | <ul style="list-style-type: none"> <li>➤ 200-400 ducks of 2-3 months old are sufficient to adequately fertilize a 1 ha pond.</li> </ul>   |

(I. Meghachandra Singh)  
 Scientist i/c, IAAS



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**

**MANIPUR BULLETIN****22<sup>nd</sup> July, 2016****Bishnupur**

IAAS, ICAR-RC Manipur Centre in association with India Meteorological Department, Regional Meteorological Centre, Guwahati and Northern Hemisphere Analysis Centre, New Delhi, Ministry of Earth Science, Govt. of India reports the weather forecasts for the next five days, i.e., from 23<sup>rd</sup> to 27<sup>th</sup> July, 2016 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (19<sup>th</sup> to 21<sup>st</sup> July, 2016)**

The sky remained mainly cloudy to overcast and rainfall of 6.4 mm was recorded during past three days. Maximum temperature range observed was 28.0 to 31.2 °C, range of minimum temperature observed was 22.1 to 22.4 °C, mean relative humidity observed in morning and afternoon were 87.33 % and 71.33 % respectively. The average wind speed range was 3.1 to 5.9 km/hr.

**Weather forecast for next five days of Bishnupur (23<sup>rd</sup> to 27<sup>th</sup> July, 2016)**

Likely to have light rain and heavy rain at isolated places. Sky will remain mainly cloudy to overcast, with maximum temp. 28 - 30 °C & minimum temp. 22 - 23 °C. Relative humidity may reach upto 100 % (max RH) & 98 % (min RH). The average wind speed may be 2-4 km/hr. Wind direction may be Westerly to North - Westerly during the next five days.

**Weather Outlook for subsequent 2 days from 27th July to 29th July 2016****Rainfall at many places very likely over northeastern states****Weather warning for next five days \*****Likely to have heavy rain at isolated places over Manipur on 22<sup>nd</sup> July, 2016**

| Name of the crop          | Stage                           | Pest and disease     | Agro-meteorological advisories   |
|---------------------------|---------------------------------|----------------------|--|
| <b>Field Crops</b>        |                                 |                      |  |
| <b>Main kharif rice</b>   | Transplanting to Establishment  |                      | <ul style="list-style-type: none"> <li>➤ In replanting flooding fields, prepare rice nurseries in raised beds with RC- Maniphou 7.</li> <li>➤ During final leveling apply fertilizer @ 65kg Urea, 250 kg SSP and 33kg MOP as basal dose before transplanting seedlings.</li> <li>➤ Uproot 25-35 days old seedlings. About 1200-1300 bundles of seedlings (40cm diameter) are required for transplanting in one hectare area. Row planting of 2-3 seedlings per hill may be done at 25x10cm using beaded rope.</li> <li>➤ Maintain a thin film of water upto 7 days after transplanting. Release excess water if accumulated due to rain.</li> <li>➤ Thinning may be done in rice fields where plant population is high and replant in area where plants have died due to flood.</li> </ul> |
|                           |                                 | Thrips & Leaf folder | <ul style="list-style-type: none"> <li>➤ Spray Lambdacythrin 5% EC @ 15 ml/ 15 lit of water.</li> </ul>  |
| <b>Kharif maize</b>       | Cob formation to maturity       |                      | <ul style="list-style-type: none"> <li>➤ Weeding may be done on sunny days to control weeds/ insect-pest.</li> <li>➤ Maintain proper drainage system to avoid water logging.</li> <li>➤ Mature cobs may be harvested.</li> </ul>   |
| <b>Soybean</b>            | Sowing to vegetative            |                      | <ul style="list-style-type: none"> <li>➤ Maintain proper drainage system to avoid water logging</li> <li>➤ If not sown early, sowing must be done during July.</li> <li>➤ Keep the plot clean to avoid hairy caterpillars. Hand weeding should be done before 30-35 days after sowing.</li> <li>➤ For control of red hairy caterpillars in crops at vegetative stage, dust 5% Malathion @ 20 kg/ ha to control it or spray Dichlorovos 7.6 EC 0.05% (0.6ml/ lit of water)</li> </ul>   |
| <b>Storage (seed)</b>     |                                 |                      | <ul style="list-style-type: none"> <li>➤ Dry, clean and store the seeds in RC-seed bins after proper drying of seeds along with charcoal. Check for moisture content or weight of seeds. After proper drying, store grains in well ventilated godowns. Spray Malathion 1% in godowns.</li> </ul>   |
| <b>Horticulture Crops</b> |                                 |                      |  |
| <b>Turmeric/ Ginger</b>   | Vegetative to rhizome formation | Leaf spot disease    | <ul style="list-style-type: none"> <li>➤ Spray Redomil MZ-72 WP @ 2g/lit of water alternatively with Carbendazim @ 2g/ lit of water at 14 days interval.</li> </ul>  |
|                           |                                 | Rhizome rot          | <ul style="list-style-type: none"> <li>➤ To prevent rhizome rot spray Redomil MZ 72 W.P. @ 2 g/ lit of water at 15 days interval for 2-3 times.</li> </ul>   |
|                           |                                 |                      | <ul style="list-style-type: none"> <li>➤ For grown up plants spray Dithan M45 @ 2 to 2.5 ml/lit of water as prophylactic measures after the rain.</li> </ul>   |
| <b>Bhindi</b>             | Fruiting to harvesting          | Jassids              | <ul style="list-style-type: none"> <li>➤ Infested leaf curl upward in margin. If small young nymphs of different colours are found on the underside of the leaves, spray Monocrotophos 36EC @ 1 ml / lit of water after harvesting the mature fruits.</li> </ul>   |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



|   |                       |            |   |
|---|-----------------------|------------|---|
| <b>Turmeric/ Coriander</b>                                  | Intercropping         |            | <ul style="list-style-type: none"> <li>- Coriander variety Green Wonder or local one may be sown as intercrop plants in Turmeric field.</li> <li>- High density sowing at a spacing of 5 cm x 10 cm may also be done.</li> </ul>  |
| <b>Cowpea</b>   | Sowing                |            | <ul style="list-style-type: none"> <li>- Cowpea may be sown as an intercrop in the fruit orchard such as lemon, orange, passion fruit, etc.</li> <li>- Land preparation; sowing spacing: 45 – 60 cm from seed to seed and row to row; raised beds are preferred for sowing.</li> <li>- Recommended varieties: Yard long bean &amp; Pusa Barsati.</li> </ul> |
| <b>Cucurbits (Water-melon, pumpkin, bitter gourd, etc.)</b> | Vegetative/harvest    |            | <ul style="list-style-type: none"> <li>- Avoid water stagnation in the root zone, harvest the mature ones.</li> <li>- Avoid the fruits to touch the ground by staking or with the support of dried twigs.</li> </ul>  |
| <b>Passion Fruit</b>  | Flowering to fruiting | Fruit rot  | - Spray Metalxyl + Mancozeb @ 2 g/litr water at 7 days interval   |
|   |                       | Fruit fly  | - Apply poison baiting with Jaggery + fruit juice + Malathion (20:20:1) @ 40-50 baits/ha.   |
|   |                       | Brown Spot | - Remove the infected leaves and burn. Spray Zineb @ 2 mg/ltr water.  |
|   |                       | Termite    | - Apply Chloropyriphos 10%G @ 25 kg/ha into the soil.   |
|   |                       | Collar rot | - Drench the soil of collar region with 1% Bordeaux mixture   |

### Animal Sciences

| Name of the animal   | Growth stage                          | Disease/ infestation  | Agro-meteorological advisories   |
|--|---------------------------------------|-----------------------|--|
| Do not let animals to graze in fodder fields now, as at the time of sudden growth in fodder after long submergence presence of cyanide has been found. |                                       |                       |  |
| <b>Poultry (Chicken/ Turkey/ Duck)</b>   | All age groups                        | Care & management     | <ul style="list-style-type: none"> <li>➤ Do not give muddy water as there is chance of <i>colibacillosis</i> during the rainy season.</li> <li>➤ Use water sanitizer in drinking water/potassium permanganate (few grains)</li> <li>➤ Keep the litter dry &amp; add 2 kg lime powder for 100 sq. ft. area and mix it properly.</li> </ul>  |
|  |                                       | Coccidiosis           | ➤ Use Amprolium @ 1.5g/ltr of drinking water for 5-7 days and electrolyte can be associated.   |
|  |                                       | Deworming             | ➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose.   |
| <b>Sheep/ Goat</b>   | All age groups excepts the young ones | Care & management     | <ul style="list-style-type: none"> <li>➤ Keep the animals on the platform if possible to avoid <i>Pneumonia</i> due to moisture problem</li> <li>➤ Give multivitamins @ 15ml orally</li> <li>➤ Use quality disinfectants for disinfecting the surrounding of the sheds.</li> <li>➤ 21 days after shearing sheep, their bodies should be drenched with Butox @ 2ml/ lit water. Use medicated water for drenching.</li> </ul>  |
|  |                                       | De-worming            | ➤ De-worming of animals should be done using Abendazole/Levamisole @ 7.5 mg/kg b.wt. or Ivermectin @ 50mg/kg b. wl.  |
| <b>Pig</b>   | All age groups except the young ones  | Care and management   | <ul style="list-style-type: none"> <li>➤ Mineral mixture be added in feed @ 10-20 g/adult animal.</li> <li>➤ Treat drinking water with potassium permanganate/ sanitizer.</li> <li>➤ Provide ample ventilation in the shed/ dry bedding. Avoid dampness in sheds</li> </ul>  |
|  |                                       | Mites infestation     | ➤ Spray with Skin Heal Spray in sufficient quantity.   |
|  |                                       | Enteric disease       | ➤ Use Livocin @ 7.5 mg per kg b.wt. 3-5 days.  |
| <b>Cattle</b>  | All age groups excepts the young ones | Diarrhoea & Dysentery | ➤ Prompt treatment with Antibiotics Sulpha drugs.  |
|  |                                       | Deworming             | ➤ Give Piperazine liquid @ 10-15ml orally once only.   |
|  |                                       | B.Q./ H.S/FMD         | ➤ If the animals have not yet been vaccinated, give vaccine, now for Black Quarter, Haemorrhagic septicaemia, Foot & Mouth Disease, Enterotoxaemia etc.  |
|  |                                       | Endoparasites         | ➤ De-worm orally once using Nilzan-F @ 90ml/ 300 kg body weight.   |
|  |                                       | Care & management     | <ul style="list-style-type: none"> <li>➤ If the animals do not have access to green fodders, vitamin E injection/ supplements should be given.</li> <li>➤ Food supplements may be given @ 20-30 gm/animals.</li> <li>➤ Do not let animals graze in irrigated fodder fields/meadows.</li> <li>➤ After the birth of the self the new born must be fed with Colostrum within the first two hours.</li> <li>➤ Give Calmore Forte @ 100ml orally once daily.</li> </ul> |
|  |                                       | Milk Fever            | ➤ Protect from milk fever by giving daily a mixture of calcium and phosphorus @ 70-100ml.  |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



| <b>Fishery:</b>                |                        |                   |   |
|--------------------------------|------------------------|-------------------|---|
| <b>Type of Farming</b>         | <b>Stage</b>           | <b>Management</b> | <b>Agro-metrological advisories</b>   |
| <b>Carp culture</b>            | Fish nurseries         | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.0-1.5m</li> <li>➤ Agri-lime should be applied in ponds</li> <li>➤ Ponds should be free from aquatic weed, predatory insects and fish.</li> <li>➤ Encircle the pond with net or bamboo mat as a preventive measure for flood.</li> </ul>  |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Fish feed should be provided @ 10-15 % body weight per day.</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ About 5 million feeding fries are stocked per 1 ha for pre-nursing pond</li> <li>➤ Duration is 25-45 days.</li> </ul>  |
|                                | Grow out               | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.5-2.0m</li> <li>➤ Regular liming should be done @ 30-35 kg/ha at 30 days interval</li> </ul>   |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Sampling of fish for growth, disease (if any) should be done by regular netting.</li> <li>➤ Partial harvesting of marketable size fishes are also recommended</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ Feed should be provided @ 3-5 % body weight per day</li> <li>➤ Feed can be fed at 2 times a day.</li> </ul>  |
|                                | Paddy cum fish culture | water             | <ul style="list-style-type: none"> <li>➤ Water depth of the field can be increase by pumping or draining if water is available to continue the culture.</li> <li>➤ 20-40% of the paddy plot can be made as 1.0-1.5m depth trenches.</li> <li>➤ 1000-3000 fish fingerlings can be stocked in 1 hectare rice field.</li> <li>➤ Feeding should be done @ 2% body weigh5t per day.</li> </ul> |
| <b>Integrated Fish Farming</b> | Pig                    |                   | <ul style="list-style-type: none"> <li>➤ About 30-40 two months old pigs may be kept for proper fertilization of the one ha pond. Pigs are feed on mash at an average of 1kg/day. Green grasses or animal folder is also provided. Grass with interlocked soil in the root system (sod) is provided once a week to avoid mineral deficiency.</li> </ul>                                   |
|                                | Duck                   |                   | <ul style="list-style-type: none"> <li>➤ 200-400 ducks of 2-3 months old are sufficient to adequately fertilize a 1 ha pond.</li> </ul>   |

(I. Meghachandra Singh)  
 Scientist i/c, IAAS



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**

**MANIPUR BULLETIN****22<sup>nd</sup> July, 2016****Chandel**

IAAS, ICAR-RC Manipur Centre in association with India Meteorological Department, Regional Meteorological Centre, Guwahati and Northern Hemisphere Analysis Centre, New Delhi, Ministry of Earth Science, Govt. of India reports the weather forecasts for the next five days, i.e., from 23<sup>rd</sup> to 27<sup>th</sup> July, 2016 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (19<sup>th</sup> to 21<sup>st</sup> July, 2016)**

The sky remained mainly cloudy to overcast and rainfall of 6.4 mm was recorded during past three days. Maximum temperature range observed was 28.0 to 31.2 °C, range of minimum temperature observed was 22.1 to 22.4 °C, mean relative humidity observed in morning and afternoon were 87.33 % and 71.33 % respectively. The average wind speed range was 3.1 to 5.9 km/hr.

**Weather forecast for next five days of Chandel (23<sup>rd</sup> to 27<sup>th</sup> July, 2016)**

Likely to have light rain and heavy rain at isolated places. Sky will remain mainly cloudy to overcast, with maximum temp. 27 - 29 °C & minimum temp. 19 - 21 °C. Relative humidity may reach upto 99 % (max RH) & 96 % (min RH). The average wind speed may be 0 - 2 km/hr. Wind direction may be Westerly to North - Westerly during the next five days.

**Weather Outlook for subsequent 2 days from 27th July to 29th July 2016****Rainfall at many places very likely over northeastern states****Weather warning for next five days \*****Likely to have heavy rain at isolated places over Manipur on 22<sup>nd</sup> July, 2016**

| Name of the crop          | Stage                           | Pest and disease     | Agro-meteorological advisories   |
|---------------------------|---------------------------------|----------------------|--|
| <b>Field Crops</b>        |                                 |                      |  |
| <b>Main kharif rice</b>   | Transplanting to Establishment  |                      | <ul style="list-style-type: none"> <li>➤ In replanting flooding fields, prepare rice nurseries in raised beds with RC- Maniphou 7.</li> <li>➤ During final leveling apply fertilizer @ 65kg Urea, 250 kg SSP and 33kg MOP as basal dose before transplanting seedlings.</li> <li>➤ Uproot 25-35 days old seedlings. About 1200-1300 bundles of seedlings (40cm diameter) are required for transplanting in one hectare area. Row planting of 2-3 seedlings per hill may be done at 25x10cm using beaded rope.</li> <li>➤ Maintain a thin film of water upto 7 days after transplanting. Release excess water if accumulated due to rain.</li> <li>➤ Thinning may be done in rice fields where plant population is high and replant in area where plants have died due to flood.</li> </ul> |
|                           |                                 | Thrips & Leaf folder | <ul style="list-style-type: none"> <li>➤ Spray Lambdacythrin 5% EC @ 15 ml/ 15 lit of water.</li> </ul>  |
| <b>Kharif maize</b>       | Cob formation to maturity       |                      | <ul style="list-style-type: none"> <li>➤ Weeding may be done on sunny days to control weeds/ insect-pest.</li> <li>➤ Maintain proper drainage system to avoid water logging.</li> <li>➤ Mature cobs may be harvested.</li> </ul>   |
| <b>Soybean</b>            | Sowing to vegetative            |                      | <ul style="list-style-type: none"> <li>➤ Maintain proper drainage system to avoid water logging</li> <li>➤ If not sown early, sowing must be done during July.</li> <li>➤ Keep the plot clean to avoid hairy caterpillars. Hand weeding should be done before 30-35 days after sowing.</li> <li>➤ For control of red hairy caterpillars in crops at vegetative stage, dust 5% Malathion @ 20 kg/ ha to control it or spray Dichlorovos 7.6 EC 0.05% (0.6ml/ lit of water)</li> </ul>   |
| <b>Storage (seed)</b>     |                                 |                      | <ul style="list-style-type: none"> <li>➤ Dry, clean and store the seeds in RC-seed bins after proper drying of seeds along with charcoal. Check for moisture content or weight of seeds. After proper drying, store grains in well ventilated godowns. Spray Malathion 1% in godowns.</li> </ul>   |
| <b>Horticulture Crops</b> |                                 |                      |  |
| <b>Turmeric/ Ginger</b>   | Vegetative to rhizome formation | Leaf spot disease    | <ul style="list-style-type: none"> <li>➤ Spray Redomil MZ-72 WP @ 2g/lit of water alternatively with Carbendazim @ 2g/ lit of water at 14 days interval.</li> </ul>  |
|                           |                                 | Rhizome rot          | <ul style="list-style-type: none"> <li>➤ To prevent rhizome rot spray Redomil MZ 72 W.P. @ 2 g/ lit of water at 15 days interval for 2-3 times.</li> </ul>   |
|                           |                                 |                      | <ul style="list-style-type: none"> <li>➤ For grown up plants spray Dithan M45 @ 2 to 2.5 ml/lit of water as prophylactic measures after the rain.</li> </ul>   |
| <b>Bhindi</b>             | Fruiting to harvesting          | Jassids              | <ul style="list-style-type: none"> <li>➤ Infested leaf curl upward in margin. If small young nymphs of different colours are found on the underside of the leaves, spray Monocrotophos 36EC @ 1 ml / lit of water after harvesting the mature fruits.</li> </ul>   |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



|   |                       |            |   |
|---|-----------------------|------------|---|
| <b>Turmeric/ Coriander</b>                                  | Intercropping         |            | <ul style="list-style-type: none"> <li>- Coriander variety Green Wonder or local one may be sown as intercrop plants in Turmeric field.</li> <li>- High density sowing at a spacing of 5 cm x 10 cm may also be done.</li> </ul>  |
| <b>Cowpea</b>   | Sowing                |            | <ul style="list-style-type: none"> <li>- Cowpea may be sown as an intercrop in the fruit orchard such as lemon, orange, passion fruit, etc.</li> <li>- Land preparation; sowing spacing: 45 – 60 cm from seed to seed and row to row; raised beds are preferred for sowing.</li> <li>- Recommended varieties: Yard long bean &amp; Pusa Barsati.</li> </ul> |
| <b>Cucurbits (Water-melon, pumpkin, bitter gourd, etc.)</b> | Vegetative/harvest    |            | <ul style="list-style-type: none"> <li>- Avoid water stagnation in the root zone, harvest the mature ones.</li> <li>- Avoid the fruits to touch the ground by staking or with the support of dried twigs.</li> </ul>  |
| <b>Passion Fruit</b>  | Flowering to fruiting | Fruit rot  | - Spray Metalxyl + Mancozeb @ 2 g/litr water at 7 days interval   |
|   |                       | Fruit fly  | - Apply poison baiting with Jaggery + fruit juice + Malathion (20:20:1) @ 40-50 baits/ha.   |
|   |                       | Brown Spot | - Remove the infected leaves and burn. Spray Zineb @ 2 mg/ltr water.  |
|   |                       | Termite    | - Apply Chloropyriphos 10%G @ 25 kg/ha into the soil.   |
|   |                       | Collar rot | - Drench the soil of collar region with 1% Bordeaux mixture   |

### Animal Sciences

| Name of the animal   | Growth stage                          | Disease/ infestation  | Agro-meteorological advisories   |
|--|---------------------------------------|-----------------------|--|
| Do not let animals to graze in fodder fields now, as at the time of sudden growth in fodder after long submergence presence of cyanide has been found. |                                       |                       |  |
| <b>Poultry (Chicken/ Turkey/ Duck)</b>   | All age groups                        | Care & management     | <ul style="list-style-type: none"> <li>➤ Do not give muddy water as there is chance of <i>colibacillosis</i> during the rainy season.</li> <li>➤ Use water sanitizer in drinking water/potassium permanganate (few grains)</li> <li>➤ Keep the litter dry &amp; add 2 kg lime powder for 100 sq. ft. area and mix it properly.</li> </ul>  |
|  |                                       | Coccidiosis           | ➤ Use Amprolium @ 1.5g/ltr of drinking water for 5-7 days and electrolyte can be associated.   |
|  |                                       | Deworming             | ➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose.   |
| <b>Sheep/ Goat</b>   | All age groups excepts the young ones | Care & management     | <ul style="list-style-type: none"> <li>➤ Keep the animals on the platform if possible to avoid <i>Pneumonia</i> due to moisture problem</li> <li>➤ Give multivitamins @ 15ml orally</li> <li>➤ Use quality disinfectants for disinfecting the surrounding of the sheds.</li> <li>➤ 21 days after shearing sheep, their bodies should be drenched with Butox @ 2ml/ lit water. Use medicated water for drenching.</li> </ul>  |
|  |                                       | De-worming            | ➤ De-worming of animals should be done using Abendazole/Levamisole @ 7.5 mg/kg b.wt. or Ivermectin @ 50mg/kg b. wl.  |
| <b>Pig</b>   | All age groups except the young ones  | Care and management   | <ul style="list-style-type: none"> <li>➤ Mineral mixture be added in feed @ 10-20 g/adult animal.</li> <li>➤ Treat drinking water with potassium permanganate/ sanitizer.</li> <li>➤ Provide ample ventilation in the shed/ dry bedding. Avoid dampness in sheds</li> </ul>  |
|  |                                       | Mites infestation     | ➤ Spray with Skin Heal Spray in sufficient quantity.   |
|  |                                       | Enteric disease       | ➤ Use Livocin @ 7.5 mg per kg b.wt. 3-5 days.  |
| <b>Cattle</b>  | All age groups excepts the young ones | Diarrhoea & Dysentery | ➤ Prompt treatment with Antibiotics Sulpha drugs.  |
|  |                                       | Deworming             | ➤ Give Piperazine liquid @ 10-15ml orally once only.   |
|  |                                       | B.Q./ H.S/FMD         | ➤ If the animals have not yet been vaccinated, give vaccine, now for Black Quarter, Haemorrhagic septicaemia, Foot & Mouth Disease, Enterotoxaemia etc.  |
|  |                                       | Endoparasites         | ➤ De-worm orally once using Nilzan-F @ 90ml/ 300 kg body weight.   |
|  |                                       | Care & management     | <ul style="list-style-type: none"> <li>➤ If the animals do not have access to green fodders, vitamin E injection/ supplements should be given.</li> <li>➤ Food supplements may be given @ 20-30 gm/animals.</li> <li>➤ Do not let animals graze in irrigated fodder fields/meadows.</li> <li>➤ After the birth of the self the new born must be fed with Colostrum within the first two hours.</li> <li>➤ Give Calmore Forte @ 100ml orally once daily.</li> </ul> |
|  |                                       | Milk Fever            | ➤ Protect from milk fever by giving daily a mixture of calcium and phosphorus @ 70-100ml.  |





**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



| <b>Fishery:</b>                |                        |                   |   |
|--------------------------------|------------------------|-------------------|---|
| <b>Type of Farming</b>         | <b>Stage</b>           | <b>Management</b> | <b>Agro-metrological advisories</b>   |
| <b>Carp culture</b>            | Fish nurseries         | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.0-1.5m</li> <li>➤ Agri-lime should be applied in ponds</li> <li>➤ Ponds should be free from aquatic weed, predatory insects and fish.</li> <li>➤ Encircle the pond with net or bamboo mat as a preventive measure for flood.</li> </ul>  |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Fish feed should be provided @ 10-15 % body weight per day.</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ About 5 million feeding fries are stocked per 1 ha for pre-nursing pond</li> <li>➤ Duration is 25-45 days.</li> </ul>  |
|                                | Grow out               | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.5-2.0m</li> <li>➤ Regular liming should be done @ 30-35 kg/ha at 30 days interval</li> </ul>   |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Sampling of fish for growth, disease (if any) should be done by regular netting.</li> <li>➤ Partial harvesting of marketable size fishes are also recommended</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ Feed should be provided @ 3-5 % body weight per day</li> <li>➤ Feed can be fed at 2 times a day.</li> </ul>  |
|                                | Paddy cum fish culture | water             | <ul style="list-style-type: none"> <li>➤ Water depth of the field can be increase by pumping or draining if water is available to continue the culture.</li> <li>➤ 20-40% of the paddy plot can be made as 1.0-1.5m depth trenches.</li> <li>➤ 1000-3000 fish fingerlings can be stocked in 1 hectare rice field.</li> <li>➤ Feeding should be done @ 2% body weigh5t per day.</li> </ul> |
| <b>Integrated Fish Farming</b> | Pig                    |                   | <ul style="list-style-type: none"> <li>➤ About 30-40 two months old pigs may be kept for proper fertilization of the one ha pond. Pigs are feed on mash at an average of 1kg/day. Green grasses or animal folder is also provided. Grass with interlocked soil in the root system (sod) is provided once a week to avoid mineral deficiency.</li> </ul>                                   |
|                                | Duck                   |                   | <ul style="list-style-type: none"> <li>➤ 200-400 ducks of 2-3 months old are sufficient to adequately fertilize a 1 ha pond.</li> </ul>   |

(I. Meghachandra Singh)  
 Scientist i/c, IAAS



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**

**MANIPUR BULLETIN****22<sup>nd</sup> July, 2016****Churachandpur**

IAAS, ICAR-RC Manipur Centre in association with India Meteorological Department, Regional Meteorological Centre, Guwahati and Northern Hemisphere Analysis Centre, New Delhi, Ministry of Earth Science, Govt. of India reports the weather forecasts for the next five days, i.e., from 23<sup>rd</sup> to 27<sup>th</sup> July, 2016 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (19<sup>th</sup> to 21<sup>st</sup> July, 2016)**

The sky remained mainly cloudy to overcast and rainfall of 6.4 mm was recorded during past three days. Maximum temperature range observed was 28.0 to 31.2 °C, range of minimum temperature observed was 22.1 to 22.4 °C, mean relative humidity observed in morning and afternoon were 87.33 % and 71.33 % respectively. The average wind speed range was 3.1 to 5.9 km/hr.

**Weather forecast for next five days of Churachandpur (23<sup>rd</sup> to 27<sup>th</sup> July, 2016)**

Likely to have light rain and heavy rain at isolated places. Sky will remain mainly cloudy to overcast, with maximum temp. 29 - 31 °C & minimum temp. 21 - 23 °C. Relative humidity may reach upto 100 % (max RH) & 98 % (min RH). The average wind speed may be 2 - 4 km/hr. Wind direction may be Westerly to North - Westerly during the next five days.

**Weather Outlook for subsequent 2 days from 27th July to 29th July 2016****Rainfall at many places very likely over northeastern states****Weather warning for next five days \*****Likely to have heavy rain at isolated places over Manipur on 22<sup>nd</sup> July, 2016**

| Name of the crop          | Stage                           | Pest and disease     | Agro-meteorological advisories   |
|---------------------------|---------------------------------|----------------------|--|
| <b>Field Crops</b>        |                                 |                      |  |
| <b>Main kharif rice</b>   | Transplanting to Establishment  |                      | <ul style="list-style-type: none"> <li>➤ In replanting flooding fields, prepare rice nurseries in raised beds with RC- Maniphou 7.</li> <li>➤ During final leveling apply fertilizer @ 65kg Urea, 250 kg SSP and 33kg MOP as basal dose before transplanting seedlings.</li> <li>➤ Uproot 25-35 days old seedlings. About 1200-1300 bundles of seedlings (40cm diameter) are required for transplanting in one hectare area. Row planting of 2-3 seedlings per hill may be done at 25x10cm using beaded rope.</li> <li>➤ Maintain a thin film of water upto 7 days after transplanting. Release excess water if accumulated due to rain.</li> <li>➤ Thinning may be done in rice fields where plant population is high and replant in area where plants have died due to flood.</li> </ul> |
|                           |                                 | Thrips & Leaf folder | <ul style="list-style-type: none"> <li>➤ Spray Lambdacythrin 5% EC @ 15 ml/ 15 lit of water.</li> </ul>  |
| <b>Kharif maize</b>       | Cob formation to maturity       |                      | <ul style="list-style-type: none"> <li>➤ Weeding may be done on sunny days to control weeds/ insect-pest.</li> <li>➤ Maintain proper drainage system to avoid water logging.</li> <li>➤ Mature cobs may be harvested.</li> </ul>   |
| <b>Soybean</b>            | Sowing to vegetative            |                      | <ul style="list-style-type: none"> <li>➤ Maintain proper drainage system to avoid water logging</li> <li>➤ If not sown early, sowing must be done during July.</li> <li>➤ Keep the plot clean to avoid hairy caterpillars. Hand weeding should be done before 30-35 days after sowing.</li> <li>➤ For control of red hairy caterpillars in crops at vegetative stage, dust 5% Malathion @ 20 kg/ ha to control it or spray Dichlorovos 7.6 EC 0.05% (0.6ml/ lit of water)</li> </ul>   |
| <b>Storage (seed)</b>     |                                 |                      | <ul style="list-style-type: none"> <li>➤ Dry, clean and store the seeds in RC-seed bins after proper drying of seeds along with charcoal. Check for moisture content or weight of seeds. After proper drying, store grains in well ventilated godowns. Spray Malathion 1% in godowns.</li> </ul>   |
| <b>Horticulture Crops</b> |                                 |                      |  |
| <b>Turmeric/ Ginger</b>   | Vegetative to rhizome formation | Leaf spot disease    | <ul style="list-style-type: none"> <li>➤ Spray Redomil MZ-72 WP @ 2g/lit of water alternatively with Carbendazim @ 2g/ lit of water at 14 days interval.</li> </ul>  |
|                           |                                 | Rhizome rot          | <ul style="list-style-type: none"> <li>➤ To prevent rhizome rot spray Redomil MZ 72 W.P. @ 2 g/ lit of water at 15 days interval for 2-3 times.</li> </ul>   |
|                           |                                 |                      | <ul style="list-style-type: none"> <li>➤ For grown up plants spray Dithan M45 @ 2 to 2.5 ml/lit of water as prophylactic measures after the rain.</li> </ul>   |
| <b>Bhindi</b>             | Fruiting to harvesting          | Jassids              | <ul style="list-style-type: none"> <li>➤ Infested leaf curl upward in margin. If small young nymphs of different colours are found on the underside of the leaves, spray Monocrotophos 36EC @ 1 ml / lit of water after harvesting the mature fruits.</li> </ul>   |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



|   |                       |            |   |
|---|-----------------------|------------|---|
| <b>Turmeric/ Coriander</b>                                  | Intercropping         |            | <ul style="list-style-type: none"> <li>- Coriander variety Green Wonder or local one may be sown as intercrop plants in Turmeric field.</li> <li>- High density sowing at a spacing of 5 cm x 10 cm may also be done.</li> </ul>  |
| <b>Cowpea</b>   | Sowing                |            | <ul style="list-style-type: none"> <li>- Cowpea may be sown as an intercrop in the fruit orchard such as lemon, orange, passion fruit, etc.</li> <li>- Land preparation; sowing spacing: 45 – 60 cm from seed to seed and row to row; raised beds are preferred for sowing.</li> <li>- Recommended varieties: Yard long bean &amp; Pusa Barsati.</li> </ul> |
| <b>Cucurbits (Water-melon, pumpkin, bitter gourd, etc.)</b> | Vegetative/harvest    |            | <ul style="list-style-type: none"> <li>- Avoid water stagnation in the root zone, harvest the mature ones.</li> <li>- Avoid the fruits to touch the ground by staking or with the support of dried twigs.</li> </ul>  |
| <b>Passion Fruit</b>  | Flowering to fruiting | Fruit rot  | - Spray Metalxyl + Mancozeb @ 2 g/litr water at 7 days interval   |
|   |                       | Fruit fly  | - Apply poison baiting with Jaggery + fruit juice + Malathion (20:20:1) @ 40-50 baits/ha.   |
|   |                       | Brown Spot | - Remove the infected leaves and burn. Spray Zineb @ 2 mg/ltr water.  |
|   |                       | Termite    | - Apply Chloropyriphos 10%G @ 25 kg/ha into the soil.   |
|   |                       | Collar rot | - Drench the soil of collar region with 1% Bordeaux mixture   |

### Animal Sciences

| Name of the animal   | Growth stage                          | Disease/ infestation  | Agro-meteorological advisories   |
|--|---------------------------------------|-----------------------|--|
| Do not let animals to graze in fodder fields now, as at the time of sudden growth in fodder after long submergence presence of cyanide has been found. |                                       |                       |  |
| <b>Poultry (Chicken/ Turkey/ Duck)</b>   | All age groups                        | Care & management     | <ul style="list-style-type: none"> <li>➤ Do not give muddy water as there is chance of <i>colibacillosis</i> during the rainy season.</li> <li>➤ Use water sanitizer in drinking water/potassium permanganate (few grains)</li> <li>➤ Keep the litter dry &amp; add 2 kg lime powder for 100 sq. ft. area and mix it properly.</li> </ul>  |
|  |                                       | Coccidiosis           | ➤ Use Amprolium @ 1.5g/ltr of drinking water for 5-7 days and electrolyte can be associated.   |
|  |                                       | Deworming             | ➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose.   |
| <b>Sheep/ Goat</b>   | All age groups excepts the young ones | Care & management     | <ul style="list-style-type: none"> <li>➤ Keep the animals on the platform if possible to avoid <i>Pneumonia</i> due to moisture problem</li> <li>➤ Give multivitamins @ 15ml orally</li> <li>➤ Use quality disinfectants for disinfecting the surrounding of the sheds.</li> <li>➤ 21 days after shearing sheep, their bodies should be drenched with Butox @ 2ml/ lit water. Use medicated water for drenching.</li> </ul>  |
|  |                                       | De-worming            | ➤ De-worming of animals should be done using Abendazole/Levamisole @ 7.5 mg/kg b.wt. or Ivermectin @ 50mg/kg b. wl.  |
| <b>Pig</b>   | All age groups except the young ones  | Care and management   | <ul style="list-style-type: none"> <li>➤ Mineral mixture be added in feed @ 10-20 g/adult animal.</li> <li>➤ Treat drinking water with potassium permanganate/ sanitizer.</li> <li>➤ Provide ample ventilation in the shed/ dry bedding. Avoid dampness in sheds</li> </ul>  |
|  |                                       | Mites infestation     | ➤ Spray with Skin Heal Spray in sufficient quantity.   |
|  |                                       | Enteric disease       | ➤ Use Livocin @ 7.5 mg per kg b.wt. 3-5 days.  |
| <b>Cattle</b>  | All age groups excepts the young ones | Diarrhoea & Dysentery | ➤ Prompt treatment with Antibiotics Sulpha drugs.  |
|  |                                       | Deworming             | ➤ Give Piperazine liquid @ 10-15ml orally once only.   |
|  |                                       | B.Q./ H.S/FMD         | ➤ If the animals have not yet been vaccinated, give vaccine, now for Black Quarter, Haemorrhagic septicaemia, Foot & Mouth Disease, Enterotoxaemia etc.  |
|  |                                       | Endoparasites         | ➤ De-worm orally once using Nilzan-F @ 90ml/ 300 kg body weight.   |
|  |                                       | Care & management     | <ul style="list-style-type: none"> <li>➤ If the animals do not have access to green fodders, vitamin E injection/ supplements should be given.</li> <li>➤ Food supplements may be given @ 20-30 gm/animals.</li> <li>➤ Do not let animals graze in irrigated fodder fields/meadows.</li> <li>➤ After the birth of the self the new born must be fed with Colostrum within the first two hours.</li> <li>➤ Give Calmore Forte @ 100ml orally once daily.</li> </ul> |
|  |                                       | Milk Fever            | ➤ Protect from milk fever by giving daily a mixture of calcium and phosphorus @ 70-100ml.  |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



| <b>Fishery:</b>                |                        |                   |   |
|--------------------------------|------------------------|-------------------|---|
| <b>Type of Farming</b>         | <b>Stage</b>           | <b>Management</b> | <b>Agro-metrological advisories</b>   |
| <b>Carp culture</b>            | Fish nurseries         | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.0-1.5m</li> <li>➤ Agri-lime should be applied in ponds</li> <li>➤ Ponds should be free from aquatic weed, predatory insects and fish.</li> <li>➤ Encircle the pond with net or bamboo mat as a preventive measure for flood.</li> </ul>  |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Fish feed should be provided @ 10-15 % body weight per day.</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ About 5 million feeding fries are stocked per 1 ha for pre-nursing pond</li> <li>➤ Duration is 25-45 days.</li> </ul>  |
|                                | Grow out               | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.5-2.0m</li> <li>➤ Regular liming should be done @ 30-35 kg/ha at 30 days interval</li> </ul>   |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Sampling of fish for growth, disease (if any) should be done by regular netting.</li> <li>➤ Partial harvesting of marketable size fishes are also recommended</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ Feed should be provided @ 3-5 % body weight per day</li> <li>➤ Feed can be fed at 2 times a day.</li> </ul>  |
|                                | Paddy cum fish culture | water             | <ul style="list-style-type: none"> <li>➤ Water depth of the field can be increase by pumping or draining if water is available to continue the culture.</li> <li>➤ 20-40% of the paddy plot can be made as 1.0-1.5m depth trenches.</li> <li>➤ 1000-3000 fish fingerlings can be stocked in 1 hectare rice field.</li> <li>➤ Feeding should be done @ 2% body weigh5t per day.</li> </ul> |
| <b>Integrated Fish Farming</b> | Pig                    |                   | <ul style="list-style-type: none"> <li>➤ About 30-40 two months old pigs may be kept for proper fertilization of the one ha pond. Pigs are feed on mash at an average of 1kg/day. Green grasses or animal folder is also provided. Grass with interlocked soil in the root system (sod) is provided once a week to avoid mineral deficiency.</li> </ul>                                   |
|                                | Duck                   |                   | <ul style="list-style-type: none"> <li>➤ 200-400 ducks of 2-3 months old are sufficient to adequately fertilize a 1 ha pond.</li> </ul>   |

(I. Meghachandra Singh)  
 Scientist i/c, IAAS



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**

**MANIPUR BULLETIN****22<sup>nd</sup> July, 2016****Imphal East**

IAAS, ICAR-RC Manipur Centre in association with India Meteorological Department, Regional Meteorological Centre, Guwahati and Northern Hemisphere Analysis Centre, New Delhi, Ministry of Earth Science, Govt. of India reports the weather forecasts for the next five days, i.e., from 23<sup>rd</sup> to 27<sup>th</sup> July, 2016 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (19<sup>th</sup> to 21<sup>st</sup> July, 2016)**

The sky remained mainly cloudy to overcast and rainfall of 6.4 mm was recorded during past three days. Maximum temperature range observed was 28.0 to 31.2 °C, range of minimum temperature observed was 22.1 to 22.4 °C, mean relative humidity observed in morning and afternoon were 87.33 % and 71.33 % respectively. The average wind speed range was 3.1 to 5.9 km/hr.

**Weather forecast for next five days of Imphal East (23<sup>rd</sup> to 27<sup>th</sup> July, 2016)**

Likely to have light rain and heavy rain at isolated places on Friday. Sky will remain mainly cloudy to overcast, with maximum temp. 29 - 30 °C & minimum temp. 22 - 23 °C. Relative humidity may reach upto 99 % (max RH) & 97 % (min RH). The average wind speed may be 2-3 km/hr. Wind direction may be Westerly to North - Westerly during the next five days.

**Weather Outlook for subsequent 2 days from 27th July to 29th July 2016****Rainfall at many places very likely over northeastern states****Weather warning for next five days \*****Likely to have heavy rain at isolated places over Manipur on 22<sup>nd</sup> July, 2016**

| Name of the crop          | Stage                           | Pest and disease     | Agro-meteorological advisories   |
|---------------------------|---------------------------------|----------------------|--|
| <b>Field Crops</b>        |                                 |                      |  |
| <b>Main kharif rice</b>   | Transplanting to Establishment  |                      | <ul style="list-style-type: none"> <li>➤ In replanting flooding fields, prepare rice nurseries in raised beds with RC- Maniphou 7.</li> <li>➤ During final leveling apply fertilizer @ 65kg Urea, 250 kg SSP and 33kg MOP as basal dose before transplanting seedlings.</li> <li>➤ Uproot 25-35 days old seedlings. About 1200-1300 bundles of seedlings (40cm diameter) are required for transplanting in one hectare area. Row planting of 2-3 seedlings per hill may be done at 25x10cm using beaded rope.</li> <li>➤ Maintain a thin film of water upto 7 days after transplanting. Release excess water if accumulated due to rain.</li> <li>➤ Thinning may be done in rice fields where plant population is high and replant in area where plants have died due to flood.</li> </ul> |
|                           |                                 | Thrips & Leaf folder | <ul style="list-style-type: none"> <li>➤ Spray Lambdacythrin 5% EC @ 15 ml/ 15 lit of water.</li> </ul>  |
| <b>Kharif maize</b>       | Cob formation to maturity       |                      | <ul style="list-style-type: none"> <li>➤ Weeding may be done on sunny days to control weeds/ insect-pest.</li> <li>➤ Maintain proper drainage system to avoid water logging.</li> <li>➤ Mature cobs may be harvested.</li> </ul>   |
| <b>Soybean</b>            | Sowing to vegetative            |                      | <ul style="list-style-type: none"> <li>➤ Maintain proper drainage system to avoid water logging</li> <li>➤ If not sown early, sowing must be done during July.</li> <li>➤ Keep the plot clean to avoid hairy caterpillars. Hand weeding should be done before 30-35 days after sowing.</li> <li>➤ For control of red hairy caterpillars in crops at vegetative stage, dust 5% Malathion @ 20 kg/ ha to control it or spray Dichlorovos 7.6 EC 0.05% (0.6ml/ lit of water)</li> </ul>   |
| <b>Storage (seed)</b>     |                                 |                      | <ul style="list-style-type: none"> <li>➤ Dry, clean and store the seeds in RC-seed bins after proper drying of seeds along with charcoal. Check for moisture content or weight of seeds. After proper drying, store grains in well ventilated godowns. Spray Malathion 1% in godowns.</li> </ul>   |
| <b>Horticulture Crops</b> |                                 |                      |  |
| <b>Turmeric/ Ginger</b>   | Vegetative to rhizome formation | Leaf spot disease    | <ul style="list-style-type: none"> <li>➤ Spray Redomil MZ-72 WP @ 2g/lit of water alternatively with Carbendazim @ 2g/ lit of water at 14 days interval.</li> </ul>  |
|                           |                                 | Rhizome rot          | <ul style="list-style-type: none"> <li>➤ To prevent rhizome rot spray Redomil MZ 72 W.P. @ 2 g/ lit of water at 15 days interval for 2-3 times.</li> </ul>   |
|                           |                                 |                      | <ul style="list-style-type: none"> <li>➤ For grown up plants spray Dithan M45 @ 2 to 2.5 ml/lit of water as prophylactic measures after the rain.</li> </ul>   |
| <b>Bhindi</b>             | Fruiting to harvesting          | Jassids              | <ul style="list-style-type: none"> <li>➤ Infested leaf curl upward in margin. If small young nymphs of different colours are found on the underside of the leaves, spray Monocrotophos 36EC @ 1 ml / lit of water after harvesting the mature fruits.</li> </ul>   |

**ICAR Research Complex for N.E.H. Region****Manipur Centre, Lamphelpat, Imphal - 795 004****“Gramin Krishi Mausam Seva”**

|   |                       |            |   |
|---|-----------------------|------------|---|
| <b>Turmeric/ Coriander</b>                                  | Intercropping         |            | <ul style="list-style-type: none"> <li>- Coriander variety Green Wonder or local one may be sown as intercrop plants in Turmeric field.</li> <li>- High density sowing at a spacing of 5 cm x 10 cm may also be done.</li> </ul>  |
| <b>Cowpea</b>   | Sowing                |            | <ul style="list-style-type: none"> <li>- Cowpea may be sown as an intercrop in the fruit orchard such as lemon, orange, passion fruit, etc.</li> <li>- Land preparation; sowing spacing: 45 – 60 cm from seed to seed and row to row; raised beds are preferred for sowing.</li> <li>- Recommended varieties: Yard long bean &amp; Pusa Barsati.</li> </ul> |
| <b>Cucurbits (Water-melon, pumpkin, bitter gourd, etc.)</b> | Vegetative/harvest    |            | <ul style="list-style-type: none"> <li>- Avoid water stagnation in the root zone, harvest the mature ones.</li> <li>- Avoid the fruits to touch the ground by staking or with the support of dried twigs.</li> </ul>  |
| <b>Passion Fruit</b>  | Flowering to fruiting | Fruit rot  | - Spray Metalxyl + Mancozeb @ 2 g/litr water at 7 days interval   |
|   |                       | Fruit fly  | - Apply poison baiting with Jaggery + fruit juice + Malathion (20:20:1) @ 40-50 baits/ha.   |
|   |                       | Brown Spot | - Remove the infected leaves and burn. Spray Zineb @ 2 mg/ltr water.  |
|   |                       | Termite    | - Apply Chloropyriphos 10%G @ 25 kg/ha into the soil.   |
|   |                       | Collar rot | - Drench the soil of collar region with 1% Bordeaux mixture   |

**Animal Sciences**

| <b>Name of the animal</b>  | <b>Growth stage</b>                   | <b>Disease/ infestation</b> | <b>Agro-meteorological advisories</b>  |
|--|---------------------------------------|-----------------------------|--|
| Do not let animals to graze in fodder fields now, as at the time of sudden growth in fodder after long submergence presence of cyanide has been found. |                                       |                             |  |
| <b>Poultry (Chicken/ Turkey/ Duck)</b>   | All age groups                        | Care & management           | <ul style="list-style-type: none"> <li>➤ Do not give muddy water as there is chance of <i>colibacillosis</i> during the rainy season.</li> <li>➤ Use water sanitizer in drinking water/potassium permanganate (few grains)</li> <li>➤ Keep the litter dry &amp; add 2 kg lime powder for 100 sq. ft. area and mix it properly.</li> </ul>  |
|  |                                       | Coccidiosis                 | ➤ Use Amprolium @ 1.5g/ltr of drinking water for 5-7 days and electrolyte can be associated.   |
|  |                                       | Deworming                   | ➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose.   |
| <b>Sheep/ Goat</b>   | All age groups excepts the young ones | Care & management           | <ul style="list-style-type: none"> <li>➤ Keep the animals on the platform if possible to avoid <i>Pneumonia</i> due to moisture problem</li> <li>➤ Give multivitamins @ 15ml orally</li> <li>➤ Use quality disinfectants for disinfecting the surrounding of the sheds.</li> <li>➤ 21 days after shearing sheep, their bodies should be drenched with Butox @ 2ml/ lit water. Use medicated water for drenching.</li> </ul>  |
|  |                                       | De-worming                  | ➤ De-worming of animals should be done using Abendazole/Levamisole @ 7.5 mg/kg b.wt. or Ivermectin @ 50mg/kg b. wl.  |
| <b>Pig</b>   | All age groups except the young ones  | Care and management         | <ul style="list-style-type: none"> <li>➤ Mineral mixture be added in feed @ 10-20 g/adult animal.</li> <li>➤ Treat drinking water with potassium permanganate/ sanitizer.</li> <li>➤ Provide ample ventilation in the shed/ dry bedding. Avoid dampness in sheds</li> </ul>  |
|  |                                       | Mites infestation           | ➤ Spray with Skin Heal Spray in sufficient quantity.   |
|  |                                       | Enteric disease             | ➤ Use Livocin @ 7.5 mg per kg b.wt. 3-5 days.  |
| <b>Cattle</b>  | All age groups excepts the young ones | Diarrhoea & Dysentery       | ➤ Prompt treatment with Antibiotics Sulpha drugs.  |
|  |                                       | Deworming                   | ➤ Give Piperazine liquid @ 10-15ml orally once only.   |
|  |                                       | B.Q./ H.S/FMD               | ➤ If the animals have not yet been vaccinated, give vaccine, now for Black Quarter, Haemorrhagic septicaemia, Foot & Mouth Disease, Enterotoxaemia etc.  |
|  |                                       | Endoparasites               | ➤ De-worm orally once using Nilzan-F @ 90ml/ 300 kg body weight.   |
|  |                                       | Care & management           | <ul style="list-style-type: none"> <li>➤ If the animals do not have access to green fodders, vitamin E injection/ supplements should be given.</li> <li>➤ Food supplements may be given @ 20-30 gm/animals.</li> <li>➤ Do not let animals graze in irrigated fodder fields/meadows.</li> <li>➤ After the birth of the self the new born must be fed with Colostrum within the first two hours.</li> <li>➤ Give Calmore Forte @ 100ml orally once daily.</li> </ul> |
|  |                                       | Milk Fever                  | ➤ Protect from milk fever by giving daily a mixture of calcium and phosphorus @ 70-100ml.  |





**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



| <b>Fishery:</b>                |                        |                   |   |
|--------------------------------|------------------------|-------------------|---|
| <b>Type of Farming</b>         | <b>Stage</b>           | <b>Management</b> | <b>Agro-metrological advisories</b>   |
| <b>Carp culture</b>            | Fish nurseries         | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.0-1.5m</li> <li>➤ Agri-lime should be applied in ponds</li> <li>➤ Ponds should be free from aquatic weed, predatory insects and fish.</li> <li>➤ Encircle the pond with net or bamboo mat as a preventive measure for flood.</li> </ul>  |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Fish feed should be provided @ 10-15 % body weight per day.</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ About 5 million feeding fries are stocked per 1 ha for pre-nursing pond</li> <li>➤ Duration is 25-45 days.</li> </ul>  |
|                                | Grow out               | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.5-2.0m</li> <li>➤ Regular liming should be done @ 30-35 kg/ha at 30 days interval</li> </ul>   |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Sampling of fish for growth, disease (if any) should be done by regular netting.</li> <li>➤ Partial harvesting of marketable size fishes are also recommended</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ Feed should be provided @ 3-5 % body weight per day</li> <li>➤ Feed can be fed at 2 times a day.</li> </ul>  |
|                                | Paddy cum fish culture | water             | <ul style="list-style-type: none"> <li>➤ Water depth of the field can be increase by pumping or draining if water is available to continue the culture.</li> <li>➤ 20-40% of the paddy plot can be made as 1.0-1.5m depth trenches.</li> <li>➤ 1000-3000 fish fingerlings can be stocked in 1 hectare rice field.</li> <li>➤ Feeding should be done @ 2% body weigh5t per day.</li> </ul> |
| <b>Integrated Fish Farming</b> | Pig                    |                   | <ul style="list-style-type: none"> <li>➤ About 30-40 two months old pigs may be kept for proper fertilization of the one ha pond. Pigs are feed on mash at an average of 1kg/day. Green grasses or animal folder is also provided. Grass with interlocked soil in the root system (sod) is provided once a week to avoid mineral deficiency.</li> </ul>                                   |
|                                | Duck                   |                   | <ul style="list-style-type: none"> <li>➤ 200-400 ducks of 2-3 months old are sufficient to adequately fertilize a 1 ha pond.</li> </ul>   |

(I. Meghachandra Singh)  
 Scientist i/c, IAAS



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**

**MANIPUR BULLETIN****22<sup>nd</sup> July, 2016****Imphal West**

IAAS, ICAR-RC Manipur Centre in association with India Meteorological Department, Regional Meteorological Centre, Guwahati and Northern Hemisphere Analysis Centre, New Delhi, Ministry of Earth Science, Govt. of India reports the weather forecasts for the next five days, i.e., from 23<sup>rd</sup> to 27<sup>th</sup> July, 2016 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (19<sup>th</sup> to 21<sup>st</sup> July, 2016)**

The sky remained mainly cloudy to overcast and rainfall of 6.4 mm was recorded during past three days. Maximum temperature range observed was 28.0 to 31.2 °C, range of minimum temperature observed was 22.1 to 22.4 °C, mean relative humidity observed in morning and afternoon were 87.33 % and 71.33 % respectively. The average wind speed range was 3.1 to 5.9 km/hr.

**Weather forecast for next five days of Imphal West (23<sup>rd</sup> to 27<sup>th</sup> July, 2016)**

Likely to have light rain and heavy rain at isolated places on Friday. Sky will remain mainly cloudy to overcast, with maximum temp. 29 - 31 °C & minimum temp. 21 - 23 °C. Relative humidity may reach upto 100 % (max RH) & 97 % (min RH). The average wind speed may be 2 km/hr. Wind direction may be Southerly to South-Westerly during the next five days.

**Weather Outlook for subsequent 2 days from 27th July to 29th July 2016****Rainfall at many places very likely over northeastern states****Weather warning for next five days \*****Likely to have heavy rain at isolated places over Manipur on 22<sup>nd</sup> July, 2016**

| Name of the crop          | Stage                           | Pest and disease     | Agro-meteorological advisories   |
|---------------------------|---------------------------------|----------------------|--|
| <b>Field Crops</b>        |                                 |                      |  |
| <b>Main kharif rice</b>   | Transplanting to Establishment  |                      | <ul style="list-style-type: none"> <li>➤ In replanting flooding fields, prepare rice nurseries in raised beds with RC- Maniphou 7.</li> <li>➤ During final leveling apply fertilizer @ 65kg Urea, 250 kg SSP and 33kg MOP as basal dose before transplanting seedlings.</li> <li>➤ Uproot 25-35 days old seedlings. About 1200-1300 bundles of seedlings (40cm diameter) are required for transplanting in one hectare area. Row planting of 2-3 seedlings per hill may be done at 25x10cm using beaded rope.</li> <li>➤ Maintain a thin film of water upto 7 days after transplanting. Release excess water if accumulated due to rain.</li> <li>➤ Thinning may be done in rice fields where plant population is high and replant in area where plants have died due to flood.</li> </ul> |
|                           |                                 | Thrips & Leaf folder | <ul style="list-style-type: none"> <li>➤ Spray Lambdacythrin 5% EC @ 15 ml/ 15 lit of water.</li> </ul>  |
| <b>Kharif maize</b>       | Cob formation to maturity       |                      | <ul style="list-style-type: none"> <li>➤ Weeding may be done on sunny days to control weeds/ insect-pest.</li> <li>➤ Maintain proper drainage system to avoid water logging.</li> <li>➤ Mature cobs may be harvested.</li> </ul>   |
| <b>Soybean</b>            | Sowing to vegetative            |                      | <ul style="list-style-type: none"> <li>➤ Maintain proper drainage system to avoid water logging</li> <li>➤ If not sown early, sowing must be done during July.</li> <li>➤ Keep the plot clean to avoid hairy caterpillars. Hand weeding should be done before 30-35 days after sowing.</li> <li>➤ For control of red hairy caterpillars in crops at vegetative stage, dust 5% Malathion @ 20 kg/ ha to control it or spray Dichlorovos 7.6 EC 0.05% (0.6ml/ lit of water)</li> </ul>   |
| <b>Storage (seed)</b>     |                                 |                      | <ul style="list-style-type: none"> <li>➤ Dry, clean and store the seeds in RC-seed bins after proper drying of seeds along with charcoal. Check for moisture content or weight of seeds. After proper drying, store grains in well ventilated godowns. Spray Malathion 1% in godowns.</li> </ul>   |
| <b>Horticulture Crops</b> |                                 |                      |  |
| <b>Turmeric/ Ginger</b>   | Vegetative to rhizome formation | Leaf spot disease    | <ul style="list-style-type: none"> <li>➤ Spray Redomil MZ-72 WP @ 2g/lit of water alternatively with Carbendazim @ 2g/ lit of water at 14 days interval.</li> </ul>  |
|                           |                                 | Rhizome rot          | <ul style="list-style-type: none"> <li>➤ To prevent rhizome rot spray Redomil MZ 72 W.P. @ 2 g/ lit of water at 15 days interval for 2-3 times.</li> </ul>   |
|                           |                                 |                      | <ul style="list-style-type: none"> <li>➤ For grown up plants spray Dithan M45 @ 2 to 2.5 ml/lit of water as prophylactic measures after the rain.</li> </ul>   |
| <b>Bhindi</b>             | Fruiting to harvesting          | Jassids              | <ul style="list-style-type: none"> <li>➤ Infested leaf curl upward in margin. If small young nymphs of different colours are found on the underside of the leaves, spray Monocrotophos 36EC @ 1 ml / lit of water after harvesting the mature fruits.</li> </ul>   |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



|   |                       |            |   |
|---|-----------------------|------------|---|
| <b>Turmeric/ Coriander</b>                                  | Intercropping         |            | <ul style="list-style-type: none"> <li>- Coriander variety Green Wonder or local one may be sown as intercrop plants in Turmeric field.</li> <li>- High density sowing at a spacing of 5 cm x 10 cm may also be done.</li> </ul>  |
| <b>Cowpea</b>   | Sowing                |            | <ul style="list-style-type: none"> <li>- Cowpea may be sown as an intercrop in the fruit orchard such as lemon, orange, passion fruit, etc.</li> <li>- Land preparation; sowing spacing: 45 – 60 cm from seed to seed and row to row; raised beds are preferred for sowing.</li> <li>- Recommended varieties: Yard long bean &amp; Pusa Barsati.</li> </ul> |
| <b>Cucurbits (Water-melon, pumpkin, bitter gourd, etc.)</b> | Vegetative/harvest    |            | <ul style="list-style-type: none"> <li>- Avoid water stagnation in the root zone, harvest the mature ones.</li> <li>- Avoid the fruits to touch the ground by staking or with the support of dried twigs.</li> </ul>  |
| <b>Passion Fruit</b>  | Flowering to fruiting | Fruit rot  | - Spray Metalxyl + Mancozeb @ 2 g/litr water at 7 days interval   |
|   |                       | Fruit fly  | - Apply poison baiting with Jaggery + fruit juice + Malathion (20:20:1) @ 40-50 baits/ha.   |
|   |                       | Brown Spot | - Remove the infected leaves and burn. Spray Zineb @ 2 mg/ltr water.  |
|   |                       | Termite    | - Apply Chloropyriphos 10%G @ 25 kg/ha into the soil.   |
|   |                       | Collar rot | - Drench the soil of collar region with 1% Bordeaux mixture   |

### Animal Sciences

| Name of the animal   | Growth stage                          | Disease/ infestation  | Agro-meteorological advisories   |
|--|---------------------------------------|-----------------------|--|
| Do not let animals to graze in fodder fields now, as at the time of sudden growth in fodder after long submergence presence of cyanide has been found. |                                       |                       |  |
| <b>Poultry (Chicken/ Turkey/ Duck)</b>   | All age groups                        | Care & management     | <ul style="list-style-type: none"> <li>➤ Do not give muddy water as there is chance of <i>colibacillosis</i> during the rainy season.</li> <li>➤ Use water sanitizer in drinking water/potassium permanganate (few grains)</li> <li>➤ Keep the litter dry &amp; add 2 kg lime powder for 100 sq. ft. area and mix it properly.</li> </ul>  |
|  |                                       | Coccidiosis           | ➤ Use Amprolium @ 1.5g/ltr of drinking water for 5-7 days and electrolyte can be associated.   |
|  |                                       | Deworming             | ➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose.   |
| <b>Sheep/ Goat</b>   | All age groups excepts the young ones | Care & management     | <ul style="list-style-type: none"> <li>➤ Keep the animals on the platform if possible to avoid <i>Pneumonia</i> due to moisture problem</li> <li>➤ Give multivitamins @ 15ml orally</li> <li>➤ Use quality disinfectants for disinfecting the surrounding of the sheds.</li> <li>➤ 21 days after shearing sheep, their bodies should be drenched with Butox @ 2ml/ lit water. Use medicated water for drenching.</li> </ul>  |
|  |                                       | De-worming            | ➤ De-worming of animals should be done using Abendazole/Levamisole @ 7.5 mg/kg b.wt. or Ivermectin @ 50mg/kg b. wl.  |
| <b>Pig</b>   | All age groups except the young ones  | Care and management   | <ul style="list-style-type: none"> <li>➤ Mineral mixture be added in feed @ 10-20 g/adult animal.</li> <li>➤ Treat drinking water with potassium permanganate/ sanitizer.</li> <li>➤ Provide ample ventilation in the shed/ dry bedding. Avoid dampness in sheds</li> </ul>  |
|  |                                       | Mites infestation     | ➤ Spray with Skin Heal Spray in sufficient quantity.   |
|  |                                       | Enteric disease       | ➤ Use Livocin @ 7.5 mg per kg b.wt. 3-5 days.  |
| <b>Cattle</b>  | All age groups excepts the young ones | Diarrhoea & Dysentery | ➤ Prompt treatment with Antibiotics Sulpha drugs.  |
|  |                                       | Deworming             | ➤ Give Piperazine liquid @ 10-15ml orally once only.   |
|  |                                       | B.Q./ H.S/FMD         | ➤ If the animals have not yet been vaccinated, give vaccine, now for Black Quarter, Haemorrhagic septicaemia, Foot & Mouth Disease, Enterotoxaemia etc.  |
|  |                                       | Endoparasites         | ➤ De-worm orally once using Nilzan-F @ 90ml/ 300 kg body weight.   |
|  |                                       | Care & management     | <ul style="list-style-type: none"> <li>➤ If the animals do not have access to green fodders, vitamin E injection/ supplements should be given.</li> <li>➤ Food supplements may be given @ 20-30 gm/animals.</li> <li>➤ Do not let animals graze in irrigated fodder fields/meadows.</li> <li>➤ After the birth of the self the new born must be fed with Colostrum within the first two hours.</li> <li>➤ Give Calmore Forte @ 100ml orally once daily.</li> </ul> |
|  |                                       | Milk Fever            | ➤ Protect from milk fever by giving daily a mixture of calcium and phosphorus @ 70-100ml.  |



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



| <b>Fishery:</b>                |                        |                   |   |
|--------------------------------|------------------------|-------------------|---|
| <b>Type of Farming</b>         | <b>Stage</b>           | <b>Management</b> | <b>Agro-metrological advisories</b>   |
| <b>Carp culture</b>            | Fish nurseries         | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.0-1.5m</li> <li>➤ Agri-lime should be applied in ponds</li> <li>➤ Ponds should be free from aquatic weed, predatory insects and fish.</li> <li>➤ Encircle the pond with net or bamboo mat as a preventive measure for flood.</li> </ul>  |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Fish feed should be provided @ 10-15 % body weight per day.</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ About 5 million feeding fries are stocked per 1 ha for pre-nursing pond</li> <li>➤ Duration is 25-45 days.</li> </ul>  |
|                                | Grow out               | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.5-2.0m</li> <li>➤ Regular liming should be done @ 30-35 kg/ha at 30 days interval</li> </ul>   |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Sampling of fish for growth, disease (if any) should be done by regular netting.</li> <li>➤ Partial harvesting of marketable size fishes are also recommended</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ Feed should be provided @ 3-5 % body weight per day</li> <li>➤ Feed can be fed at 2 times a day.</li> </ul>  |
|                                | Paddy cum fish culture | water             | <ul style="list-style-type: none"> <li>➤ Water depth of the field can be increase by pumping or draining if water is available to continue the culture.</li> <li>➤ 20-40% of the paddy plot can be made as 1.0-1.5m depth trenches.</li> <li>➤ 1000-3000 fish fingerlings can be stocked in 1 hectare rice field.</li> <li>➤ Feeding should be done @ 2% body weigh5t per day.</li> </ul> |
| <b>Integrated Fish Farming</b> | Pig                    |                   | <ul style="list-style-type: none"> <li>➤ About 30-40 two months old pigs may be kept for proper fertilization of the one ha pond. Pigs are feed on mash at an average of 1kg/day. Green grasses or animal folder is also provided. Grass with interlocked soil in the root system (sod) is provided once a week to avoid mineral deficiency.</li> </ul>                                   |
|                                | Duck                   |                   | <ul style="list-style-type: none"> <li>➤ 200-400 ducks of 2-3 months old are sufficient to adequately fertilize a 1 ha pond.</li> </ul>   |

(I. Meghachandra Singh)  
 Scientist i/c, IAAS



**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**

**MANIPUR BULLETIN****22<sup>nd</sup> July, 2016****Senapati**

IAAS, ICAR-RC Manipur Centre in association with India Meteorological Department, Regional Meteorological Centre, Guwahati and Northern Hemisphere Analysis Centre, New Delhi, Ministry of Earth Science, Govt. of India reports the weather forecasts for the next five days, i.e., from 23<sup>rd</sup> to 27<sup>th</sup> July, 2016 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (19<sup>th</sup> to 21<sup>st</sup> July, 2016)**

The sky remained mainly cloudy to overcast and rainfall of 6.4 mm was recorded during past three days. Maximum temperature range observed was 28.0 to 31.2 °C, range of minimum temperature observed was 22.1 to 22.4 °C, mean relative humidity observed in morning and afternoon were 87.33 % and 71.33 % respectively. The average wind speed range was 3.1 to 5.9 km/hr.

**Weather forecast for next five days of Senapati (23<sup>rd</sup> to 27<sup>th</sup> July, 2016)**

Likely to have light rain and heavy rain at isolated places. Sky will remain mainly cloudy to overcast, with maximum temp. 27 - 29 °C & minimum temp. 19 - 21 °C. Relative humidity may reach upto 99 % (max RH) & 96 % (min RH). The average wind speed may be 0 - 2 km/hr. Wind direction may be Westerly to North - Westerly during the next five days.

**Weather Outlook for subsequent 2 days from 27th July to 29th July 2016****Rainfall at many places very likely over northeastern states****Weather warning for next five days \*****Likely to have heavy rain at isolated places over Manipur on 22<sup>nd</sup> July, 2016**

| Name of the crop          | Stage                           | Pest and disease     | Agro-meteorological advisories   |
|---------------------------|---------------------------------|----------------------|--|
| <b>Field Crops</b>        |                                 |                      |  |
| <b>Main kharif rice</b>   | Transplanting to Establishment  |                      | <ul style="list-style-type: none"> <li>➤ In replanting flooding fields, prepare rice nurseries in raised beds with RC- Maniphou 7.</li> <li>➤ During final leveling apply fertilizer @ 65kg Urea, 250 kg SSP and 33kg MOP as basal dose before transplanting seedlings.</li> <li>➤ Uproot 25-35 days old seedlings. About 1200-1300 bundles of seedlings (40cm diameter) are required for transplanting in one hectare area. Row planting of 2-3 seedlings per hill may be done at 25x10cm using beaded rope.</li> <li>➤ Maintain a thin film of water upto 7 days after transplanting. Release excess water if accumulated due to rain.</li> <li>➤ Thinning may be done in rice fields where plant population is high and replant in area where plants have died due to flood.</li> </ul> |
|                           |                                 | Thrips & Leaf folder | <ul style="list-style-type: none"> <li>➤ Spray Lambdacythrin 5% EC @ 15 ml/ 15 lit of water.</li> </ul>  |
| <b>Kharif maize</b>       | Cob formation to maturity       |                      | <ul style="list-style-type: none"> <li>➤ Weeding may be done on sunny days to control weeds/ insect-pest.</li> <li>➤ Maintain proper drainage system to avoid water logging.</li> <li>➤ Mature cobs may be harvested.</li> </ul>   |
| <b>Soybean</b>            | Sowing to vegetative            |                      | <ul style="list-style-type: none"> <li>➤ Maintain proper drainage system to avoid water logging</li> <li>➤ If not sown early, sowing must be done during July.</li> <li>➤ Keep the plot clean to avoid hairy caterpillars. Hand weeding should be done before 30-35 days after sowing.</li> <li>➤ For control of red hairy caterpillars in crops at vegetative stage, dust 5% Malathion @ 20 kg/ ha to control it or spray Dichlorovos 7.6 EC 0.05% (0.6ml/ lit of water)</li> </ul>   |
| <b>Storage (seed)</b>     |                                 |                      | <ul style="list-style-type: none"> <li>➤ Dry, clean and store the seeds in RC-seed bins after proper drying of seeds along with charcoal. Check for moisture content or weight of seeds. After proper drying, store grains in well ventilated godowns. Spray Malathion 1% in godowns.</li> </ul>   |
| <b>Horticulture Crops</b> |                                 |                      |  |
| <b>Turmeric/ Ginger</b>   | Vegetative to rhizome formation | Leaf spot disease    | <ul style="list-style-type: none"> <li>➤ Spray Redomil MZ-72 WP @ 2g/lit of water alternatively with Carbendazim @ 2g/ lit of water at 14 days interval.</li> </ul>  |
|                           |                                 | Rhizome rot          | <ul style="list-style-type: none"> <li>➤ To prevent rhizome rot spray Redomil MZ 72 W.P. @ 2 g/ lit of water at 15 days interval for 2-3 times.</li> </ul>   |
|                           |                                 |                      | <ul style="list-style-type: none"> <li>➤ For grown up plants spray Dithan M45 @ 2 to 2.5 ml/lit of water as prophylactic measures after the rain.</li> </ul>   |
| <b>Bhindi</b>             | Fruiting to harvesting          | Jassids              | <ul style="list-style-type: none"> <li>➤ Infested leaf curl upward in margin. If small young nymphs of different colours are found on the underside of the leaves, spray Monocrotophos 36EC @ 1 ml / lit of water after harvesting the mature fruits.</li> </ul>   |

**ICAR Research Complex for N.E.H. Region**

Manipur Centre, Lamphelpat, Imphal - 795 004

**“Gramin Krishi Mausam Seva”**

|   |                       |            |   |
|---|-----------------------|------------|---|
| <b>Turmeric/ Coriander</b>                                  | Intercropping         |            | <ul style="list-style-type: none"> <li>- Coriander variety Green Wonder or local one may be sown as intercrop plants in Turmeric field.</li> <li>- High density sowing at a spacing of 5 cm x 10 cm may also be done.</li> </ul>  |
| <b>Cowpea</b>   | Sowing                |            | <ul style="list-style-type: none"> <li>- Cowpea may be sown as an intercrop in the fruit orchard such as lemon, orange, passion fruit, etc.</li> <li>- Land preparation; sowing spacing: 45 – 60 cm from seed to seed and row to row; raised beds are preferred for sowing.</li> <li>- Recommended varieties: Yard long bean &amp; Pusa Barsati.</li> </ul> |
| <b>Cucurbits (Water-melon, pumpkin, bitter gourd, etc.)</b> | Vegetative/harvest    |            | <ul style="list-style-type: none"> <li>- Avoid water stagnation in the root zone, harvest the mature ones.</li> <li>- Avoid the fruits to touch the ground by staking or with the support of dried twigs.</li> </ul>  |
| <b>Passion Fruit</b>  | Flowering to fruiting | Fruit rot  | - Spray Metalxyl + Mancozeb @ 2 g/litr water at 7 days interval   |
|   |                       | Fruit fly  | - Apply poison baiting with Jaggery + fruit juice + Malathion (20:20:1) @ 40-50 baits/ha.   |
|   |                       | Brown Spot | - Remove the infected leaves and burn. Spray Zineb @ 2 mg/ltr water.  |
|   |                       | Termite    | - Apply Chloropyriphos 10%G @ 25 kg/ha into the soil.   |
|   |                       | Collar rot | - Drench the soil of collar region with 1% Bordeaux mixture   |

**Animal Sciences**

| Name of the animal   | Growth stage                          | Disease/ infestation  | Agro-meteorological advisories   |
|--|---------------------------------------|---|--|
| Do not let animals to graze in fodder fields now, as at the time of sudden growth in fodder after long submergence presence of cyanide has been found. |                                       |   |  |
| <b>Poultry (Chicken/ Turkey/ Duck)</b>   | All age groups                        | Care & management   | <ul style="list-style-type: none"> <li>➤ Do not give muddy water as there is chance of <i>colibacillosis</i> during the rainy season.</li> <li>➤ Use water sanitizer in drinking water/potassium permanganate (few grains)</li> <li>➤ Keep the litter dry &amp; add 2 kg lime powder for 100 sq. ft. area and mix it properly.</li> </ul>  |
|  |                                       | Coccidiosis   | ➤ Use Amprolium @ 1.5g/ltr of drinking water for 5-7 days and electrolyte can be associated.   |
|  |                                       | Deworming   | ➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose.   |
| <b>Sheep/ Goat</b>   | All age groups excepts the young ones | Care & management   | <ul style="list-style-type: none"> <li>➤ Keep the animals on the platform if possible to avoid <i>Pneumonia</i> due to moisture problem</li> <li>➤ Give multivitamins @ 15ml orally</li> <li>➤ Use quality disinfectants for disinfecting the surrounding of the sheds.</li> <li>➤ 21 days after shearing sheep, their bodies should be drenched with Butox @ 2ml/ lit water. Use medicated water for drenching.</li> </ul>  |
|  |                                       | De-worming  | ➤ De-worming of animals should be done using Abendazole/Levamisole @ 7.5 mg/kg b.wt. or Ivermectin @ 50mg/kg b. wl.  |
| <b>Pig</b>   | All age groups except the young ones  | Care and management   | <ul style="list-style-type: none"> <li>➤ Mineral mixture be added in feed @ 10-20 g/adult animal.</li> <li>➤ Treat drinking water with potassium permanganate/ sanitizer.</li> <li>➤ Provide ample ventilation in the shed/ dry bedding. Avoid dampness in sheds</li> </ul>  |
|  |                                       | Mites infestation<br>Enteric disease<br>Diarrhoea & Dysentery | <ul style="list-style-type: none"> <li>➤ Spray with Skin Heal Spray in sufficient quantity.</li> <li>➤ Use Livocin @ 7.5 mg per kg b.wt. 3-5 days.</li> <li>➤ Prompt treatment with Antibiotics Sulpha drugs.</li> </ul>   |
|  |                                       | Deworming   | ➤ Give Piperazine liquid @ 10-15ml orally once only.   |
| <b>Cattle</b>  | All age groups excepts the young ones | B.Q./ H.S/FMD   | ➤ If the animals have not yet been vaccinated, give vaccine, now for Black Quarter, Haemorrhagic septicaemia, Foot & Mouth Disease, Enterotoxaemia etc.  |
|  |                                       | Endoparasites   | ➤ De-worm orally once using Nilzan-F @ 90ml/ 300 kg body weight.   |
|  |                                       | Care & management   | <ul style="list-style-type: none"> <li>➤ If the animals do not have access to green fodders, vitamin E injection/ supplements should be given.</li> <li>➤ Food supplements may be given @ 20-30 gm/animals.</li> <li>➤ Do not let animals graze in irrigated fodder fields/meadows.</li> <li>➤ After the birth of the self the new born must be fed with Colostrum within the first two hours.</li> <li>➤ Give Calmore Forte @ 100ml orally once daily.</li> </ul> |
|  |                                       | Milk Fever  | ➤ Protect from milk fever by giving daily a mixture of calcium and phosphorus @ 70-100ml.  |





**ICAR Research Complex for N.E.H. Region**  
**Manipur Centre, Lamphelpat, Imphal - 795 004**  
**“Gramin Krishi Mausam Seva”**



| <b>Fishery:</b>                |                        |                   |   |
|--------------------------------|------------------------|-------------------|---|
| <b>Type of Farming</b>         | <b>Stage</b>           | <b>Management</b> | <b>Agro-metrological advisories</b>   |
| <b>Carp culture</b>            | Fish nurseries         | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.0-1.5m</li> <li>➤ Agri-lime should be applied in ponds</li> <li>➤ Ponds should be free from aquatic weed, predatory insects and fish.</li> <li>➤ Encircle the pond with net or bamboo mat as a preventive measure for flood.</li> </ul>  |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Fish feed should be provided @ 10-15 % body weight per day.</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ About 5 million feeding fries are stocked per 1 ha for pre-nursing pond</li> <li>➤ Duration is 25-45 days.</li> </ul>  |
|                                | Grow out               | Pond and water    | <ul style="list-style-type: none"> <li>➤ Water depth should be maintain at 1.5-2.0m</li> <li>➤ Regular liming should be done @ 30-35 kg/ha at 30 days interval</li> </ul>   |
|                                |                        | Feed              | <ul style="list-style-type: none"> <li>➤ Sampling of fish for growth, disease (if any) should be done by regular netting.</li> <li>➤ Partial harvesting of marketable size fishes are also recommended</li> </ul>   |
|                                |                        | Fish              | <ul style="list-style-type: none"> <li>➤ Feed should be provided @ 3-5 % body weight per day</li> <li>➤ Feed can be fed at 2 times a day.</li> </ul>  |
|                                | Paddy cum fish culture | water             | <ul style="list-style-type: none"> <li>➤ Water depth of the field can be increase by pumping or draining if water is available to continue the culture.</li> <li>➤ 20-40% of the paddy plot can be made as 1.0-1.5m depth trenches.</li> <li>➤ 1000-3000 fish fingerlings can be stocked in 1 hectare rice field.</li> <li>➤ Feeding should be done @ 2% body weigh5t per day.</li> </ul> |
| <b>Integrated Fish Farming</b> | Pig                    |                   | <ul style="list-style-type: none"> <li>➤ About 30-40 two months old pigs may be kept for proper fertilization of the one ha pond. Pigs are feed on mash at an average of 1kg/day. Green grasses or animal folder is also provided. Grass with interlocked soil in the root system (sod) is provided once a week to avoid mineral deficiency.</li> </ul>                                   |
|                                | Duck                   |                   | <ul style="list-style-type: none"> <li>➤ 200-400 ducks of 2-3 months old are sufficient to adequately fertilize a 1 ha pond.</li> </ul>   |

(I. Meghachandra Singh)  
 Scientist i/c, IAAS