



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

**MANIPUR BULLETIN****4<sup>th</sup> July, 2017****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 5<sup>th</sup> to 9<sup>th</sup> July, 2017 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (30<sup>th</sup> June to 3<sup>rd</sup> July, 2017)**

Observed mainly cloudy to overcast sky and **6.3 mm** rainfall was recorded during past three days. Maximum temperature range of 28.8 to 31.2 °C and minimum temperature range of 22.3 to 24.6 °C with mean relative humidity 91.66 % max and 71.33 % min was recorded in the past three days.

**Weather forecast for next five days of Senapati (5<sup>th</sup> to 9<sup>th</sup> July, 2017)**

Likely to have heavy to very heavy rainfall at isolated places over Manipur upto Thursday and moderate rainfall thereafter with overcast sky and maximum temp. 28 - 33 °C & minimum temp. 23 - 24 °C. Relative humidity may reach up to 100 % (max RH) & 98 % (min RH). The average wind speed may be 2 km/hr.

<b>Field Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Rice</b>	Maturity to harvesting (Pre-kharif rice)		- Rice can be harvested after rains when 80% of panicles turn hard & golden yellow. - <b>Over maturity</b> should be avoided to reduce shattering losses.
	Nursery to land preparation for transplanting (kharif rice)		- Apply Carbofuran 3G @2kg/ha a week before uprooting the seedling. - Land preparation of main field may be started for transplanting rice seedling. Apply 65kg Urea, 250 kg SSP and 45 kg MOP per hectare at the time of final leveling. - After rains, uproot seedlings at 25 to 35 days after sowing depending on availability of water. About 1200 to 1300 bundles of seedlings (40cm diameter) may be required for transplanting one ha area. - Seedling of Main season rice can be raised upto first week of July and can be transplanted within 3 <sup>rd</sup> week of July.
	Direct seeding with drum seeder		- Treat seed treatment with Humicil @ 5ml/kg seed. - Puddle the field properly and level it. - Drain out water 24 hrs before sowing. - Use just pre-germinated seeds.
<b>Maize</b>	Vegetative		- At knee height stage, apply urea @ 43 kg Urea/ ha after rains.
<b>Soybean / Groundnut</b>	Vegetative		- Earthing-up and thinning may be done at 30 to 40 days after sowing of crop after rain. - Avoid leaf eating caterpillars/ insects at least upto 60 days after sowing.
<b>Blackgram &amp; Rice bean</b>	Vegetative		- Avoid sowing in water logged fields. Also, avoid hairy caterpillars.
<b>Seeds storage</b>	Post harvest management		- For seed purpose dry, clean and store the seeds in <b>RC-seed bins</b> after proper drying of seeds along with charcoal at 80:20. Check for moisture content or weight of charcoal and dry if required. - For grains, store grains in well ventilated godowns after drying proper. Spray Malathion 1% on the walls of stores.
<b>Horticulture Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Ginger/ Turmeric</b>	Vegetative	Leaf Spot	To prevent Leaf Spot disease, apply Bordeaux mixture (5:5:50) after 4 – 5 weeks of sowing or Captan @ 1.5 g/l of water after rains.
			After rains, weeding and inter-culture operation may be done and apply 100 Kg Urea and 300 Kg SSP per hectare at 2-3 months after planting.
<b>Passion fruit</b>	Fruiting		Spray Malathion @ 5 ml/lit of water to control fruit fly. Harvest the fruits at least 15 days after spraying. Avoid water stagnation.
<b>Orange/Lime/ Lemon/ Litchi</b>	Planting	Lichen incidence	- If lichen is observed, then scrap out the affected area and paint with Bordeaux paste or Benlate after the wet spell.
			Apply 650g Urea, 1250g SSP and 450g MOP per tree in circular trench around the trunk.
<b>Tree bean</b>	Transplanting/ Fertilizer		One year or more than a year old quality seedling may be transplanted in the pit. Recommended spacing is 10x10 m from plant to plant and row to row At the time of planting apply 5 kg FYM + 30 gm lime+30 gm linden 5% dust + 5

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

Manipur Centre, Lamphelpat, Imphal - 795 004

**“Gramin Krishi Mausam Seva”**

	application		ml Chlorpyrifos 20 EC + 1.5 g Mancozeb + Carbendazim per pit. For 7 yrs and above and for bearing plants apply 7 kg FYM, 120 Kg urea, 300 gm SSP, 80 gm MOP, 1 Kg lime should be applied.
--	-------------	--	--

**Animal Sciences****\* Provide clean drinking water for birds and animals.**

- Apply Himax ointment twice daily on animal body to prevent bite of fly and mosquitoes.

Name of bird/ animal	Stage	Disease and Management	Agro-meteorological advisories
<b>Poultry (Chicken/ Turkey/ Duck)</b>	All age groups	Fowl Pox	Vaccinate against fowl pox.
		Coccidiosis	- Give Amprolium Powder @2g/lit of drinking water for 5 to 7 days.
		Deworming	➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose at regular interval of 3 weeks.
			- Bleaching powder may be spread near farm premises. - Avoid fungal infested feed. - Use dry litter material in the shed, if moist apply lime powder @ 1kg per 100 ft <sup>2</sup> area.
<b>Sheep/ Goat</b>	All age groups	Vaccination	- Sheep should be vaccinated against B.Q./ H.S.
<b>Pig</b>	All age groups except the young ones	De-worming	- De-worming of animals should be done using Albendazole @7.5 mg/kg b.wt.
		Vaccination	- Vaccinate against FMD.
		Management	- Provide adequate amount of wholesome water (drinking). - Essential body salts may be provided.
<b>Cattle</b>	All age groups excepts the young ones	B.Q. & H.S.	Vaccinate against B.Q., F.M.D. & H.S.
		Deworming	Use Albomac suspension@60-90ml for 300kg body weight or 20-30ml for 100 kg body weight.
		Slush & Flood Management	Provide wholesome water. Adequate arrangements for the animals to be kept at the safety place be made. Avoid grazing at the periphery of flood.
		Milk fever in Milch cow	70-100ml of a mixture of Ca <sup>+</sup> and Phosphorus daily @ 5-7days.

**Fishery:**

\* Encircle pond with happa net or raise the pond dyke height to avoid escape of fishes.

Type of Farming	Stage	Management	Agro-metrological advisories
Carp culture	Nurseries/ grow-out	Pond and water	Maintain minimum depth of 1.5 m. Apply Lime/ Green AQ for maintaining good quality water.
		Feed	Provide 2-3 times @ 5-10% body weight per day. Provide good feed having 30% crude protein fortified with vitamins and mineral.
	Brooder	Pond water and feed	Maintain minimum depth of 2.0-2.2 m. Provide feed @ 3-5 % body weight per day.
	Breeding	Hormone	Fish hormones like ovaprim, ovatide or Wova-FH can be injected in both the brooders @ <b>0.5 ml/kg</b> of fish for catla, rohu and mirgal; 0.5-0.7 ml/kg for grass carp.
	Seed production		Maintain good quality water having p <sup>H</sup> 7-8, Dissolved Oxygen: 5-8ppm; CO <sub>2</sub> : Nil – 0.3ppm and alkalinity 70-110 ppm.
	Hatcheries	water	Hatching can be done in traditional hapas having outer & inner hapas or circular hatcheries. A mild current with fine shower is needed for circular hatcheries. Feed should not be given for 3 days.

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



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

**MANIPUR BULLETIN****4<sup>th</sup> July, 2017****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 5<sup>th</sup> to 9<sup>th</sup> July, 2017 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (30<sup>th</sup> June to 3<sup>rd</sup> July, 2017)**

Observed mainly cloudy to overcast sky and **6.3 mm** rainfall was recorded during past three days. Maximum temperature range of 28.8 to 31.2 °C and minimum temperature range of 22.3 to 24.6 °C with mean relative humidity 91.66 % max and 71.33 % min was recorded in the past three days.

**Weather forecast for next five days of Tamenglong (5<sup>th</sup> to 9<sup>th</sup> July, 2017)**

Likely to have heavy to very heavy rainfall at isolated places over Manipur upto Thursday and moderate rainfall thereafter with overcast sky and maximum temp. 29 - 33 °C & minimum temp. 23 °C. Relative humidity may reach up to 100 % (max RH) & 99 % (min RH). The average wind speed may be 2 km/hr.

<b>Field Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Rice</b>	Maturity to harvesting (Pre-kharif rice)		- Rice can be harvested after rains when 80% of panicles turn hard & golden yellow. - <b>Over maturity</b> should be avoided to reduce shattering losses.
	Nursery to land preparation for transplanting (kharif rice)		- Apply Carbofuran 3G @2kg/ha a week before uprooting the seedling. - Land preparation of main field may be started for transplanting rice seedling. Apply 65kg Urea, 250 kg SSP and 45 kg MOP per hectare at the time of final leveling. - After rains, uproot seedlings at 25 to 35 days after sowing depending on availability of water. About 1200 to 1300 bundles of seedlings (40cm diameter) may be required for transplanting one ha area. - Seedling of Main season rice can be raised upto first week of July and can be transplanted within 3 <sup>rd</sup> week of July.
	Direct seeding with drum seeder		- Treat seed treatment with Humicil @ 5ml/kg seed. - Puddle the field properly and level it. - Drain out water 24 hrs before sowing. - Use just pre-germinated seeds.
<b>Maize</b>	Vegetative		- At knee height stage, apply urea @ 43 kg Urea/ ha after rains.
<b>Soybean / Groundnut</b>	Vegetative		- Earthing-up and thinning may be done at 30 to 40 days after sowing of crop after rain. - Avoid leaf eating caterpillars/ insects at least upto 60 days after sowing.
<b>Blackgram &amp; Rice bean</b>	Vegetative		- Avoid sowing in water logged fields. Also, avoid hairy caterpillars.
<b>Seeds storage</b>	Post harvest management		- For seed purpose dry, clean and store the seeds in <b>RC-seed bins</b> after proper drying of seeds along with charcoal at 80:20. Check for moisture content or weight of charcoal and dry if required. - For grains, store grains in well ventilated godowns after drying proper. Spray Malathion 1% on the walls of stores.
<b>Horticulture Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Ginger/ Turmeric</b>	Vegetative	Leaf Spot	To prevent Leaf Spot disease, apply Bordeaux mixture (5:5:50) after 4 – 5 weeks of sowing or Captan @ 1.5 g/l of water after rains.
			After rains, weeding and inter-culture operation may be done and apply 100 Kg Urea and 300 Kg SSP per hectare at 2-3 months after planting.
<b>Passion fruit</b>	Fruiting		Spray Malathion @ 5 ml/lit of water to control fruit fly. Harvest the fruits at least 15 days after spraying. Avoid water stagnation.
<b>Orange/Lime/ Lemon/ Litchi</b>	Planting	Lichen incidence	- If lichen is observed, then scrap out the affected area and paint with Bordeaux paste or Benlate after the wet spell.
			Apply 650g Urea, 1250g SSP and 450g MOP per tree in circular trench around the trunk.
<b>Tree bean</b>	Transplanting/ Fertilizer		One year or more than a year old quality seedling may be transplanted in the pit. Recommended spacing is 10x10 m from plant to plant and row to row At the time of planting apply 5 kg FYM + 30 gm lime+30 gm linden 5% dust + 5

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

Manipur Centre, Lamphelpat, Imphal - 795 004

**“Gramin Krishi Mausam Seva”**

	application		ml Chlorpyrifos 20 EC + 1.5 g Mancozeb + Carbendazim per pit. For 7 yrs and above and for bearing plants apply 7 kg FYM, 120 Kg urea, 300 gm SSP, 80 gm MOP, 1 Kg lime should be applied.
--	-------------	--	--

**Animal Sciences****\* Provide clean drinking water for birds and animals.**

- Apply Himax ointment twice daily on animal body to prevent bite of fly and mosquitoes.

Name of bird/ animal	Stage	Disease and Management	Agro-meteorological advisories
<b>Poultry (Chicken/ Turkey/ Duck)</b>	All age groups	Fowl Pox	Vaccinate against fowl pox.
		Coccidiosis	- Give Amprolium Powder @2g/lit of drinking water for 5 to 7 days.
		Deworming	➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose at regular interval of 3 weeks.
			- Bleaching powder may be spread near farm premises. - Avoid fungal infested feed. - Use dry litter material in the shed, if moist apply lime powder @ 1kg per 100 ft <sup>2</sup> area.
<b>Sheep/ Goat</b>	All age groups	Vaccination	- Sheep should be vaccinated against B.Q./ H.S.
<b>Pig</b>	All age groups except the young ones	De-worming	- De-worming of animals should be done using Albendazole @7.5 mg/kg b.wt.
		Vaccination	- Vaccinate against FMD.
		Management	- Provide adequate amount of wholesome water (drinking). - Essential body salts may be provided.
<b>Cattle</b>	All age groups excepts the young ones	B.Q. & H.S.	Vaccinate against B.Q., F.M.D. & H.S.
		Deworming	Use Albomac suspension@60-90ml for 300kg body weight or 20-30ml for 100 kg body weight.
		Slush & Flood Management	Provide wholesome water. Adequate arrangements for the animals to be kept at the safety place be made. Avoid grazing at the periphery of flood.
		Milk fever in Milch cow	70-100ml of a mixture of Ca <sup>+</sup> and Phosphorus daily @ 5-7days.

**Fishery:**

\* Encircle pond with happa net or raise the pond dyke height to avoid escape of fishes.

Type of Farming	Stage	Management	Agro-metrological advisories
Carp culture	Nurseries/ grow-out	Pond and water	Maintain minimum depth of 1.5 m. Apply Lime/ Green AQ for maintaining good quality water.
		Feed	Provide 2-3 times @ 5-10% body weight per day. Provide good feed having 30% crude protein fortified with vitamins and mineral.
	Brooder	Pond water and feed	Maintain minimum depth of 2.0-2.2 m. Provide feed @ 3-5 % body weight per day.
	Breeding	Hormone	Fish hormones like ovaprim, ovatide or Wova-FH can be injected in both the brooders @ <b>0.5 ml/kg</b> of fish for catla, rohu and mirgal; 0.5-0.7 ml/kg for grass carp.
	Seed production		Maintain good quality water having p <sup>H</sup> 7-8, Dissolved Oxygen: 5-8ppm; CO <sub>2</sub> : Nil – 0.3ppm and alkalinity 70-110 ppm.
	Hatcheries	water	Hatching can be done in traditional hapas having outer & inner hapas or circular hatcheries. A mild current with fine shower is needed for circular hatcheries. Feed should not be given for 3 days.

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



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

**MANIPUR BULLETIN****4<sup>th</sup> July, 2017****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 5<sup>th</sup> to 9<sup>th</sup> July, 2017 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (30<sup>th</sup> June to 3<sup>rd</sup> July, 2017)**

Observed mainly cloudy to overcast sky and **6.3 mm** rainfall was recorded during past three days. Maximum temperature range of 28.8 to 31.2 °C and minimum temperature range of 22.3 to 24.6 °C with mean relative humidity 91.66 % max and 71.33 % min was recorded in the past three days.

**Weather forecast for next five days of Thoubal (5<sup>th</sup> to 9<sup>th</sup> July, 2017)**

Likely to have heavy to very heavy rainfall at isolated places over Manipur upto Thursday and moderate rainfall thereafter with overcast sky and maximum temp. 27 - 32 °C & minimum temp. 24 - 25 °C. Relative humidity may reach up to 100 % (max RH) & 97 % (min RH). The average wind speed may be 0-2 km/hr.

<b>Field Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Rice</b>	Maturity to harvesting (Pre-kharif rice)		- Rice can be harvested after rains when 80% of panicles turn hard & golden yellow. - <b>Over maturity</b> should be avoided to reduce shattering losses.
	Nursery to land preparation for transplanting (kharif rice)		- Apply Carbofuran 3G @2kg/ha a week before uprooting the seedling. - Land preparation of main field may be started for transplanting rice seedling. Apply 65kg Urea, 250 kg SSP and 45 kg MOP per hectare at the time of final leveling. - After rains, uproot seedlings at 25 to 35 days after sowing depending on availability of water. About 1200 to 1300 bundles of seedlings (40cm diameter) may be required for transplanting one ha area. - Seedling of Main season rice can be raised upto first week of July and can be transplanted within 3 <sup>rd</sup> week of July.
	Direct seeding with drum seeder		- Treat seed treatment with Humicil @ 5ml/kg seed. - Puddle the field properly and level it. - Drain out water 24 hrs before sowing. - Use just pre-germinated seeds.
<b>Maize</b>	Vegetative		- At knee height stage, apply urea @ 43 kg Urea/ ha after rains.
<b>Soybean / Groundnut</b>	Vegetative		- Earthing-up and thinning may be done at 30 to 40 days after sowing of crop after rain. - Avoid leaf eating caterpillars/ insects at least upto 60 days after sowing.
<b>Blackgram &amp; Rice bean</b>	Vegetative		- Avoid sowing in water logged fields. Also, avoid hairy caterpillars.
<b>Seeds storage</b>	Post harvest management		- For seed purpose dry, clean and store the seeds in <b>RC-seed bins</b> after proper drying of seeds along with charcoal at 80:20. Check for moisture content or weight of charcoal and dry if required. - For grains, store grains in well ventilated godowns after drying proper. Spray Malathion 1% on the walls of stores.
<b>Horticulture Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Ginger/ Turmeric</b>	Vegetative	Leaf Spot	To prevent Leaf Spot disease, apply Bordeaux mixture (5:5:50) after 4 – 5 weeks of sowing or Captan @ 1.5 g/l of water after rains.
			After rains, weeding and inter-culture operation may be done and apply 100 Kg Urea and 300 Kg SSP per hectare at 2-3 months after planting.
<b>Passion fruit</b>	Fruiting		Spray Malathion @ 5 ml/lit of water to control fruit fly. Harvest the fruits at least 15 days after spraying. Avoid water stagnation.
<b>Orange/Lime/ Lemon/ Litchi</b>	Planting	Lichen incidence	- If lichen is observed, then scrap out the affected area and paint with Bordeaux paste or Benlate after the wet spell.
			Apply 650g Urea, 1250g SSP and 450g MOP per tree in circular trench around the trunk.
<b>Tree bean</b>	Transplanting/ Fertilizer		One year or more than a year old quality seedling may be transplanted in the pit. Recommended spacing is 10x10 m from plant to plant and row to row At the time of planting apply 5 kg FYM + 30 gm lime+30 gm linden 5% dust + 5





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



	application		ml Chlorpyrifos 20 EC + 1.5 g Mancozeb + Carbendazim per pit. For 7 yrs and above and for bearing plants apply 7 kg FYM, 120 Kg urea, 300 gm SSP, 80 gm MOP, 1 Kg lime should be applied.
--	-------------	--	--

### Animal Sciences

**\* Provide clean drinking water for birds and animals.**

- Apply Himax ointment twice daily on animal body to prevent bite of fly and mosquitoes.

Name of bird/ animal	Stage	Disease and Management	Agro-meteorological advisories
<b>Poultry (Chicken/ Turkey/ Duck)</b>	All age groups	Fowl Pox	Vaccinate against fowl pox.
		Coccidiosis	- Give Amprolium Powder @2g/lit of drinking water for 5 to 7 days.
		Deworming	➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose at regular interval of 3 weeks.
			- Bleaching powder may be spread near farm premises. - Avoid fungal infested feed. - Use dry litter material in the shed, if moist apply lime powder @ 1kg per 100 ft <sup>2</sup> area.
<b>Sheep/ Goat</b>	All age groups	Vaccination	- Sheep should be vaccinated against B.Q./ H.S.
<b>Pig</b>	All age groups except the young ones	De-worming	- De-worming of animals should be done using Albendazole @7.5 mg/kg b.wt.
		Vaccination	- Vaccinate against FMD.
		Management	- Provide adequate amount of wholesome water (drinking). - Essential body salts may be provided.
<b>Cattle</b>	All age groups excepts the young ones	B.Q. & H.S.	Vaccinate against B.Q., F.M.D. & H.S.
		Deworming	Use Albomac suspension@60-90ml for 300kg body weight or 20-30ml for 100 kg body weight.
		Slush & Flood Management	Provide wholesome water. Adequate arrangements for the animals to be kept at the safety place be made. Avoid grazing at the periphery of flood.
		Milk fever in Milch cow	70-100ml of a mixture of Ca <sup>+</sup> and Phosphorus daily @ 5-7days.

### Fishery:

\* Encircle pond with happa net or raise the pond dyke height to avoid escape of fishes.

Type of Farming	Stage	Management	Agro-metrological advisories
Carp culture	Nurseries/ grow-out	Pond and water	Maintain minimum depth of 1.5 m. Apply Lime/ Green AQ for maintaining good quality water.
		Feed	Provide 2-3 times @ 5-10% body weight per day. Provide good feed having 30% crude protein fortified with vitamins and mineral.
	Brooder	Pond water and feed	Maintain minimum depth of 2.0-2.2 m. Provide feed @ 3-5 % body weight per day.
	Breeding	Hormone	Fish hormones like ovaprim, ovatide or Wova-FH can be injected in both the brooders @ <b>0.5 ml/kg</b> of fish for catla, rohu and mirgal; 0.5-0.7 ml/kg for grass carp.
	Seed production		Maintain good quality water having p <sup>H</sup> 7-8, Dissolved Oxygen: 5-8ppm; CO <sub>2</sub> : Nil – 0.3ppm and alkalinity 70-110 ppm.
	Hatcheries	water	Hatching can be done in traditional hapas having outer & inner hapas or circular hatcheries. A mild current with fine shower is needed for circular hatcheries. Feed should not be given for 3 days.

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



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

**MANIPUR BULLETIN****4<sup>th</sup> July, 2017****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 5<sup>th</sup> to 9<sup>th</sup> July, 2017 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (30<sup>th</sup> June to 3<sup>rd</sup> July, 2017)**

Observed mainly cloudy to overcast sky and **6.3 mm** rainfall was recorded during past three days. Maximum temperature range of 28.8 to 31.2 °C and minimum temperature range of 22.3 to 24.6 °C with mean relative humidity 91.66 % max and 71.33 % min was recorded in the past three days.

**Weather forecast for next five days of Ukhrul (5<sup>th</sup> to 9<sup>th</sup> July, 2017)**

Likely to have heavy to very heavy rainfall at isolated places over Manipur upto Thursday and moderate rainfall thereafter with overcast sky and maximum temp. 28 - 29 °C & minimum temp. 21 - 22 °C. Relative humidity may reach up to 100 % (max RH) & 99 % (min RH). The average wind speed may be 2 km/hr.

<b>Field Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Rice</b>	Maturity to harvesting (Pre-kharif rice)		<ul style="list-style-type: none"> <li>- Rice can be harvested after rains when 80% of panicles turn hard &amp; golden yellow.</li> <li>- <b>Over maturity</b> should be avoided to reduce shattering losses.</li> </ul>
	Nursery to land preparation for transplanting (kharif rice)		<ul style="list-style-type: none"> <li>- Apply Carbofuran 3G @2kg/ha a week before uprooting the seedling.</li> <li>- Land preparation of main field may be started for transplanting rice seedling. Apply 65kg Urea, 250 kg SSP and 45 kg MOP per hectare at the time of final leveling.</li> <li>- After rains, uproot seedlings at 25 to 35 days after sowing depending on availability of water. About 1200 to 1300 bundles of seedlings (40cm diameter) may be required for transplanting one ha area.</li> <li>- Seedling of Main season rice can be raised upto first week of July and can be transplanted within 3<sup>rd</sup> week of July.</li> </ul>
	Direct seeding with drum seeder		<ul style="list-style-type: none"> <li>- Treat seed treatment with Humicil @ 5ml/kg seed.</li> <li>- Puddle the field properly and level it.</li> <li>- Drain out water 24 hrs before sowing.</li> <li>- Use just pre-germinated seeds.</li> </ul>
<b>Maize</b>	Vegetative		<ul style="list-style-type: none"> <li>- At knee height stage, apply urea @ 43 kg Urea/ ha after rains.</li> </ul>
<b>Soybean / Groundnut</b>	Vegetative		<ul style="list-style-type: none"> <li>- Earthing-up and thinning may be done at 30 to 40 days after sowing of crop after rain.</li> <li>- Avoid leaf eating caterpillars/ insects at least upto 60 days after sowing.</li> </ul>
<b>Blackgram &amp; Rice bean</b>	Vegetative		<ul style="list-style-type: none"> <li>- Avoid sowing in water logged fields. Also, avoid hairy caterpillars.</li> </ul>
<b>Seeds storage</b>	Post harvest management		<ul style="list-style-type: none"> <li>- For seed purpose dry, clean and store the seeds in <b>RC-seed bins</b> after proper drying of seeds along with charcoal at 80:20. Check for moisture content or weight of charcoal and dry if required.</li> <li>- For grains, store grains in well ventilated godowns after drying proper. Spray Malathion 1% on the walls of stores.</li> </ul>
<b>Horticulture Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Ginger/ Turmeric</b>	Vegetative	Leaf Spot	To prevent Leaf Spot disease, apply Bordeaux mixture (5:5:50) after 4 – 5 weeks of sowing or Captan @ 1.5 g/l of water after rains.
			After rains, weeding and inter-culture operation may be done and apply 100 Kg Urea and 300 Kg SSP per hectare at 2-3 months after planting.
<b>Passion fruit</b>	Fruiting		Spray Malathion @ 5 ml/lit of water to control fruit fly. Harvest the fruits at least 15 days after spraying. Avoid water stagnation.
<b>Orange/Lime/ Lemon/ Litchi</b>	Planting	Lichen incidence	<ul style="list-style-type: none"> <li>- If lichen is observed, then scrap out the affected area and paint with Bordeaux paste or Benlate after the wet spell.</li> </ul>
			Apply 650g Urea, 1250g SSP and 450g MOP per tree in circular trench around the trunk.
<b>Tree bean</b>	Transplanting/ Fertilizer		One year or more than a year old quality seedling may be transplanted in the pit. Recommended spacing is 10x10 m from plant to plant and row to row At the time of planting apply 5 kg FYM + 30 gm lime+30 gm linden 5% dust + 5

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

Manipur Centre, Lamphelpat, Imphal - 795 004

**“Gramin Krishi Mausam Seva”**

	application		ml Chlorpyrifos 20 EC + 1.5 g Mancozeb + Carbendazim per pit. For 7 yrs and above and for bearing plants apply 7 kg FYM, 120 Kg urea, 300 gm SSP, 80 gm MOP, 1 Kg lime should be applied.
--	-------------	--	--

**Animal Sciences****\* Provide clean drinking water for birds and animals.**

- Apply Himax ointment twice daily on animal body to prevent bite of fly and mosquitoes.

Name of bird/ animal	Stage	Disease and Management	Agro-meteorological advisories
<b>Poultry (Chicken/ Turkey/ Duck)</b>	All age groups	Fowl Pox	Vaccinate against fowl pox.
		Coccidiosis	- Give Amprolium Powder @2g/lit of drinking water for 5 to 7 days.
		Deworming	➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose at regular interval of 3 weeks.
			- Bleaching powder may be spread near farm premises. - Avoid fungal infested feed. - Use dry litter material in the shed, if moist apply lime powder @ 1kg per 100 ft <sup>2</sup> area.
<b>Sheep/ Goat</b>	All age groups	Vaccination	- Sheep should be vaccinated against B.Q./ H.S.
<b>Pig</b>	All age groups except the young ones	De-worming	- De-worming of animals should be done using Albendazole @7.5 mg/kg b.wt.
		Vaccination	- Vaccinate against FMD.
		Management	- Provide adequate amount of wholesome water (drinking). - Essential body salts may be provided.
<b>Cattle</b>	All age groups excepts the young ones	B.Q. & H.S.	Vaccinate against B.Q., F.M.D. & H.S.
		Deworming	Use Albomac suspension@60-90ml for 300kg body weight or 20-30ml for 100 kg body weight.
		Slush & Flood Management	Provide wholesome water. Adequate arrangements for the animals to be kept at the safety place be made. Avoid grazing at the periphery of flood.
		Milk fever in Milch cow	70-100ml of a mixture of Ca <sup>+</sup> and Phosphorus daily @ 5-7days.

**Fishery:**

\* Encircle pond with happa net or raise the pond dyke height to avoid escape of fishes.

Type of Farming	Stage	Management	Agro-metrological advisories
Carp culture	Nurseries/ grow-out	Pond and water	Maintain minimum depth of 1.5 m. Apply Lime/ Green AQ for maintaining good quality water.
		Feed	Provide 2-3 times @ 5-10% body weight per day. Provide good feed having 30% crude protein fortified with vitamins and mineral.
	Brooder	Pond water and feed	Maintain minimum depth of 2.0-2.2 m. Provide feed @ 3-5 % body weight per day.
	Breeding	Hormone	Fish hormones like ovaprim, ovatide or Wova-FH can be injected in both the brooders @ <b>0.5 ml/kg</b> of fish for catla, rohu and mirgal; 0.5-0.7 ml/kg for grass carp.
	Seed production		Maintain good quality water having p <sup>H</sup> 7-8, Dissolved Oxygen: 5-8ppm; CO <sub>2</sub> : Nil – 0.3ppm and alkalinity 70-110 ppm.
	Hatcheries	water	Hatching can be done in traditional hapas having outer & inner hapas or circular hatcheries. A mild current with fine shower is needed for circular hatcheries. Feed should not be given for 3 days.

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





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

**MANIPUR BULLETIN****4<sup>th</sup> July, 2017****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 5<sup>th</sup> to 9<sup>th</sup> July, 2017 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (30<sup>th</sup> June to 3<sup>rd</sup> July, 2017)**

Observed mainly cloudy to overcast sky and **6.3 mm** rainfall was recorded during past three days. Maximum temperature range of 28.8 to 31.2 °C and minimum temperature range of 22.3 to 24.6 °C with mean relative humidity 91.66 % max and 71.33 % min was recorded in the past three days.

**Weather forecast for next five days of Imphal East (5<sup>th</sup> to 9<sup>th</sup> July, 2017)**

Likely to have heavy to very heavy rainfall at isolated places over Manipur upto Thursday and moderate rainfall thereafter with overcast sky and maximum temp. 28 - 33 °C & minimum temp. 22 - 24 °C. Relative humidity may reach up to 100 % (max RH) & 97 % (min RH). The average wind speed may be 2 km/hr.

<b>Field Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Rice</b>	Maturity to harvesting (Pre-kharif rice)		- Rice can be harvested after rains when 80% of panicles turn hard & golden yellow. - <b>Over maturity</b> should be avoided to reduce shattering losses.
	Nursery to land preparation for transplanting (kharif rice)		- Apply Carbofuran 3G @2kg/ha a week before uprooting the seedling. - Land preparation of main field may be started for transplanting rice seedling. Apply 65kg Urea, 250 kg SSP and 45 kg MOP per hectare at the time of final leveling. - After rains, uproot seedlings at 25 to 35 days after sowing depending on availability of water. About 1200 to 1300 bundles of seedlings (40cm diameter) may be required for transplanting one ha area. - Seedling of Main season rice can be raised upto first week of July and can be transplanted within 3 <sup>rd</sup> week of July.
	Direct seeding with drum seeder		- Treat seed treatment with Humicil @ 5ml/kg seed. - Puddle the field properly and level it. - Drain out water 24 hrs before sowing. - Use just pre-germinated seeds.
<b>Maize</b>	Vegetative		- At knee height stage, apply urea @ 43 kg Urea/ ha after rains.
<b>Soybean / Groundnut</b>	Vegetative		- Earthing-up and thinning may be done at 30 to 40 days after sowing of crop after rain. - Avoid leaf eating caterpillars/ insects at least upto 60 days after sowing.
<b>Blackgram &amp; Rice bean</b>	Vegetative		- Avoid sowing in water logged fields. Also, avoid hairy caterpillars.
<b>Seeds storage</b>	Post harvest management		- For seed purpose dry, clean and store the seeds in <b>RC-seed bins</b> after proper drying of seeds along with charcoal at 80:20. Check for moisture content or weight of charcoal and dry if required. - For grains, store grains in well ventilated godowns after drying proper. Spray Malathion 1% on the walls of stores.
<b>Horticulture Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Ginger/ Turmeric</b>	Vegetative	Leaf Spot	To prevent Leaf Spot disease, apply Bordeaux mixture (5:5:50) after 4 – 5 weeks of sowing or Captan @ 1.5 g/l of water after rains.
			After rains, weeding and inter-culture operation may be done and apply 100 Kg Urea and 300 Kg SSP per hectare at 2-3 months after planting.
<b>Passion fruit</b>	Fruiting		Spray Malathion @ 5 ml/lit of water to control fruit fly. Harvest the fruits at least 15 days after spraying. Avoid water stagnation.
<b>Orange/Lime/ Lemon/ Litchi</b>	Planting	Lichen incidence	- If lichen is observed, then scrap out the affected area and paint with Bordeaux paste or Benlate after the wet spell.
			Apply 650g Urea, 1250g SSP and 450g MOP per tree in circular trench around the trunk.
<b>Tree bean</b>	Transplanting/ Fertilizer		One year or more than a year old quality seedling may be transplanted in the pit. Recommended spacing is 10x10 m from plant to plant and row to row At the time of planting apply 5 kg FYM + 30 gm lime+30 gm linden 5% dust + 5

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

Manipur Centre, Lamphelpat, Imphal - 795 004

**“Gramin Krishi Mausam Seva”**

	application		ml Chlorpyrifos 20 EC + 1.5 g Mancozeb + Carbendazim per pit. For 7 yrs and above and for bearing plants apply 7 kg FYM, 120 Kg urea, 300 gm SSP, 80 gm MOP, 1 Kg lime should be applied.
--	-------------	--	--

**Animal Sciences****\* Provide clean drinking water for birds and animals.**

- Apply Himax ointment twice daily on animal body to prevent bite of fly and mosquitoes.

Name of bird/ animal	Stage	Disease and Management	Agro-meteorological advisories
<b>Poultry (Chicken/ Turkey/ Duck)</b>	All age groups	Fowl Pox	Vaccinate against fowl pox.
		Coccidiosis	- Give Amprolium Powder @2g/lit of drinking water for 5 to 7 days.
		Deworming	➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose at regular interval of 3 weeks.
			- Bleaching powder may be spread near farm premises. - Avoid fungal infested feed. - Use dry litter material in the shed, if moist apply lime powder @ 1kg per 100 ft <sup>2</sup> area.
<b>Sheep/ Goat</b>	All age groups	Vaccination	- Sheep should be vaccinated against B.Q./ H.S.
<b>Pig</b>	All age groups except the young ones	De-worming	- De-worming of animals should be done using Albendazole @7.5 mg/kg b.wt.
		Vaccination	- Vaccinate against FMD.
		Management	- Provide adequate amount of wholesome water (drinking). - Essential body salts may be provided.
<b>Cattle</b>	All age groups excepts the young ones	B.Q. & H.S.	Vaccinate against B.Q., F.M.D. & H.S.
		Deworming	Use Albomac suspension@60-90ml for 300kg body weight or 20-30ml for 100 kg body weight.
		Slush & Flood Management	Provide wholesome water. Adequate arrangements for the animals to be kept at the safety place be made. Avoid grazing at the periphery of flood.
		Milk fever in Milch cow	70-100ml of a mixture of Ca <sup>+</sup> and Phosphorus daily @ 5-7days.

**Fishery:**

\* Encircle pond with happa net or raise the pond dyke height to avoid escape of fishes.

Type of Farming	Stage	Management	Agro-metrological advisories
Carp culture	Nurseries/ grow-out	Pond and water	Maintain minimum depth of 1.5 m. Apply Lime/ Green AQ for maintaining good quality water.
		Feed	Provide 2-3 times @ 5-10% body weight per day. Provide good feed having 30% crude protein fortified with vitamins and mineral.
	Brooder	Pond water and feed	Maintain minimum depth of 2.0-2.2 m. Provide feed @ 3-5 % body weight per day.
	Breeding	Hormone	Fish hormones like ovaprim, ovotide or Wova-FH can be injected in both the brooders @ <b>0.5 ml/kg</b> of fish for catla, rohu and mirgal; 0.5-0.7 ml/kg for grass carp.
	Seed production		Maintain good quality water having p <sup>H</sup> 7-8, Dissolved Oxygen: 5-8ppm; CO <sub>2</sub> : Nil – 0.3ppm and alkalinity 70-110 ppm.
	Hatcheries	water	Hatching can be done in traditional hapas having outer & inner hapas or circular hatcheries. A mild current with fine shower is needed for circular hatcheries. Feed should not be given for 3 days.

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



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

**MANIPUR BULLETIN****4<sup>th</sup> July, 2017****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 5<sup>th</sup> to 9<sup>th</sup> July, 2017 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (30<sup>th</sup> June to 3<sup>rd</sup> July, 2017)**

Observed mainly cloudy to overcast sky and **6.3 mm** rainfall was recorded during past three days. Maximum temperature range of 28.8 to 31.2 °C and minimum temperature range of 22.3 to 24.6 °C with mean relative humidity 91.66 % max and 71.33 % min was recorded in the past three days.

**Weather forecast for next five days of Imphal West (5<sup>th</sup> to 9<sup>th</sup> July, 2017)**

Likely to have heavy to very heavy rainfall at isolated places over Manipur upto Thursday and moderate rainfall thereafter with overcast sky and maximum temp. 29 - 32 °C & minimum temp. 22 - 23 °C. Relative humidity may reach up to 100 % (max RH) & (81-100) % (min RH). The average wind speed may be 0 - 2 km/hr.

<b>Field Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Rice</b>	Maturity to harvesting (Pre-kharif rice)		- Rice can be harvested after rains when 80% of panicles turn hard & golden yellow. - <b>Over maturity</b> should be avoided to reduce shattering losses.
	Nursery to land preparation for transplanting (kharif rice)		- Apply Carbofuran 3G @2kg/ha a week before uprooting the seedling. - Land preparation of main field may be started for transplanting rice seedling. Apply 65kg Urea, 250 kg SSP and 45 kg MOP per hectare at the time of final leveling. - After rains, uproot seedlings at 25 to 35 days after sowing depending on availability of water. About 1200 to 1300 bundles of seedlings (40cm diameter) may be required for transplanting one ha area. - Seedling of Main season rice can be raised upto first week of July and can be transplanted within 3 <sup>rd</sup> week of July.
	Direct seeding with drum seeder		- Treat seed treatment with Humicil @ 5ml/kg seed. - Puddle the field properly and level it. - Drain out water 24 hrs before sowing. - Use just pre-germinated seeds.
<b>Maize</b>	Vegetative		- At knee height stage, apply urea @ 43 kg Urea/ ha after rains.
<b>Soybean / Groundnut</b>	Vegetative		- Earthing-up and thinning may be done at 30 to 40 days after sowing of crop after rain. - Avoid leaf eating caterpillars/ insects at least upto 60 days after sowing.
<b>Blackgram &amp; Rice bean</b>	Vegetative		- Avoid sowing in water logged fields. Also, avoid hairy caterpillars.
<b>Seeds storage</b>	Post harvest management		- For seed purpose dry, clean and store the seeds in <b>RC-seed bins</b> after proper drying of seeds along with charcoal at 80:20. Check for moisture content or weight of charcoal and dry if required. - For grains, store grains in well ventilated godowns after drying proper. Spray Malathion 1% on the walls of stores.
<b>Horticulture Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Ginger/ Turmeric</b>	Vegetative	Leaf Spot	To prevent Leaf Spot disease, apply Bordeaux mixture (5:5:50) after 4 – 5 weeks of sowing or Captan @ 1.5 g/l of water after rains.
			After rains, weeding and inter-culture operation may be done and apply 100 Kg Urea and 300 Kg SSP per hectare at 2-3 months after planting.
<b>Passion fruit</b>	Fruiting		Spray Malathion @ 5 ml/lit of water to control fruit fly. Harvest the fruits at least 15 days after spraying. Avoid water stagnation.
<b>Orange/Lime/ Lemon/ Litchi</b>	Planting	Lichen incidence	- If lichen is observed, then scrap out the affected area and paint with Bordeaux paste or Benlate after the wet spell.
			Apply 650g Urea, 1250g SSP and 450g MOP per tree in circular trench around the trunk.
<b>Tree bean</b>	Transplanting/ Fertilizer		One year or more than a year old quality seedling may be transplanted in the pit. Recommended spacing is 10x10 m from plant to plant and row to row At the time of planting apply 5 kg FYM + 30 gm lime+30 gm linden 5% dust + 5

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

Manipur Centre, Lamphelpat, Imphal - 795 004

**“Gramin Krishi Mausam Seva”**

	application		ml Chlorpyrifos 20 EC + 1.5 g Mancozeb + Carbendazim per pit. For 7 yrs and above and for bearing plants apply 7 kg FYM, 120 Kg urea, 300 gm SSP, 80 gm MOP, 1 Kg lime should be applied.
--	-------------	--	--

**Animal Sciences****\* Provide clean drinking water for birds and animals.**

- Apply Himax ointment twice daily on animal body to prevent bite of fly and mosquitoes.

Name of bird/ animal	Stage	Disease and Management	Agro-meteorological advisories
<b>Poultry (Chicken/ Turkey/ Duck)</b>	All age groups	Fowl Pox	Vaccinate against fowl pox.
		Coccidiosis	- Give Amprolium Powder @2g/lit of drinking water for 5 to 7 days.
		Deworming	➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose at regular interval of 3 weeks.
			- Bleaching powder may be spread near farm premises. - Avoid fungal infested feed. - Use dry litter material in the shed, if moist apply lime powder @ 1kg per 100 ft <sup>2</sup> area.
<b>Sheep/ Goat</b>	All age groups	Vaccination	- Sheep should be vaccinated against B.Q./ H.S.
<b>Pig</b>	All age groups except the young ones	De-worming	- De-worming of animals should be done using Albendazole @7.5 mg/kg b.wt.
		Vaccination	- Vaccinate against FMD.
		Management	- Provide adequate amount of wholesome water (drinking). - Essential body salts may be provided.
<b>Cattle</b>	All age groups excepts the young ones	B.Q. & H.S.	Vaccinate against B.Q., F.M.D. & H.S.
		Deworming	Use Albomac suspension@60-90ml for 300kg body weight or 20-30ml for 100 kg body weight.
		Slush & Flood Management	Provide wholesome water. Adequate arrangements for the animals to be kept at the safety place be made. Avoid grazing at the periphery of flood.
		Milk fever in Milch cow	70-100ml of a mixture of Ca <sup>+</sup> and Phosphorus daily @ 5-7days.

**Fishery:**

\* Encircle pond with happa net or raise the pond dyke height to avoid escape of fishes.

Type of Farming	Stage	Management	Agro-metrological advisories
Carp culture	Nurseries/ grow-out	Pond and water	Maintain minimum depth of 1.5 m. Apply Lime/ Green AQ for maintaining good quality water.
		Feed	Provide 2-3 times @ 5-10% body weight per day. Provide good feed having 30% crude protein fortified with vitamins and mineral.
	Brooder	Pond water and feed	Maintain minimum depth of 2.0-2.2 m. Provide feed @ 3-5 % body weight per day.
	Breeding	Hormone	Fish hormones like ovaprim, ovatide or Wova-FH can be injected in both the brooders @ <b>0.5 ml/kg</b> of fish for catla, rohu and mirgal; 0.5-0.7 ml/kg for grass carp.
	Seed production		Maintain good quality water having p <sup>H</sup> 7-8, Dissolved Oxygen: 5-8ppm; CO <sub>2</sub> : Nil – 0.3ppm and alkalinity 70-110 ppm.
	Hatcheries	water	Hatching can be done in traditional hapas having outer & inner hapas or circular hatcheries. A mild current with fine shower is needed for circular hatcheries. Feed should not be given for 3 days.

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



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

**MANIPUR BULLETIN****4<sup>th</sup> July, 2017****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 5<sup>th</sup> to 9<sup>th</sup> July, 2017 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (30<sup>th</sup> June to 3<sup>rd</sup> July, 2017)**

Observed mainly cloudy to overcast sky and **6.3 mm** rainfall was recorded during past three days. Maximum temperature range of 28.8 to 31.2 °C and minimum temperature range of 22.3 to 24.6 °C with mean relative humidity 91.66 % max and 71.33 % min was recorded in the past three days.

**Weather forecast for next five days of Bishnupur (5<sup>th</sup> to 9<sup>th</sup> July, 2017)**

Likely to have heavy to very heavy rainfall at isolated places over Manipur upto Thursday and moderate rainfall thereafter with overcast sky and maximum temp. 27 - 33 °C & minimum temp. 23 - 25 °C. Relative humidity may reach up to 100 % (max RH) & 98 % (min RH). The average wind speed may be 2 km/hr.

<b>Field Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Rice</b>	Maturity to harvesting (Pre-kharif rice)		- Rice can be harvested after rains when 80% of panicles turn hard & golden yellow. - <b>Over maturity</b> should be avoided to reduce shattering losses.
	Nursery to land preparation for transplanting (kharif rice)		- Apply Carbofuran 3G @2kg/ha a week before uprooting the seedling. - Land preparation of main field may be started for transplanting rice seedling. Apply 65kg Urea, 250 kg SSP and 45 kg MOP per hectare at the time of final leveling. - After rains, uproot seedlings at 25 to 35 days after sowing depending on availability of water. About 1200 to 1300 bundles of seedlings (40cm diameter) may be required for transplanting one ha area. - Seedling of Main season rice can be raised upto first week of July and can be transplanted within 3 <sup>rd</sup> week of July.
	Direct seeding with drum seeder		- Treat seed treatment with Humicil @ 5ml/kg seed. - Puddle the field properly and level it. - Drain out water 24 hrs before sowing. - Use just pre-germinated seeds.
<b>Maize</b>	Vegetative		- At knee height stage, apply urea @ 43 kg Urea/ ha after rains.
<b>Soybean / Groundnut</b>	Vegetative		- Earthing-up and thinning may be done at 30 to 40 days after sowing of crop after rain. - Avoid leaf eating caterpillars/ insects at least upto 60 days after sowing.
<b>Blackgram &amp; Rice bean</b>	Vegetative		- Avoid sowing in water logged fields. Also, avoid hairy caterpillars.
<b>Seeds storage</b>	Post harvest management		- For seed purpose dry, clean and store the seeds in <b>RC-seed bins</b> after proper drying of seeds along with charcoal at 80:20. Check for moisture content or weight of charcoal and dry if required. - For grains, store grains in well ventilated godowns after drying proper. Spray Malathion 1% on the walls of stores.
<b>Horticulture Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Ginger/ Turmeric</b>	Vegetative	Leaf Spot	To prevent Leaf Spot disease, apply Bordeaux mixture (5:5:50) after 4 – 5 weeks of sowing or Captan @ 1.5 g/l of water after rains.
			After rains, weeding and inter-culture operation may be done and apply 100 Kg Urea and 300 Kg SSP per hectare at 2-3 months after planting.
<b>Passion fruit</b>	Fruiting		Spray Malathion @ 5 ml/lit of water to control fruit fly. Harvest the fruits at least 15 days after spraying. Avoid water stagnation.
<b>Orange/Lime/ Lemon/ Litchi</b>	Planting	Lichen incidence	- If lichen is observed, then scrap out the affected area and paint with Bordeaux paste or Benlate after the wet spell.
			Apply 650g Urea, 1250g SSP and 450g MOP per tree in circular trench around the trunk.
<b>Tree bean</b>	Transplanting/ Fertilizer		One year or more than a year old quality seedling may be transplanted in the pit. Recommended spacing is 10x10 m from plant to plant and row to row At the time of planting apply 5 kg FYM + 30 gm lime+30 gm linden 5% dust + 5



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

Manipur Centre, Lamphelpat, Imphal - 795 004

**“Gramin Krishi Mausam Seva”**

	application		ml Chlorpyrifos 20 EC + 1.5 g Mancozeb + Carbendazim per pit. For 7 yrs and above and for bearing plants apply 7 kg FYM, 120 Kg urea, 300 gm SSP, 80 gm MOP, 1 Kg lime should be applied.
--	-------------	--	--

**Animal Sciences****\* Provide clean drinking water for birds and animals.**

- Apply Himax ointment twice daily on animal body to prevent bite of fly and mosquitoes.

Name of bird/ animal	Stage	Disease and Management	Agro-meteorological advisories
<b>Poultry (Chicken/ Turkey/ Duck)</b>	All age groups	Fowl Pox	Vaccinate against fowl pox.
		Coccidiosis	- Give Amprolium Powder @2g/lit of drinking water for 5 to 7 days.
		Deworming	➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose at regular interval of 3 weeks.
			- Bleaching powder may be spread near farm premises. - Avoid fungal infested feed. - Use dry litter material in the shed, if moist apply lime powder @ 1kg per 100 ft <sup>2</sup> area.
<b>Sheep/ Goat</b>	All age groups	Vaccination	- Sheep should be vaccinated against B.Q./ H.S.
<b>Pig</b>	All age groups except the young ones	De-worming	- De-worming of animals should be done using Albendazole @7.5 mg/kg b.wt.
		Vaccination	- Vaccinate against FMD.
		Management	- Provide adequate amount of wholesome water (drinking). - Essential body salts may be provided.
<b>Cattle</b>	All age groups excepts the young ones	B.Q. & H.S.	Vaccinate against B.Q., F.M.D. & H.S.
		Deworming	Use Albomac suspension@60-90ml for 300kg body weight or 20-30ml for 100 kg body weight.
		Slush & Flood Management	Provide wholesome water. Adequate arrangements for the animals to be kept at the safety place be made. Avoid grazing at the periphery of flood.
		Milk fever in Milch cow	70-100ml of a mixture of Ca <sup>+</sup> and Phosphorus daily @ 5-7days.

**Fishery:**

\* Encircle pond with happa net or raise the pond dyke height to avoid escape of fishes.

Type of Farming	Stage	Management	Agro-metrological advisories
Carp culture	Nurseries/ grow-out	Pond and water	Maintain minimum depth of 1.5 m. Apply Lime/ Green AQ for maintaining good quality water.
		Feed	Provide 2-3 times @ 5-10% body weight per day. Provide good feed having 30% crude protein fortified with vitamins and mineral.
	Brooder	Pond water and feed	Maintain minimum depth of 2.0-2.2 m. Provide feed @ 3-5 % body weight per day.
	Breeding	Hormone	Fish hormones like ovaprim, ovatide or Wova-FH can be injected in both the brooders @ <b>0.5 ml/kg</b> of fish for catla, rohu and mirgal; 0.5-0.7 ml/kg for grass carp.
	Seed production		Maintain good quality water having p <sup>H</sup> 7-8, Dissolved Oxygen: 5-8ppm; CO <sub>2</sub> : Nil – 0.3ppm and alkalinity 70-110 ppm.
	Hatcheries	water	Hatching can be done in traditional hapas having outer & inner hapas or circular hatcheries. A mild current with fine shower is needed for circular hatcheries. Feed should not be given for 3 days.

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



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

**MANIPUR BULLETIN****4<sup>th</sup> July, 2017****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 5<sup>th</sup> to 9<sup>th</sup> July, 2017 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (30<sup>th</sup> June to 3<sup>rd</sup> July, 2017)**

Observed mainly cloudy to overcast sky and **6.3 mm** rainfall was recorded during past three days. Maximum temperature range of 28.8 to 31.2 °C and minimum temperature range of 22.3 to 24.6 °C with mean relative humidity 91.66 % max and 71.33 % min was recorded in the past three days.

**Weather forecast for next five days of Chandel (5<sup>th</sup> to 9<sup>th</sup> July, 2017)**

Likely to have heavy to very heavy rainfall at isolated places over Manipur upto Thursday and moderate rainfall thereafter with overcast sky and maximum temp. 28 - 35 °C & minimum temp. 24 - 25 °C. Relative humidity may reach up to 100 % (max RH) & 98 % (min RH). The average wind speed may be 2-3 km/hr.

<b>Field Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Rice</b>	Maturity to harvesting (Pre-kharif rice)		- Rice can be harvested after rains when 80% of panicles turn hard & golden yellow. - <b>Over maturity</b> should be avoided to reduce shattering losses.
	Nursery to land preparation for transplanting (kharif rice)		- Apply Carbofuran 3G @2kg/ha a week before uprooting the seedling. - Land preparation of main field may be started for transplanting rice seedling. Apply 65kg Urea, 250 kg SSP and 45 kg MOP per hectare at the time of final leveling. - After rains, uproot seedlings at 25 to 35 days after sowing depending on availability of water. About 1200 to 1300 bundles of seedlings (40cm diameter) may be required for transplanting one ha area. - Seedling of Main season rice can be raised upto first week of July and can be transplanted within 3 <sup>rd</sup> week of July.
	Direct seeding with drum seeder		- Treat seed treatment with Humicil @ 5ml/kg seed. - Puddle the field properly and level it. - Drain out water 24 hrs before sowing. - Use just pre-germinated seeds.
<b>Maize</b>	Vegetative		- At knee height stage, apply urea @ 43 kg Urea/ ha after rains.
<b>Soybean / Groundnut</b>	Vegetative		- Earthing-up and thinning may be done at 30 to 40 days after sowing of crop after rain. - Avoid leaf eating caterpillars/ insects at least upto 60 days after sowing.
<b>Blackgram &amp; Rice bean</b>	Vegetative		- Avoid sowing in water logged fields. Also, avoid hairy caterpillars.
<b>Seeds storage</b>	Post harvest management		- For seed purpose dry, clean and store the seeds in <b>RC-seed bins</b> after proper drying of seeds along with charcoal at 80:20. Check for moisture content or weight of charcoal and dry if required. - For grains, store grains in well ventilated godowns after drying proper. Spray Malathion 1% on the walls of stores.
<b>Horticulture Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Ginger/ Turmeric</b>	Vegetative	Leaf Spot	To prevent Leaf Spot disease, apply Bordeaux mixture (5:5:50) after 4 – 5 weeks of sowing or Captan @ 1.5 g/l of water after rains.
			After rains, weeding and inter-culture operation may be done and apply 100 Kg Urea and 300 Kg SSP per hectare at 2-3 months after planting.
<b>Passion fruit</b>	Fruiting		Spray Malathion @ 5 ml/lit of water to control fruit fly. Harvest the fruits at least 15 days after spraying. Avoid water stagnation.
<b>Orange/Lime/ Lemon/ Litchi</b>	Planting	Lichen incidence	- If lichen is observed, then scrap out the affected area and paint with Bordeaux paste or Benlate after the wet spell.
			Apply 650g Urea, 1250g SSP and 450g MOP per tree in circular trench around the trunk.
<b>Tree bean</b>	Transplanting/ Fertilizer		One year or more than a year old quality seedling may be transplanted in the pit. Recommended spacing is 10x10 m from plant to plant and row to row At the time of planting apply 5 kg FYM + 30 gm lime+30 gm linden 5% dust + 5

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

Manipur Centre, Lamphelpat, Imphal - 795 004

**“Gramin Krishi Mausam Seva”**

	application		ml Chlorpyrifos 20 EC + 1.5 g Mancozeb + Carbendazim per pit. For 7 yrs and above and for bearing plants apply 7 kg FYM, 120 Kg urea, 300 gm SSP, 80 gm MOP, 1 Kg lime should be applied.
--	-------------	--	--

**Animal Sciences****\* Provide clean drinking water for birds and animals.**

- Apply Himax ointment twice daily on animal body to prevent bite of fly and mosquitoes.

Name of bird/ animal	Stage	Disease and Management	Agro-meteorological advisories
<b>Poultry (Chicken/ Turkey/ Duck)</b>	All age groups	Fowl Pox	Vaccinate against fowl pox.
		Coccidiosis	- Give Amprolium Powder @2g/lit of drinking water for 5 to 7 days.
		Deworming	➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose at regular interval of 3 weeks.
			- Bleaching powder may be spread near farm premises. - Avoid fungal infested feed. - Use dry litter material in the shed, if moist apply lime powder @ 1kg per 100 ft <sup>2</sup> area.
<b>Sheep/ Goat</b>	All age groups	Vaccination	- Sheep should be vaccinated against B.Q./ H.S.
<b>Pig</b>	All age groups except the young ones	De-worming	- De-worming of animals should be done using Albendazole @7.5 mg/kg b.wt.
		Vaccination	- Vaccinate against FMD.
		Management	- Provide adequate amount of wholesome water (drinking). - Essential body salts may be provided.
<b>Cattle</b>	All age groups excepts the young ones	B.Q. & H.S.	Vaccinate against B.Q., F.M.D. & H.S.
		Deworming	Use Albomac suspension@60-90ml for 300kg body weight or 20-30ml for 100 kg body weight.
		Slush & Flood Management	Provide wholesome water. Adequate arrangements for the animals to be kept at the safety place be made. Avoid grazing at the periphery of flood.
		Milk fever in Milch cow	70-100ml of a mixture of Ca <sup>+</sup> and Phosphorus daily @ 5-7days.

**Fishery:**

\* Encircle pond with happa net or raise the pond dyke height to avoid escape of fishes.

Type of Farming	Stage	Management	Agro-metrological advisories
Carp culture	Nurseries/ grow-out	Pond and water	Maintain minimum depth of 1.5 m. Apply Lime/ Green AQ for maintaining good quality water.
		Feed	Provide 2-3 times @ 5-10% body weight per day. Provide good feed having 30% crude protein fortified with vitamins and mineral.
	Brooder	Pond water and feed	Maintain minimum depth of 2.0-2.2 m. Provide feed @ 3-5 % body weight per day.
	Breeding	Hormone	Fish hormones like ovaprim, ovatide or Wova-FH can be injected in both the brooders @ <b>0.5 ml/kg</b> of fish for catla, rohu and mirgal; 0.5-0.7 ml/kg for grass carp.
	Seed production		Maintain good quality water having p <sup>H</sup> 7-8, Dissolved Oxygen: 5-8ppm; CO <sub>2</sub> : Nil – 0.3ppm and alkalinity 70-110 ppm.
	Hatcheries	water	Hatching can be done in traditional hapas having outer & inner hapas or circular hatcheries. A mild current with fine shower is needed for circular hatcheries. Feed should not be given for 3 days.

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



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

**MANIPUR BULLETIN****4<sup>th</sup> July, 2017****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 5<sup>th</sup> to 9<sup>th</sup> July, 2017 as below:

**Significant past weather for the preceding bi-weekly of Imphal - West (30<sup>th</sup> June to 3<sup>rd</sup> July, 2017)**

Observed mainly cloudy to overcast sky and **6.3 mm** rainfall was recorded during past three days. Maximum temperature range of 28.8 to 31.2 °C and minimum temperature range of 22.3 to 24.6 °C with mean relative humidity 91.66 % max and 71.33 % min was recorded in the past three days.

**Weather forecast for next five days of Churachandpur (5<sup>th</sup> to 9<sup>th</sup> July, 2017)**

Likely to have heavy to very heavy rainfall at isolated places over Manipur upto Thursday and moderate rainfall thereafter with overcast sky and maximum temp. 26 - 32 °C & minimum temp. 24 - 25 °C. Relative humidity may reach up to 100 % (max RH) & 99 % (min RH). The average wind speed may be 2 km/hr.

<b>Field Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Rice</b>	Maturity to harvesting (Pre-kharif rice)		- Rice can be harvested after rains when 80% of panicles turn hard & golden yellow. - <b>Over maturity</b> should be avoided to reduce shattering losses.
	Nursery to land preparation for transplanting (kharif rice)		- Apply Carbofuran 3G @2kg/ha a week before uprooting the seedling. - Land preparation of main field may be started for transplanting rice seedling. Apply 65kg Urea, 250 kg SSP and 45 kg MOP per hectare at the time of final leveling. - After rains, uproot seedlings at 25 to 35 days after sowing depending on availability of water. About 1200 to 1300 bundles of seedlings (40cm diameter) may be required for transplanting one ha area. - Seedling of Main season rice can be raised upto first week of July and can be transplanted within 3 <sup>rd</sup> week of July.
	Direct seeding with drum seeder		- Treat seed treatment with Humicil @ 5ml/kg seed. - Puddle the field properly and level it. - Drain out water 24 hrs before sowing. - Use just pre-germinated seeds.
<b>Maize</b>	Vegetative		- At knee height stage, apply urea @ 43 kg Urea/ ha after rains.
<b>Soybean / Groundnut</b>	Vegetative		- Earthing-up and thinning may be done at 30 to 40 days after sowing of crop after rain. - Avoid leaf eating caterpillars/ insects at least upto 60 days after sowing.
<b>Blackgram &amp; Rice bean</b>	Vegetative		- Avoid sowing in water logged fields. Also, avoid hairy caterpillars.
<b>Seeds storage</b>	Post harvest management		- For seed purpose dry, clean and store the seeds in <b>RC-seed bins</b> after proper drying of seeds along with charcoal at 80:20. Check for moisture content or weight of charcoal and dry if required. - For grains, store grains in well ventilated godowns after drying proper. Spray Malathion 1% on the walls of stores.
<b>Horticulture Crops</b>			
<b>Name of the crop</b>	<b>Stage</b>	<b>Pest and disease</b>	<b>Agro-meteorological advisories</b>
<b>Ginger/ Turmeric</b>	Vegetative	Leaf Spot	To prevent Leaf Spot disease, apply Bordeaux mixture (5:5:50) after 4 – 5 weeks of sowing or Captan @ 1.5 g/l of water after rains.
			After rains, weeding and inter-culture operation may be done and apply 100 Kg Urea and 300 Kg SSP per hectare at 2-3 months after planting.
<b>Passion fruit</b>	Fruiting		Spray Malathion @ 5 ml/lit of water to control fruit fly. Harvest the fruits at least 15 days after spraying. Avoid water stagnation.
<b>Orange/Lime/ Lemon/ Litchi</b>	Planting	Lichen incidence	- If lichen is observed, then scrap out the affected area and paint with Bordeaux paste or Benlate after the wet spell.
			Apply 650g Urea, 1250g SSP and 450g MOP per tree in circular trench around the trunk.
<b>Tree bean</b>	Transplanting/ Fertilizer		One year or more than a year old quality seedling may be transplanted in the pit. Recommended spacing is 10x10 m from plant to plant and row to row At the time of planting apply 5 kg FYM + 30 gm lime+30 gm linden 5% dust + 5

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

Manipur Centre, Lamphelpat, Imphal - 795 004

**“Gramin Krishi Mausam Seva”**

	application		ml Chlorpyrifos 20 EC + 1.5 g Mancozeb + Carbendazim per pit. For 7 yrs and above and for bearing plants apply 7 kg FYM, 120 Kg urea, 300 gm SSP, 80 gm MOP, 1 Kg lime should be applied.
--	-------------	--	--

**Animal Sciences****\* Provide clean drinking water for birds and animals.**

- Apply Himax ointment twice daily on animal body to prevent bite of fly and mosquitoes.

Name of bird/ animal	Stage	Disease and Management	Agro-meteorological advisories
<b>Poultry (Chicken/ Turkey/ Duck)</b>	All age groups	Fowl Pox	Vaccinate against fowl pox.
		Coccidiosis	- Give Amprolium Powder @2g/lit of drinking water for 5 to 7 days.
		Deworming	➤ Use Albendazole liquid @ 20-40 ml for 100 adult birds and repeat it next day with half the dose at regular interval of 3 weeks.
			- Bleaching powder may be spread near farm premises. - Avoid fungal infested feed. - Use dry litter material in the shed, if moist apply lime powder @ 1kg per 100 ft <sup>2</sup> area.
<b>Sheep/ Goat</b>	All age groups	Vaccination	- Sheep should be vaccinated against B.Q./ H.S.
<b>Pig</b>	All age groups except the young ones	De-worming	- De-worming of animals should be done using Albendazole @7.5 mg/kg b.wt.
		Vaccination	- Vaccinate against FMD.
		Management	- Provide adequate amount of wholesome water (drinking). - Essential body salts may be provided.
<b>Cattle</b>	All age groups excepts the young ones	B.Q. & H.S.	Vaccinate against B.Q., F.M.D. & H.S.
		Deworming	Use Albomac suspension@60-90ml for 300kg body weight or 20-30ml for 100 kg body weight.
		Slush & Flood Management	Provide wholesome water. Adequate arrangements for the animals to be kept at the safety place be made. Avoid grazing at the periphery of flood.
		Milk fever in Milch cow	70-100ml of a mixture of Ca <sup>+</sup> and Phosphorus daily @ 5-7days.

**Fishery:**

\* Encircle pond with happa net or raise the pond dyke height to avoid escape of fishes.

Type of Farming	Stage	Management	Agro-metrological advisories
Carp culture	Nurseries/ grow-out	Pond and water	Maintain minimum depth of 1.5 m. Apply Lime/ Green AQ for maintaining good quality water.
		Feed	Provide 2-3 times @ 5-10% body weight per day. Provide good feed having 30% crude protein fortified with vitamins and mineral.
	Brooder	Pond water and feed	Maintain minimum depth of 2.0-2.2 m. Provide feed @ 3-5 % body weight per day.
	Breeding	Hormone	Fish hormones like ovaprim, ovatide or Wova-FH can be injected in both the brooders @ <b>0.5 ml/kg</b> of fish for catla, rohu and mirgal; 0.5-0.7 ml/kg for grass carp.
	Seed production		Maintain good quality water having p <sup>H</sup> 7-8, Dissolved Oxygen: 5-8ppm; CO <sub>2</sub> : Nil – 0.3ppm and alkalinity 70-110 ppm.
	Hatcheries	water	Hatching can be done in traditional hapas having outer & inner hapas or circular hatcheries. A mild current with fine shower is needed for circular hatcheries. Feed should not be given for 3 days.

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