Crop Calendar for Ri Bhoi District, Meghalaya

(For areas located at an altitude of 800-1400 m from mean sea level)

Technical Bulletin (ICARNEH/NICRA/2013)

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Preface

A crop calendar is a ready-guide to the farmers to undertake different crop related activities (Land preparation, Fertilizer application, Sowing, Irrigation, Harvesting etc.) in connection with the on going weather conditions. It also helps them to be ready for the oncoming crop season to keep their field ready to grow different type of crops. The crop calendar is intended to increase the cropping intensity of the state by providing an easy outlook/reminder for various crop activities which can be taken up simultaneously or one after another depending upon the weather conditions without any wastage of time and resources.

Here, the crop growth period, starting from land preparation to harvesting, is indicated by Standard meteorological weeks' and associated probable rainfall and mean temperature for a given week are indicated along with.

E.g.

Probable rainfall (mm)
Dates
Mean temperature (^{O}C)

The rainfall amount (mm) is indicated in the upper part and mean temperature (^{O}C) in the lower part of a given week. The rainfall amount is expected rainfall at 75% probability level. 75% probability means rainfall expected in a given week at three-fourth chances of the long term normal rainfall, which is found as most close to the long term normal rainfall received in this region.

There are 52 Standard Weeks in a year. The No. 1 week means 'first week' of January. One should look for the Week No. 1 to start with any crop related activities. The weeks mentioned in the calendar denotes the **most suitable period** for a particular crop activity. One can also grow a crop ahead or after the standard weeks mentioned in the calendar depending on the instant weather conditions.

The crop information incorporated in the calendar is as per the Package of Practices for Agricultural Crops of Meghalaya, published by Department of Agriculture, Govt. of Meghalaya and research inputs obtained from ICAR Research

Complex for NEH Region, Umiam, which was blended with the 20 years strong weather information of Umiam (1983-2003). Though the spatial variability of weather varies greatly in hills due to orographic effects, it was assumed, while preparing the calendar, that the Umiam weather is more or less similar with the rest of the state with height of 800-1400 m above m.s.l.

***'Grow and Harvest Early'* to get the maximum economic return.**

S. V. Ngachan
Director

Contents

Agri-Profile of Ri-Bhoi district of Meghalaya

A. Agro-climatic zones of Meghalaya

The entire geographical area of Meghalaya can be classified in to five agro-climatic zones:

1. ***Warm and humid with medium rainfall (1270-2032 mm)***: This zone occurs in the hills and northern slopes in the north and western parts of West Garo Hills, the northern parts of East and West Khasi Hills and the north eastern parts of Jaintia Hills districts. This zone features soil of light to medium texture with generally high depth. The important crops in this zone are rice, maize, wheat, jute and mesta, rapeseed-mustard, cotton and ginger. **The Ri-Bhoi district falls under this zone**.
2. ***Humid and moderately cold in winter with high rainfall (2800-4000 mm)***: This zone occurs in the central plateau of the Garo Hills and a portion of the Central plateau of the West Khasi Hills. The soils are light to medium in texture and generally very deep. Maize, ginger, cotton and tea are the principal crops grown in this zone.
3. ***Humid with moderately warm summer and severe cold winter featuring high rainfall (2800-6000 mm)***: This zone comprises of the central plateau of the East Khasi Hills, the West Khasi Hills and the Jaintia Hills. The soil is light to medium in texture and generally very deep. The zone is suitable for vegetables, especially potato, upland rice, tea and ginger.
4. ***Humid and warm with very high rainfall (4000-10000 mm)***: This zone occurs in the southern slope comprising of the eastern part of Jaintia Hills, the southern part of the East Khasi Hills and a portion of the southern edge of the West Khasi Hills. The soil is light to medium in texture and deep to very deep. Important crops of this zone are oragnes, turmeric and soybean.
5. ***Humid and hot with high rainfall (2800-4000 mm)***: This zone comprises of the southern part of the West Garo Hills and a part of the southern part of the West Khasi Hills. The soil depth ranges from moderate to very deep and light to heavy in texture. Rice, jute and mesta and oilseeds are the important crops grown in this zone.

B. Land use profile of Ri-Bhoi district (including agricultural land use)

Land Classification	Area ('000 ha)
1. Geographical Area	244.800
2. Reporting Area	243.700
3. Forests (Classed and Un-classed)	86.918
4. Area not available for Cultivation	
(i) Area under non-agricultural uses	
a. Water Logged Land	—
b. Social forestry	2.400
c. Land Under Still Water	2.016
d. Other Land	9.545
Total (a to d)	13.961
(ii) Barren and Uncultivable Land	19.430
Total (i and ii)	33.391
5. Other Cultivated Land	
a. Permanent Pastures and Other Grazing Lands	—
b. Land under Misc. tree Crops and Grooves, etc.	29.194
c. Cultivable Wastelands	56.983
Total (a+b+c)	86.177
6. Fallow Lands	—
a. Fallow Lands other than Current Fallow	8.871
b. Current Fallows	6.181
Total (a + b)	15.052
Net Area Sown	**22.232**
Area Sown More than Once	**2.901**
Total Cropped Area	**25.133**

(Source: Department of Economics & Statistics, Govt. of Meghalaya, 2009-10;http://shillong.nic.in/Agri/agri_scenario/LandUseStats.aspx)

C. Irrigation status of Ri-Bhoi district

	Area ('000 ha)
Net irrigated area	11.6710
Gross irrigated area	12.8915
Rainfed area	208.3470

(Source: Irrigation Statistics of Meghalaya for the Year 2009)

D. Area under major field & horticultural crops in Ri-Bhoi district

	Kharif	Rabi	Grand total
Field crops	**Area ('000 ha)**		
Rice	9.414	0.191	9.605
Wheat		0.003	0.003
Maize	1.517		1.517
Other Cereals		0.013	0.013
Pulses	0.155	0.028	0.183
Oilseeds		0.159	0.159
Horticultural crops			
Khasi Mandarin			0.228
Assam Lemon			0.040
Pumello			0.040
Banana			0.872
Pineapple			3.654
Cowpea			0.004
Potato			0.025
Chillies			0.093
Turmeric			0.092
Ginger			0.973

Plantation crops	
Arecanut	0.149
Tea leaf	1.110
Black Pepper	0.146
Rubber	0.887
Coffee	0.072

E. Productivity of major field & horticultural crops in Ri-Bhoi district

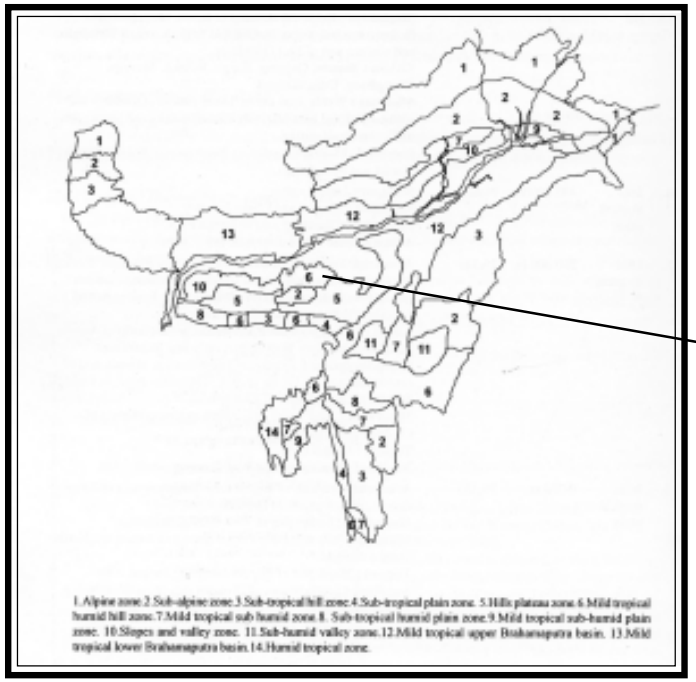
Field crops	**Productivity (tones/ha)**
Rice	2.671
Wheat	1.788
Maize	2.498
Rapeseed & Mustard	6.661
Horticultural crops	
Khasi Mandarin	5.687
Tomato	9.965
Banana	17.554
Pineapple	39.066
Potato	9.287
Ginger	7.825

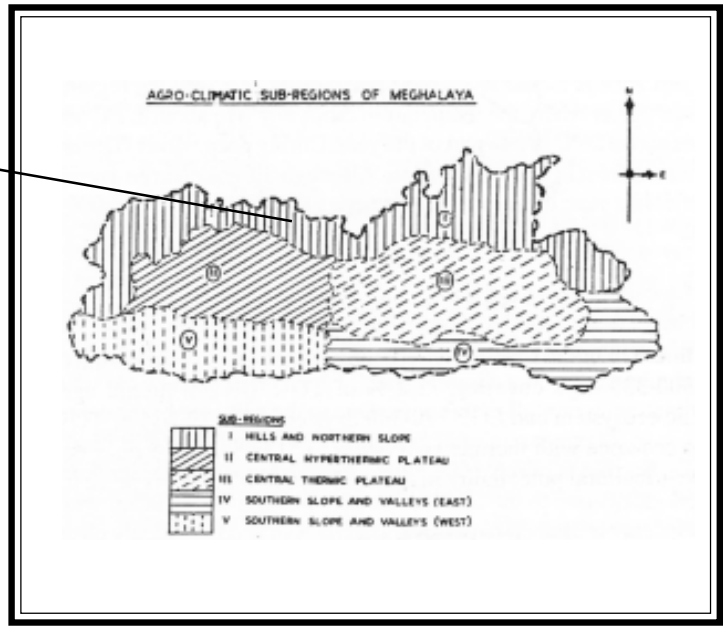
Source: 1) State Level Crop Statistics on Rabi Crops 2009-10
2) State Level Crop Statistics on Kharif Crops 2009-10
3) Directorate of Economics and Statistics, Govt. of Meghalaya

Standard periods and weeks

Month	Week No.	Date	Month	Week No.	Date
January	1	1 to 7	July	27	2 to 8
	2	8 to 14		28	9 to 15
	3	15 to 21		29	16 to 22
	4	22 to 28		30	23 to 29
	5	29 to 4		31	30 to 5
February	6	5 to 11	August	32	6 to 12
	7	12 to 18		33	13 to 19
	8	19 to 25		34	20 to 26
	9	26 to 4		35	27 to 2
March	10	5 to 11	September	36	3 to 9
	11	12 to 18		37	10 to 16
	12	19 to 25		38	17 to 23
	13	26 to 1		39	24 to 30
April	14	2 to 8	October	40	1 to 7
	15	9 to 15		41	8 to 14
	16	16 to 22		42	15 to 21
	17	23 to 29		43	22 to 28
	18	30 to 6		44	29 to 4
May	19	7 to 13	November	45	5 to 11
	20	14 to 20		46	12 to 18
	21	21 to 27		47	19 to 25
	22	28 to 3		48	26 to 2
June	23	4 to 10	December	49	3 to 9
	24	11 to 17		50	10 to 16
	25	18 to 24		51	17 to 23
	26	25 to 1		52	24 to 31

Agroclimatic sub-regions of Ri Bhoi District, Meghalaya





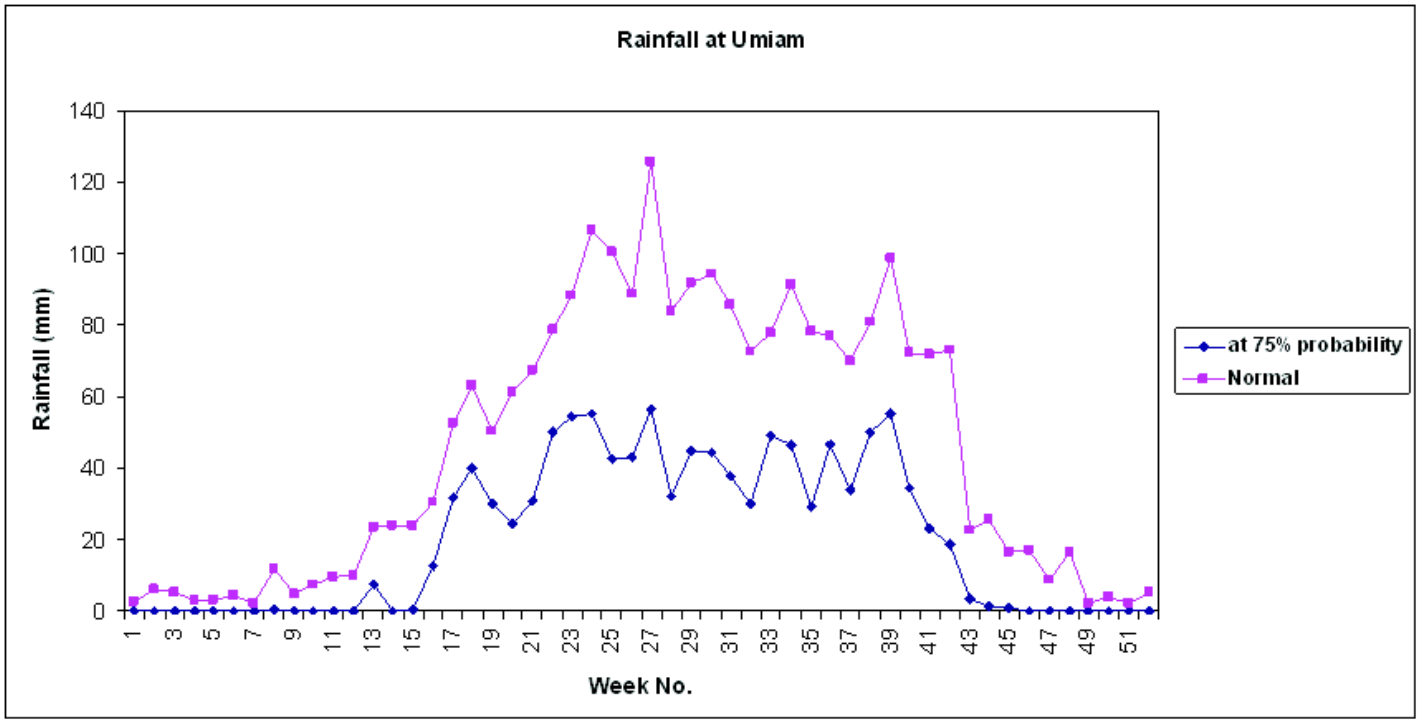


Figure 1: Weekly normal and Probable rainfall (75% probability) at Umiam, Ri-Bhoi, Meghalaya

Climatic normals for major crops

Crop	Optimum temperature requirement	Optimum moisture requirement
Rice	Sprouting: = 10^0C Flowering: 22-23^0C Grain formation: 20-21^0C	Rainfall of 125 cm is required during vegetative phase. Monthly rainfall of 100 and 200 mm is required for upland and lowland rice, respectively.
Maize	Mean temperature of 24^0C with night temperature above 15^0C	75 cm of rainfall in entire growth period
Lentil	Mean temperature of 18-30^0C	20 cm rainfall till fruiting.
Cotton	Sprouting: 15-20^0C Growth and development: 25-30^0C Minimum 200 frost free days ideal	Minimum rainfall of 50-65 cm is required
Groundnut	Sprouting: 14-16^0C Mean soil temperature of 23^0C is ideal for maximum production	Best yield obtained with about 60 cm rainfall but good crop can be harvested in 125-150 cm rainfall regions
Jute	Growth and development: 27-34^0C	170-200 cm of evenly distributed rainfall in entire crop period
Soybean	Sprouting: 5-40^0C Freezing air temperature as well as soil temperature above 33^0C affects crop growth very adversely	65 cm rainfall
Potato	Early growth and development: 24^0C Later stage: 18^0C	15-20 cm rainfall
Ginger Turmeric	Growth and development: 28-30^0C Growth and development: 24-28^0C Stops growth below 20^0C	Minimum 125-250 cm rainfall during growth period 70-225 cm rainfall
Rapeseed & Mustard	Germination: 20^0C Vegetative growth: 15-20^0C Flowering & pod formation: 25-27^0C	24-40 cm rainfall

Growing Months for Different Crops

The calendar, given below, indicates the months, one can expect to **GROW a** specific crop in farm.
It is only a guide and is accurate to our best estimation of weather factors; the best time for other intercultural operations may be adjusted based on prevailing weather at that time.

Crop	Mar	Apl	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
Kharif Rice		1	2	3	4	5	6	7	8	9		
Kharif Maize		1	2	3	4	5						
Groundnut			1	2	3	4	5	6	7			
Ginger	1	2	3	4	5	6	7	8	9	10		
Turmeric	1	2	3	4	5	6	7	8	9	10		
Lentil	7							1	2	3	4	5
Jute	2	3	4	5	6	7	8	9				1
Cotton	2	3	4	5	6	7	8	9	10			1
Spring Potato	3	4	5	6							1	2
Winter Potato							1	2	3	4	5	6
Rape & Mustard	7						1	2	3	4	5	6
Soybean			1	2	3	4	5	6				
Summer Vegetables	5	6	7	8	9	10			1	2	3	4
Winter Vegetables						1	2	3	4	5	6	7

(The Number indicates 'month'. E.g. 1 means first suitable month for growing a given crop)

Crop Varieties and Fertilizer Application

Crop	Recommended Varieties	Seed Rate (Kg/ha)	Fertilizer Application
Kharif Rice	Lumpnah 1, Shah Sarang 1, Bhalum-1, Bhalum-2, DR-92, Ngoba, NEH Megha Rice 1, NEH Megha Rice 2, Abore B	Direct Seeding: 80-100 Transplanting: 35-40	FYM: 10-20 t/ha N:P:K :: 60:60:40 kg/ha
Kharif Maize	RCM-76, RCM 1-1, RCM 1-3, Pop Corn, Baby Corn, Meghalaya Local Yellow, Meghalaya Local White, Vijay, Gasnga Safed 1, Krishna	10-20	FYM: 10-15 t/ha 65 kg Urea, 250 kg SSP, 67 kg MoP per ha
Ginger	Nadia, Poona, Riodegenerio, China, Wynad, Thingpui, Moran	100-120 (Rhizomes)	FYM: 6-8 t/ha 23 kg Urea, 250 kg SSP, 33 kg MoP per ha
Turmeric	Lakadong	100-120 (Rhizomes)	FYM: 6-8 t/ha 23 kg Urea, 250 kg SSP, 33 kg MoP per ha
Lentil	B 177, L 9-12, L 4147, PL 639, PL 4, VL 1, VL 125	30-40	FYM: 4-5 t/ha 75 kg DAP per ha
Jute	Capsularies: JRC 212, JRC 321, JRC 7447 Olitorius: JRO 632, JRO 524, JRO 7835	Capsularies Line Seeding: 6-8 Broadcasting: 10-11 Olitorius Line Seeding: 6-7 Broadcasting: 7-8	FYM: 6-8 t/ha 188 kg SSP, 50 kg MoP per ha (Capsularies) 156 kg SSP, 42 kg MoP per ha (Olitorius)

Crop	Recommended Varieties	Seed Rate (Kg/ha)	Fertilizer Application
Cotton	D 46 2-1, G-54 1, G-135 49	10-12	FYM: 8-10 t/ha 54 kg Urea, 250 kg SSP, 50 kg MoP per ha
Potato	Kufri Megha, Kufri Jyoti, Great Scott	180-200	FYM: 10 t/ha 133 kg Urea, 312 kg SSP, 83 kg MoP per ha
Soybean	Bragg, Ankur	70-75	FYM: 4-5 t/ha 45 kg Urea, 375 kg SSP, 70 kg MoP per ha
Rape & Mustard	Rape: M 27, TS 38 Mustard: Varuna, Krishna, TM 4	10-15	FYM: 3-4 t/ha 140 kg Urea, 220 kg SSP per ha

Kharif Rice

1. Primary Land Preparation:

12.4 mm	31.7 mm	40.2 mm	30.0 mm
16-22 Apl	23-29 Apl	30-6 May	7-13 May
21.9 °C	21.5 °C	21.3 °C	22.0 °C

Probable Rainfall (mm)
Dates
Mean Temperature (°C)

2. Final Land Preparation and Seed Sowing in Direct Seeded Rice:

31.7 mm	40.2 mm	30.0 mm	24.2 mm	31.0 mm	50.0 mm
23-29 Apl	30-6 May	7-13 May	14-20 May	21-27 May	28-3 Jun
21.5 °C	21.3 °C	22.0 °C	22.6 °C	22.7 °C	23.0 °C

3. Nursery Raising for Transplanted Rice:

40.2 mm	30.0 mm	24.2 mm	31.0 mm	50.0 mm
30-6 May	7-13 May	14-20 May	21-27 May	28-3 Jun
21.3 °C	22.0 °C	22.6 °C	22.7 °C	23.0 °C

4. Final Land Preparation and Transplanting of Rice in Main Field:

54.2 mm	55.1 mm	42.5 mm	43.1 mm	56.4 mm	32.1 mm
4-10 Jun	11-17 Jun	18-24 Jun	25-1 Jul	2-8 Jul	9-15 Jul
23.3 °C	23.5 °C	23.6 °C	24.0 °C	23.7 °C	23.6 °C

5. Harvesting Of Matured Rice:

3.6 mm	1.4 mm	4.2 mm	4.5 mm	1.4 mm	0.5 mm
22-28 Oct	29-4 Nov	5-11 Nov	12-18 Nov	19-25 Nov	26-2 Dec
20.0 °C	19.1 °C	18.3 °C	17.5 °C	16.9 °C	15.8 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Kharif Maize

1. Land Preparation and Manuring:

7.4 mm	0.0 mm	0.6 mm	12.4 mm	31.7 mm	40.2 mm	← Probable Rainfall (mm)
26-1 Apl	2-8 Apl	9-15 Apl	16-22 Apl	23-29 Apl	30-6 May	← Dates
19.6 °C	20.9 °C	21.7 °C	21.9 °C	21.5 °C	21.3 °C	← Mean Temperature (°C)

2. Seed Sowing:

12.4 mm	31.7 mm	40.2 mm	30.0 mm	24.2 mm
16-22 Apl	23-29 Apl	30-6 May	7-13 May	14-20 May
21.9 °C	21.5 °C	21.3 °C	22.0 °C	22.6 °C

3. Harvesting of Matured Cobs:

56.4 mm	32.1 mm	44.6 mm	44.4 mm	38.0 mm
2-8 Jul	9-15 Jul	16-22 Jul	23-29 Jul	30-5 Aug
23.7 °C	23.6 °C	24.2 °C	24.0 °C	24.1 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Groundnut / Peanut

1. Land Preparation and Manuring:

31.0 mm	50.0 mm	54.2 mm	55.1 mm	42.5 mm	43.1 mm
21-27 May	28-3 Jun	4-10 Jun	11-17 Jun	18-24 Jun	25-1 Jul
22.7 °C	23.0 °C	23.3 °C	23.5 °C	23.8 °C	24.0 °C

Probable Rainfall (mm)
Dates
Mean Temperature (°C)

2. Seed Sowing:

54.2 mm	55.1 mm	42.5 mm	43.1 mm	56.4 mm	32.1 mm
4-10 Jun	11-17 Jun	18-24 Jun	25-1 Jul	2-8 Jul	9-15 Jul
23.3 °C	23.5 °C	23.8 °C	24.0 °C	23.7 °C	23.6 °C

3. Harvesting of Matured and Dried Pods:

3.6 mm	1.4 mm	0.9 mm	0.0 mm	0.0 mm	0.0 mm
22-28 Oct	29-4 Nov	5-11 Nov	12-18 Nov	19-25 Nov	26-2 Dec
20.0 °C	19.1 °C	18.3 °C	17.5 °C	16.9 °C	15.8 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Ginger

1. Land Preparation, Making Raised Beds and Manuring:

0.6 mm	12.4 mm	31.7 mm	40.2 mm	30.0 mm	24.2 mm	← Probable Rainfall (mm)
9-15 Apl	16-22 Apl	23-29 Apl	30-6 May	7-13 May	14-20 May	← Dates
21.7 °C	21.9 °C	21.5 °C	21.3 °C	22.0 °C	22.6 °C	← Mean Temperature (°C)

2. Planting of Rhizomes:

31.7 mm	40.2 mm	30.0 mm	24.2 mm	31.0 mm	50.0 mm
23-29 Apl	30-6 May	7-13 May	14-20 May	21-27 May	28-3 Jun
21.5 °C	21.3 °C	22.0 °C	22.6 °C	22.7 °C	23.0 °C

3. Harvesting:

0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm
19-25 Nov	26-2 Dec	3-9 Dec	10-16 Dec	17-23 Dec	24-31 Dec
16.9 °C	15.8 °C	14.9 °C	14.4 °C	14.0 °C	13.0 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Turmeric

1. Land Preparation, Making Raised Beds and Manuring:

0.6 mm	12.4 mm	31.7 mm	40.2 mm	30.0 mm	24.2 mm	← Probable Rainfall (mm)
9-15 Apl	16-22 Apl	23-29 Apl	30-6 May	7-13 May	14-20 May	← Dates
21.7 °C	21.9 °C	21.5 °C	21.3 °C	22.0 °C	22.6 °C	← Mean Temperature (°C)

2. Planting of Rhizomes:

31.7 mm	40.2 mm	30.0 mm	24.2 mm	31.0 mm	50.0 mm
23-29 Apl	30-6 May	7-13 May	14-20 May	21-27 May	28-3 Jun
21.5 °C	21.3 °C	22.0 °C	22.6 °C	22.7 °C	23.0 °C

3. Harvesting:

0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm
19-25 Nov	26-2 Dec	3-9 Dec	10-16 Dec	17-23 Dec	24-31 Dec
16.9 °C	15.8 °C	14.9 °C	14.4 °C	14.0 °C	13.0 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Lentil

1. Land Preparation and Manuring:

34.4 mm	23.2 mm	18.6 mm	Probable Rainfall (mm)
1-7 Oct	8-14 Oct	15-21 Oct	Dates
22.0 °C	21.5 °C	21.0 °C	Mean Temperature (°C)

2. Sowing of Seeds:

34.4 mm	23.2 mm	18.6 mm	3.6 mm	1.4 mm
1-7 Oct	8-14 Oct	15-21 Oct	22-28 Oct	29-4 Nov
22.0 °C	21.5 °C	21.0 °C	20.0 °C	19.1 °C

3. Harvesting:

0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.5 mm	0.0 mm
15-21 Jan	22-28 Jan	29-4 Feb	5-11 Feb	12-18 Feb	19-25 Feb	26-4 Mar
12.1 °C	12.6 °C	13.8 °C	14.1 °C	15.4 °C	15.2 °C	16.4 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Jute (*Capsularies*)

1. Land Preparation and Manuring:

7.4 mm	0.0 mm	0.6 mm	12.4 mm	31.7 mm	40.2 mm	30.0 mm	24.2 mm
26-1 Apl	2-8 Apl	9-15 Apl	16-22 Apl	23-29 Apl	30-6 May	7-13 May	14-20 May
19.8 °C	20.9 °C	21.7 °C	21.9 °C	21.5 °C	21.3 °C	22.0 °C	22.6 °C

← Probable Rainfall (mm)
← Dates
← Mean Temperature (°C)

2. Sowing of *Capsularies*:

7.4 mm	0.0 mm	0.6 mm	12.4 mm	31.7 mm	40.2 mm	30.0 mm	24.2 mm
26-1 Apl	2-8 Apl	9-15 Apl	16-22 Apl	23-29 Apl	30-6 May	7-13 May	14-20 May
19.8 °C	20.9 °C	21.7 °C	21.9 °C	21.5 °C	21.3 °C	22.0 °C	22.6 °C

3. Harvesting:

46.4 mm	29.3 mm	46.7 mm	33.7 mm	49.8 mm	55.4 mm	34.4 mm	23.2 mm	18.6 mm	3.6 mm	1.4 mm
20-26 Aug	27-2 Sep	3-9 Sep	10-16 Sep	17-23 Sep	24-30 Sep	1-7 Oct	8-14 Oct	15-21 Oct	22-28 Oct	29-4 Nov
23.6 °C	23.8 °C	23.5 °C	23.3 °C	22.7 °C	21.8 °C	22.0 °C	21.5 °C	21.0 °C	20.0 °C	19.1 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Cotton

1. Land Preparation and Manuring:

7.4 mm	0.0 mm	0.6 mm	12.4 mm	31.7 mm	← Probable Rainfall (mm)
26-1 Apl	2-8 Apl	9-15 Apl	16-22 Apl	23-29 Apl	← Dates
19.8 °C	20.9 °C	21.7 °C	21.9 °C	21.5 °C	← Mean Temperature (°C)

2. Sowing of Seeds:

0.6 mm	12.4 mm	31.7 mm	40.2 mm
9-15 Apl	16-22 Apl	23-29 Apl	30-6 May
21.7 °C	21.9 °C	21.5 °C	21.3 °C

3. Harvesting:

34.4 mm	23.2 mm	18.6 mm	3.6 mm	1.4 mm	0.9 mm	0.0 mm	0.0 mm	0.0 mm
1-7 Oct	8-14 Oct	15-21 Oct	22-28 Oct	29-4 Nov	5-11 Nov	12-18 Nov	19-25 Nov	26-2 Dec
22.0 °C	21.5 °C	21.0 °C	20.0 °C	19.1 °C	18.3 °C	17.5 °C	16.9 °C	15.8 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Potato

Spring Potato

1. Land Preparation and Manuring:

0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.5 mm	0.0 mm
1-7 Jan	8-14 Jan	15-21 Jan	22-28 Jan	29-4 Feb	5-11 Feb	12-18 Feb	19-25 Feb	26-4 Mar
12.4 °C	12.1 °C	12.1 °C	12.6 °C	13.8 °C	14.1 °C	15.4 °C	15.2 °C	16.4 °C

Probable Rainfall (mm)
Dates
Mean Temperature (°C)

2. Seed Sowing:

0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.5 mm	0.0 mm	0.0 mm
8-14 Jan	15-21 Jan	22-28 Jan	29-4 Feb	5-11 Feb	12-18 Feb	19-25 Feb	26-4 Mar	5-11 Mar
12.1 °C	12.1 °C	12.6 °C	13.8 °C	14.1 °C	15.4 °C	15.2 °C	16.4 °C	17.4 °C

3. Harvesting:

56.4 mm	32.1 mm	44.6 mm	44.4 mm	38.0 mm
2-8 Jul	9-15 Jul	16-22 Jul	23-29 Jul	30-5 Aug
23.7 °C	23.6 °C	24.2 °C	24.0 °C	24.1 °C

Winter Potato

1. Land Preparation and Manuring:

46.7 mm	33.7 mm	49.8 mm	55.4 mm
3-9 Sep	10-16 Sep	17-23 Sep	24-30 Sep
23.5 °C	23.3 °C	22.7 °C	21.8 °C

2. Seed Sowing:

46.7 mm	33.7 mm	49.8 mm	55.4 mm	34.4 mm	23.2 mm
3-9 Sep	10-16 Sep	17-23 Sep	24-30 Sep	1-7 Oct	8-14 Oct
23.5 °C	23.3 °C	22.7 °C	21.8 °C	22.0 °C	21.5 °C

3. Harvesting:

0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm
3-9 Dec	10-16 Dec	17-23 Dec	24-31 Dec	1-7 Jan	8-14 Jan	15-21 Jan	22-28 Jan	29-4 Feb
14.9 °C	14.4 °C	14.0 °C	13.0 °C	12.4 °C	12.1 °C	12.1 °C	12.6 °C	13.8 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Rapeseed & Mustard

1. Land Preparation and Manuring:

46.7 mm	33.7 mm	49.8 mm	55.4 mm	34.4 mm	23.2 mm
3-9 Sep	10-16 Sep	17-23 Sep	24-30 Sep	1-7 Oct	8-14 Oct
23.5 °C	23.3 °C	22.7 °C	21.8 °C	22.0 °C	21.5 °C

Probable Rainfall (mm)
Dates
Mean Temperature (°C)

2. Seed Sowing:

49.8 mm	55.4 mm	34.4 mm	23.2 mm	18.6 mm
17-23 Sep	24-30 Sep	1-7 Oct	8-14 Oct	15-21 Oct
22.7 °C	21.8 °C	22.0 °C	21.5 °C	21.0 °C

3. Harvesting:

0.0 mm	0.0 mm	0.5 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm
5-11 Feb	12-18 Feb	19-25 Feb	26-4 Mar	5-11 Mar	12-18 Mar	19-25 Mar
14.1 °C	15.4 °C	15.2 °C	16.4 °C	17.4 °C	18.8 °C	19.4 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Soybean

1. Land Preparation and Manuring:

31.0 mm	50.0 mm	54.2 mm	55.1 mm	42.5 mm	43.1 mm
21-27 May	28-3 Jun	4-10 Jun	11-17 Jun	18-24 Jun	25-1 Jul
22.7 °C	23.0 °C	23.3 °C	23.5 °C	23.8 °C	24.0 °C

Probable Rainfall (mm)
Dates
Mean Temperature (°C)

2. Sowing of Seeds:

54.2 mm	55.1 mm	42.5 mm	43.1 mm	56.4 mm	32.1 mm
4-10 Jun	11-17 Jun	18-24 Jun	25-1 Jul	2-8 Jul	9-15 Jul
23.3 °C	23.5 °C	23.8 °C	24.0 °C	23.7 °C	23.6 °C

3. Harvesting:

34.4 mm	23.2 mm	18.6 mm	3.6 mm	1.4 mm
1-7 Oct	8-14 Oct	15-21 Oct	22-28 Oct	29-4 Oct
22.0 °C	21.5 °C	21.0 °C	20.0 °C	19.1 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Summer Vegetables

(Chillies, Capsicum, Brinjal, Tomato, Gourds, Cucurbits, French bean, Lettuce, Ladies Finger, Pumpkin etc.)

1. Land Preparation and Manuring:

0.9 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm
5-11 Nov	12-18 Nov	19-25 Nov	26-2 Dec	3-9 Dec	10-16 Dec	17-23 Dec	24-31 Dec	1-7 Jan	8-14 Jan	15-21 Jan	22-28 Jan	29-4 Feb
18.3 °C	17.5 °C	16.9 °C	15.8 °C	14.9 °C	14.4 °C	14.0 °C	13.0 °C	12.4 °C	12.1 °C	12.1 °C	12.6 °C	13.8 °C

2. Sowing of Seeds/ Transplanting of Seedlings:

0.0 mm	0.0 mm	0.5 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	7.4 mm	0.0 mm	0.6 mm
5-11 Feb	12-18 Feb	19-25 Feb	26-4 Mar	5-11 Mar	12-18 Mar	19-25 Mar	26-1 Apl	2-8 Apl	9-15 Apl
14.1 °C	15.4 °C	15.2 °C	16.4 °C	17.4 °C	18.8 °C	19.4 °C	19.8 °C	20.9 °C	21.7 °C

3. Harvesting:

24.2 mm	31.0 mm	50.0 mm	54.2 mm	55.1 mm	42.5 mm	43.1 mm	56.4 mm	32.1 mm	44.6 mm	44.4 mm	38.0 mm
14-20 May	21-27 May	28-3 Jun	4-10 Jun	11-17 Jun	18-24 Jun	25-1 Jul	2-8 Jul	9-15 Jul	16-22 Jul	23-29 Jul	30-5 Aug
22.6 °C	22.7 °C	23.0 °C	23.3 °C	23.5 °C	23.8 °C	24.0 °C	23.7 °C	23.6 °C	24.2 °C	24.0 °C	24.1 °C

30.2 mm	49.1 mm	46.4 mm	29.3 mm
6-12 Aug	13-19 Aug	20-26 Aug	27-2 Aug
24.1 °C	23.7 °C	23.6 °C	23.8 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Winter Vegetables

(Cabbage, Cauliflower, Knolkhol, Carrot, Radish, Coriander, Turnip, Peas, Garlic, Onion, Pallak etc.)

1. Land Preparation and Manuring:

46.7 mm	33.7 mm	49.8 mm	55.4 mm	34.4 mm	23.2 mm
3-9 Sep	10-16 Sep	17-23 Sep	24-30 Sep	1-7 Oct	8-14 Oct
23.5 °C	23.3 °C	22.7 °C	21.8 °C	22.0 °C	21.5 °C

Probable Rainfall (mm)
Dates
Mean Temperature (°C)

2. Sowing of Seeds/ Transplanting of Seedlings:

49.8 mm	55.4 mm	34.4 mm	23.2 mm	18.6 mm	3.6 mm	1.4 mm
17-23 Sep	24-30 Sep	1-7 Oct	8-14 Oct	15-21 Oct	22-28 Oct	29-4 Nov
22.7 °C	21.8 °C	22.0 °C	21.5 °C	21.0 °C	20.0 °C	19.1 °C

3. Harvesting:

0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm
19-25 Nov	26-2 Dec	3-9 Dec	10-16 Dec	17-23 Dec	24-31 Dec	1-7 Jan	8-14 Jan	15-21 Jan	22-28 Jan
16.9 °C	15.8 °C	14.9 °C	14.4 °C	14.0 °C	13.0 °C	12.4 °C	12.1 °C	12.1 °C	12.6 °C

The Time Fixation is based on Optimum Moisture availability and Temperature Range for Growth and Development.

Address of institutes/agencies/companies for obtaining input materials locally

Kind of resource		Agency
Fertilizer	1	M/s Lyngdoh Enterprise, Shillong-02
	2	M/s Greens, Guwahati-22
	3	Veritas Trading Agency, Umsohsun, Shillong
	4	Assam Agro-Industries Development Corporation Ltd., Ulubari, Guwahati-7 (Ph. 0361-2548241, 2548242)
	5	Meghalaya State Cooperative Marketing & Consumer Federation (Mecofed), Lumdeingri, Shillong
Pesticides, Bio-pesticides	1	M/s Agros India, Aathgaon, Guwahati (Ph. 09864056324)
	2	M/s Greens, Guwahati-22
	3	M/s Peak Chemicals & Industries Ltd. Siliguri, West Bengal
	4	M/s Spark Enterprise, Mawlai (Ph. 9863118315)
	5	M/s Stanley Roy Constructions, Mawlai, Shillong-8
	6	Veritas Trading Agency, Umsohsun, Shillong
	7	M/s North Eastern Agency, Shillong
Seeds	1	Assam Seed Corporation Ltd. Mathura Nagar, Guwahati (Ph. 0361-2560529)
	2	ICAR Research Complex for NEH Region
	3	Krishi Vigyan Kendra, ICAR, Umroi Road, Ri Bhoi, Meghalaya
	4	M/s Agros India, Aathgaon, Guwahati (Ph. 09864056324)
	5	M/s Spark Enterprise, Mawlai (Ph. 9863118315)
	6	M/s Enbee Enterprise, Iewduh, Shillong
Polyhouse materials	1	M/s Agros India, Aathgaon, Guwahati (Ph. 09864056324)
	2	M/s Spark Enterprise, Mawlai (Ph. 9863118315)