



CSAUAT, KANPUR



IMD, NEW DELHI



AICRPAM, KANPUR



AGRO-CLIMATIC ZONE



Middle Gangetic
Plain Region



MAIN CROPS



Paddy, Wheat, Maize,
Pulses, Oilseeds (Mustard),
Vegetables



SOIL TYPE



Alluvial Soil
(Sandy Loam to
Clayey Loam)



PADDY



WHEAT



MAIZE



MUSTARD



POTATO



VEGETABLES



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CROP WEATHER CALENDAR AMFU KANPUR, U.P.

A Scientific Guide for Smart Farming



DR. NAUSHAD KHAN



MR. AJAY KUMAR



MR. SHIVAM MISHRA



DR. C.B. SINGH

DEVELOPED BY

Chandra Shekhar Azad University of
Agriculture & Technology, Kanpur (U.P.)

Under Gramin Krishi Mausam Sewa (GKMS) &
AICRP on Agrometeorology





CSAUAT, KANPUR

CROP WEATHER CALENDAR

of

KANPUR NAGAR, UTTAR PRADESH



IMD, NEW DELHI



AICRPAM



AGRO-CLIMATIC ZONE

Middle Gangetic
Plain Region



MAIN CROPS

Paddy, Wheat, Maize,
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SOIL TYPE

Alluvial Soil
(Sandy Loam to
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PADDY



WHEAT



MAIZE



OILSEEDS
(MUSTARD)



PULSES



VEGETABLES



Developed by

CHANDRA SHEKHAR AZAD UNIVERSITY OF AGRICULTURE & TECHNOLOGY, KANPUR (U.P.)

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Crop-weather calendar of Rice (*Oryza Sativa L.*)



Plan Well



Sow Smart



Harvest Better



CLIMATIC
NORMAL

Crop- Rice										Duration – 120 – 135 (Days)												
Month	June					July				August				September				October				
Std. week	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
 Tmax (°C)	42.2	34.7	33.8	33.3	33.9	34.9	35.6	33.0	33.4	33.5	32.2	35.0	33.5	32.9	33.6	34.3	33.7	35.4	31.7	31.4	31.5	30.4
 Tmin (°C)	29.8	27.6	25.9	26.5	26.0	27.2	28.9	26.0	26.6	26.4	25.6	25.9	24.8	25.5	24.6	23.7	22.1	20.5	17.3	14.5	15.2	14.6
 RHm (%)	48	79	89	92	92	80	80	88	81	81	87	80	82	92	87	85	82	77	83	83	93	92
 RHe (%)	29	69	72	68	71	65	57	73	65	70	79	64	67	72	69	56	58	42	42	37	41	45
 SS (hr./day)	9.6	4.3	4.3	3.0	2.2	7.0	7.0	2.1	2.8	3.2	2.6	2.6	5.6	2.2	3.6	7.5	7.3	9.1	7.5	8.8	2.3	0.2
 Rain (mm/week)	0.0	128.6	106.8	40.6	47.4	65.0	8.1	38.0	0.0	16.4	128.0	0.0	25.6	79.2	45.0	0.0	15.7	0.0	3.4	0.0	0.6	32.2



PHENOPHASE
WISE WEATHER
FOR BETTER
YIELD

						
	Sowing	Transplanting	Active tillering	Flowering	Grain filling	Physiological maturity
	Sowing to Emergence (0–20 Days)		Transplanting (20–35 Days)		Active tillering (35–60 Days)	
	Flowering (60–80 Days)		Grain filling (80–110 Days)		Physiological maturity (110–135 Days)	
Tmax (°C)	30–35°C		28–32°C		30–34°C	
Tmin (°C)	22–25°C		22–26°C		20–25°C	
RHm (%)	85–95%		85–95%		80–90%	
RHe (%)	70–80%		70–80%		65–75%	
SS (hr./day)	6–7 hrs/day		4–5 hrs/day		5–6 hrs/day	
Rainfall (mm)	30–50 mm		40–60 mm		30–50 mm	
					20–30 mm	
					<10 mm (dry for harvest)	

CONGENIAL
WEATHER FOR
PEST/DISEASES



	Stem borer	Tmax: 28–35°C - High humidity: 80–90% - Cloudy weather with intermittent rain Vegetative to panicle initiation (Tillering to Booting stage)
	Gundhi bug	Tmax: 25–30°C - RH: 60–75% - Dry, cloudy weather with little rain (Flowering to dough stage)
	Leaf roller	Tmax: 30–35°C - High RH (>85%) - Cloudy, humid weather (Tillering to early panicle emergence)
	Phyllody (Mycoplasma)	Spread by leafhopper under warm and dry conditions (Any stage; appears at flowering)
	Alternaria Leaf Spot	RH >80% Prolonged leaf wetness Temp: 25–30°C (Vegetative to flowering)
	Sheath blight (<i>Rhizoctonia solani</i>)	Tmin: 20–25°C - RH: >90% - Continuous cloudy/rainy days - Poor air circulation (Tillering to heading)
	Leaf Roller & Capsule Borer	Tmax: 30–35°C - RH: 60–70% Intermittent rainfall (Flowering to capsule stage)



Timely Sowing



Balanced Weather



Healthy Crop



Higher Yield

Crop-weather calendar of Wheat (*Triticum Aestivum*)



Plan Well



Sow Timely



Harvest Better



CLIMATIC
NORMAL

Crop – Wheat (Timely sown)

Duration – 125–130 Days

Month	November						December				January				February				March				
Std. week	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13				
 Tmax (°C)	26.8	25.2	24.2	24.6	22.7	19.9	16.8	16.4	12.5	17.7	23.1	21.5	26.0	26.2	25.5	26.4	30.0	30.8	35.8				
 Tmin (°C)	11.4	12.7	13.2	8.4	7.6	8.3	10.0	5.5	5.3	5.1	9.0	9.3	10.1	11.6	13.5	10.8	13.3	14.0	20.0				
 RHm (%)	94	94	92	94	90	95	95	96	92	95	92	88	92	87	83	73	78	75	67				
 RHe (%)	54	61	65	46	47	69	81	72	77	63	55	54	48	45	51	40	36	37	31				
 Rain (mm/week)	0.0	6.6	11.8	0.0	0.0	0.0	11.2	0.0	0.0	0.0	0.0	0.0	26.8	0.6	32.2	0.0	0.0	0.0	0.0				



PHENOPHASE
WISE WEATHER
FOR BETTER
YIELD

1 Sowing & emergence	2 Emergence to tillering	3 Tillering to heading	4 Heading to grain filling	5 Grain formation to maturity	6 Physiological Maturity
Tmax: 24–28°C	20–25°C	20–25°C	22–26°C	25–30°C	28–32°C
Tmin: 12–16°C	10–15°C	8–14°C	10–15°C	12–18°C	14–20°C
RHm: 80–90%	75–85%	70–80%	65–75%	60–70%	50–60%
RHe: 60–70%	55–65%	50–60%	45–55%	40–50%	30–40%
Rain: 10–15 mm	5–10 mm	< 10 mm	< 10 mm	< 5 mm (minimal)	Nil (dry weather for harvest)

CONGENIAL
WEATHER FOR
PEST/DISEASES



	Yellow Rust (<i>Puccinia striiformis</i>)	Tmax: 10–20°C • Tmin: 7–10°C • High RH >85% • Prolonged dew/fog, cloudy weather	→ Early vegetative to booting stage (Dec–Feb)
	Brown Rust (<i>Puccinia triticina</i>)	Tmax: 20–25°C • RH: 60–70% • Clear, warm days followed by cool nights • Light dew	→ Tillering to grain filling stage
	Loose Smut (<i>Ustilago tritici</i>)	Temp: 18–24°C • High soil and air moisture during flowering • Infected seed is major source	→ Infection at flowering stage; symptoms appear at ear emergence



Timely Sowing • Balanced Weather • Healthy Crop • Higher Yield

Crop-weather calendar of Maize (*Zea Mays*)



Plan Well



Sow Smart



Harvest Better



CLIMATIC
NORMAL

Crop – Maize (Kharif)

Duration – 110–120 Days

Month	June				July					August				September			
Std. week	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
🌡 Tmax (°C)	39.9	42.2	34.7	33.8	33.3	33.9	34.9	35.6	33.0	33.4	33.5	32.2	35.0	33.5	32.9	33.6	34.3
🌡 Tmin (°C)	24.8	29.8	27.6	25.9	26.5	26.0	27.2	28.9	26.0	26.6	26.4	25.6	25.9	24.8	25.5	24.6	23.7
💧 RHm (%)	52	48	79	89	92	92	80	80	88	81	81	87	80	82	92	87	85
🌿 RHe (%)	29	29	69	72	68	71	65	57	73	65	70	79	64	67	72	69	56



PHENOPHASE
WISE WEATHER
FOR BETTER
YIELD

1 Sowing to emergence



Tmax	28–32°C
Tmin	20–24°C
RHm	85–90%
RHe	70–80%
Rain	40–60 mm

2 Knee height



Tmax	30–35°C
Tmin	22–26°C
RHm	80–85%
RHe	65–75%
Rain	30–50 mm

3 Tasseling



Tmax	30–35°C
Tmin	22–26°C
RHm	75–80%
RHe	60–70%
Rain	20–40 mm

4 Silk formation



Tmax	30–34°C
Tmin	22–26°C
RHm	75–80%
RHe	60–70%
Rain	20–30 mm

5 Cob filling



Tmax	28–32°C
Tmin	20–24°C
RHm	70–75%
RHe	55–65%
Rain	15–25 mm

6 Physiological maturity



Tmax	25–30°C
Tmin	18–22°C
RHm	65–70%
RHe	50–60%
Rain	<10 mm (dry harvest)

CONGENIAL
WEATHER FOR
PEST/DISEASES



Stem Borer
(*Chilo partellus*)

Tmax: 30–35°C • RH: 70–80% • Frequent light rain
(Early vegetative to tasseling)



Early vegetative to tasseling



Fall Armyworm
(*Spodoptera frugiperda*)

Tmax: 28–34°C • RH: 70–80% • Sudden showers after dry spells
(Emergence to cob formation)



Emergence to cob formation



Turcicum Leaf Blight
(*Exserohilum turcicum*)

Tmax: 20–30°C • RH >90% • Frequent fog or dew
(Vegetative to reproductive)



Vegetative to reproductive



Downy Mildew

Tmax: 22–28°C • RH >90% • Cloudy, wet spells
(Seedling stage)



Seedling stage



Stem Borer
(*Chilo partellus*)

Tmax: 30–35°C • RH: 70–80% • Frequent light rain
(Early vegetative to tasseling)



Early vegetative to tasseling



Timely Sowing



Balanced Weather



Healthy Crop



Higher Yield

Crop-weather calendar of Maize (*Zea Mays*)



Plan Well



Sow Smart



Harvest Better



CLIMATIC
NORMAL

Crop – Maize (Zaid)			Duration – 110–120 Days																
Month	February		March					April				May				June			
Std. week	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
 Tmax (°C)	26.2	25.5	26.4	30.0	30.8	35.8	37.4	38.8	39.0	40.1	39.7	36.9	43.0	41.2	44.8	43.0	44.8	40.2	32.7
 Tmin (°C)	11.6	13.5	10.8	13.3	14.0	20.0	18.6	20.6	23.0	22.0	21.2	25.2	26.4	28.5	29.4	27.5	30.9	28.5	25.8
 RHm (%)	87	83	73	78	75	67	50	52	41	42	36	63	48	58	45	42	35	62	81
 RHe (%)	45	51	40	36	37	31	20	28	21	18	16	39	20	33	19	21	17	39	74



PHENOPHASE
WISE WEATHER
FOR BETTER
YIELD

1 Sowing to emergence	2 Knee height	3 Tasseling	4 Silk formation	5 Cob filling	6 Physiological maturity
Tmax: 28–32°C	30–35°C	30–35°C	30–34°C	28–32°C	25–30°C
Tmin: 15–20°C	18–22°C	20–24°C	20–24°C	18–22°C	16–20°C
RH: 70–80%	65–75%	60–70%	60–70%	55–65%	50–60%
RHe: 50–60%	45–55%	40–50%	40–50%	35–45%	30–40%
Rain: 20–30 mm	15–25 mm	10–15 mm	10–15 mm	5–10 mm	< 5 mm (dry at harvest)

CONGENIAL
WEATHER FOR
PEST/DISEASES



	Stem Borer (<i>Chilo partellus</i>)	Tmax: 30–35°C • RH: 60–70% • Intermittent showers + cloudy days (Early vegetative to tasseling)	→	Early vegetative to tasseling
	Fall Armyworm (<i>Spodoptera frugiperda</i>)	Tmax: 28–34°C • RH: 60–80% • Bright, dry days followed by rain (Emergence to cob formation)	→	Emergence to cob formation
	Turcicum Leaf Blight (<i>Exserohilum turcicum</i>)	Tmax: 20–30°C • High humidity >90% • Frequent dew/fog (Vegetative to reproductive)	→	Vegetative to reproductive
	Maydis Leaf Blight (<i>Bipolaris maydis</i>)	Warm and moist conditions • RH >85% (Vegetative stage)	→	Vegetative stage
	Downy Mildew	RH >90% • Low temperatures (18–22°C) • Prolonged dew (Young seedling stage)	→	Young seedling stage



Timely Sowing



Balanced Weather



Healthy Crop



Higher Yield

Crop-weather calendar of Mustard (*Brassica spp.*)



Plan Well



Sow Timely



Harvest Better



CLIMATIC
NORMAL

Crop - Mustard								Duration - 125-130 Days											
Month	October			November				December			January					February			
Std. week	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9
Tmax (°C)	31.4	31.5	30.4	27.5	26.8	25.2	25.2	24.2	24.6	22.7	19.9	16.4	12.5	17.7	23.1	21.5	26.0	26.2	25.5
Tmin (°C)	14.5	15.2	14.6	12.9	11.4	12.7	13.2	8.4	7.6	8.3	10.0	5.5	5.3	5.1	9.0	9.3	10.1	11.6	13.5
RHm (%)	83	93	92	93	94	94	92	92	94	90	95	95	92	95	92	88	92	87	83
RHe (%)	37	41	45	62	54	61	65	46	47	47	69	81	77	63	55	54	48	45	51
Rain (mm/week)	0.0	0.0	0.0	0.0	0.0	6.6	11.8	0.0	0.0	0.0	11.2	0.0	0.0	0.0	0.0	26.8	0.0	0.6	32.2



PHENOPHASE
WISE WEATHER
FOR BETTER
YIELD

1 Sowing & seedling establishment (15-21 days)	2 Vegetative growth (25-30 days)	3 Flowering (15-20 days)	4 Pod development (25-30 days)	5 Maturity (15-30 days)	
Tmax: 30-35°C	25-30°C	20-25°C	18-24°C	20-25°C	25-30°C
Tmin: 18-22°C	12-16°C	8-12°C	8-10°C	10-15°C	12-18°C
RH: 80-85%	75-80%	70-80%	70-75%	65-70%	60-65%
RHe: 60-70%	55-65%	50-60%	50-55%	45-50%	40-50%
Rain: 5-10 mm	< 5 mm	< 5 mm	Nil-2 mm	2-5 mm	Nil

CONGENIAL
WEATHER FOR
PEST/DISEASES



	Aphids (<i>Lipaphis erysimi</i>)	Tmax: 20-25°C • RH: 70-80% • Cloudy weather with light drizzle (Flowering to seed formation)	→	Flowering to seed formation
	White Rust (<i>Albugo candida</i>)	Tmin: 10-15°C • RH: >90% • Frequent dew/fog, wet leaves (Flowering to pod formation)	→	Flowering to pod formation
	Downy Mildew	Cool, moist conditions • RH >85% • Intermittent light rains (Vegetative to early flowering)	→	Vegetative to early flowering
	Alternaria Blight (<i>Alternaria brassicae</i>)	Tmax: 20-28°C • RH >85% • Prolonged cloudy weather (Pod formation to maturity)	→	Pod formation to maturity



Timely Sowing • Balanced Weather • Healthy Crop • Higher Yield



Crop-weather calendar of Groundnut (*Arachis hypogaea* L.)



Plan Well



Sow Smart



Harvest Better



CLIMATIC
NORMAL

Crop – Groundnut (Kharif)

Duration – 120–130 Days

Month	June					July				August					September				October			
Std. week	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
 Tmax (°C)	42.2	34.7	33.8	33.3	33.9	34.9	35.6	33.0	33.4	33.5	32.2	35.0	33.5	32.9	33.6	34.3	33.7	35.4	31.7	31.4	31.5	30.4
 Tmin (°C)	29.8	27.6	25.9	26.5	26.0	27.2	28.9	26.0	26.6	26.4	25.6	25.9	24.8	25.5	24.6	23.7	22.1	20.5	17.3	14.5	15.2	14.6
 RHm (%)	48	79	89	92	92	80	80	88	81	81	87	80	82	92	87	85	82	77	83	83	93	92
 RHe (%)	29	69	72	68	71	65	57	73	65	70	79	64	67	72	69	56	58	42	42	37	41	45
 SS (hr./day)	9.6	4.3	4.3	3.0	2.2	7.0	7.0	2.1	2.8	3.2	2.6	2.6	5.6	2.2	3.6	7.5	7.3	9.1	7.5	8.8	2.3	0.2
 Rain (mm/week)	0.0	128.6	106.8	40.6	47.4	65.0	8.1	38.0	0.0	16.4	128.0	0.0	25.6	79.2	45.0	0.0	15.7	0.0	3.4	0.0	0.0	0.0



PHENOPHASE
WISE WEATHER
FOR BETTER
YIELD

1 Weather Parameter



Tmax (°C)	28–32°C
Tmin (°C)	20–24°C
RHm (%)	85–90%
RHe (%)	70–75%
SS (hr./day)	5–6 hrs
Rainfall (mm)	30–50 mm

2 Sowing to Emergence



Tmax (°C)	28–32°C
Tmin (°C)	20–24°C
RHm (%)	85–90%
RHe (%)	70–75%
SS (hr./day)	5–6 hrs
Rainfall (mm)	30–50 mm

3 Vegetative Growth



Tmax (°C)	28–32°C
Tmin (°C)	22–25°C
RHm (%)	80–85%
RHe (%)	65–70%
SS (hr./day)	6–7 hrs
Rainfall (mm)	25–40 mm

4 Flowering & Pegging



Tmax (°C)	26–30°C
Tmin (°C)	22–24°C
RHm (%)	75–80%
RHe (%)	60–70%
SS (hr./day)	6–7 hrs
Rainfall (mm)	20–30 mm

5 Pod Development



Tmax (°C)	25–30°C
Tmin (°C)	20–22°C
RHm (%)	70–80%
RHe (%)	55–65%
SS (hr./day)	7–8 hrs
Rainfall (mm)	15–25 mm

6 Seed Filling



Tmax (°C)	24–28°C
Tmin (°C)	18–22°C
RHm (%)	65–75%
RHe (%)	50–60%
SS (hr./day)	8 hrs
Rainfall (mm)	5–10 mm

7 Maturity



Tmax (°C)	28–32°C
Tmin (°C)	18–22°C
RHm (%)	60–70%
RHe (%)	45–55%
SS (hr./day)	8–9 hrs
Rainfall (mm)	<5 mm (dry needed)

CONGENIAL
WEATHER FOR
PEST/DISEASES



Leaf Miner
(*Liriomyza* spp.)

Tmax: 28–32°C • RH: 70–80% • Intermittent showers (Vegetative to flowering)

→ Vegetative to flowering



White Grub

Tmax: 28–35°C • Moist soils, cloudy weather (Sowing to early pegging)

→ Sowing to pegging



Tikka Leaf Spot

RH >85% • Tmax: 26–30°C • Cloudy, moist conditions (Vegetative to pod filling)

→ Vegetative to pod filling



Collar Rot / Stem Rot

Soil temp: 28–32°C • Waterlogging or poorly drained soil (Germination to early pegging)

→ Germination to early pegging



Rust
(*Puccinia arachidis*)

RH: 80–90% • Temp: 25–30°C • Foggy/cloudy mornings (Flowering to seed filling)

→ Flowering to seed filling



Timely Sowing •



Balanced Weather •



Healthy Crop •



Higher Yield

Crop-weather calendar of Groundnut (*Arachis hypogaea* L.)



Plan Well



Sow Smart



Harvest Better



CLIMATIC
NORMAL

Crop – Groundnut (Zaid)				Duration – 80–85 Days												
Month	February			March				April				May				
Std. week	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
🌡️ Tmax (°C)	26.7	26.2	25.5	26.4	30.0	30.8	35.8	37.4	38.8	39.0	40.1	39.7	36.9	43.0	41.2	44.8
🌡️ Tmin (°C)	11.1	11.6	13.5	10.8	13.3	14.0	20.0	18.6	20.6	23.0	22.0	21.2	25.2	26.4	28.5	29.4
💧 RHm (%)	83	87	83	73	78	75	67	50	52	41	42	36	63	48	58	45
🌱 RHe (%)	50	45	51	40	36	37	31	20	28	21	18	16	39	20	33	19
☀️ SS (hr./day)	8.0	7.1	8.0	7.1	5.8	5.9	7.3	8.8	8.3	7.6	7.0	6.9	10.7	9.8	9.9	9.5
☁️ Rain (mm/week)	0.0	0.0	0.0	0.0	6.4	11.6	39.2	0.0	0.0	0.0	14.6	75.8	0.0	0.0	9.0	0.8



PHENOPHASE
WISE WEATHER
FOR BETTER
YIELD

1 Sowing to Emergence	2 Vegetative Growth	3 Flowering & Pegging	4 Pod Development	5 Seed Filling	6 Maturity
Tmax: 32–36°C	34–38°C	30–35°C	30–34°C	28–32°C	32–36°C
Tmin: 20–24°C	22–26°C	22–25°C	20–24°C	18–22°C	20–24°C
RHm: 60–70%	55–65%	60–70%	55–65%	50–60%	45–55%
RHe: 40–50%	35–45%	40–50%	35–45%	30–40%	25–35%
SS: 8–9 hrs	9–10 hrs	8–9 hrs	8–9 hrs	9–10 hrs	10–11 hrs
Rain: 10–15 mm	5–10 mm	5–10 mm	2–5 mm	<5 mm	Nil

CONGENIAL
WEATHER FOR
PEST/DISEASES



	Leaf Miner	Tmax: 30–38°C RH: 55–70% Bright sunny days with occasional humidity (Vegetative to flowering)
	White Grub / Cutworm	Moist soils after irrigation or summer rain Temp: 30–35°C (Sowing to early pegging)
	Tikka Leaf Spot	Tmax: 28–32°C RH: >70% Intermittent irrigation or summer showers (Vegetative to pod development)
	Collar Rot / Stem Rot	Soil temp: 28–32°C Waterlogging or poorly drained soil (Germination to early pegging)
	Rust (Puccinia)	RH: 75–90% Temp: 25–30°C Foggy / cloudy mornings (Flowering to seed filling)



Timely Sowing



Balanced Weather



Healthy Crop



Higher Yield



Crop-weather calendar of Black Gram (*Vigna mungo*)



Plan Well



Sow Smart



Harvest Better



CLIMATIC
NORMAL

Crop – Black Gram (Zaid)								Duration – 75–80 Days				
Month	February			March				April				
Std. week	7	8	9	10	11	12	13	14	15	16	17	18
 Tmax (°C)	26.7	26.2	25.5	26.4	30.0	30.8	35.8	37.4	38.8	39.0	40.1	39.7
 Tmin (°C)	11.1	11.6	13.5	10.8	13.3	14.0	20.0	18.6	20.6	23.0	22.0	21.2
 RHm (%)	83	87	83	73	78	75	67	50	52	41	42	36
 RHe (%)	50	45	51	40	36	37	31	20	28	21	18	16
 SS (hr./day)	8.0	7.1	8.0	7.1	5.8	5.9	7.3	8.8	8.3	7.6	7.0	6.9
 Rain (mm/week)	0.0	0.0	0.0	0.0	6.4	11.6	39.2	0.0	0.0	0.0	14.6	75.8



Phenophase wise weather for better yield	Sowing to Emergence	Vegetative Growth	Flowering	Pod Formation	Seed Development	Maturity
Tmax (°C)	28–32°C	30–34°C	32–36°C	30–34°C	30–34°C	34–38°C
Tmin (°C)	22–25°C	22–26°C	22–25°C	20–24°C	20–22°C	22–26°C
RHm (%)	60–70%	55–65%	60–70%	55–65%	50–60%	45–55%
RHe (%)	40–50%	35–45%	40–50%	35–45%	30–40%	25–35%
SS (hr./day)	8–9	9–10	8–9	8–9	9–10	10–11
Rainfall (mm)	10–20 mm	5–10 mm	5–10 mm	5–10 mm	<5 mm	Nil

CONGENIAL WEATHER FOR PEST/DISEASES 		Whitefly	Tmax: 32–38°C RH: 50–60% Dry weather (Vegetative to flowering)
		Thrips & Aphids	Tmax: 30–35°C RH: 60–70% Moist but not rainy conditions (Vegetative to pod formation)
		YMV (Yellow Mosaic Virus)	Spread by whitefly; hot and dry conditions High during 30–38°C Tmax & low RH (Any stage)
		Powdery Mildew	Tmax: 28–32°C RH >70% Dry days followed by light showers (Pod development to maturity)
		Cercospora Leaf Spot	Tmax: 28–34°C RH >80% Cloudy weather + high leaf wetness (Vegetative to pod formation)



Timely Sowing



Balanced Weather



Healthy Crop



Higher Yield



Crop-weather calendar of Black Gram (*Vigna mungo*)



Plan Well

Sow Smart

Harvest Better

**CLIMATIC
NORMAL**

Crop – Black Gram (Kharif)								Duration – 95–100 Days						
Month	July			August				September				October		
Std. week	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Tmax (°C)	26.7	26.2	25.5	26.4	30.0	30.8	35.8	37.4	38.8	39.0	40.1	39.7	35.4	31.7
Tmin (°C)	11.1	11.6	13.5	10.8	13.3	14.0	20.0	18.6	20.6	23.0	22.0	21.2	20.5	17.3
RHm (%)	83	87	83	73	78	75	67	50	52	41	42	36	77	83
RHe (%)	50	45	51	40	36	37	31	20	28	21	18	16	42	42
SS (hr./day)	8.0	7.1	8.0	7.1	5.8	5.9	7.3	8.8	8.3	7.6	7.0	6.9	9.1	7.5
Rain (mm/week)	0.0	0.0	0.0	0.0	6.4	11.6	39.2	0.0	0.0	0.0	14.6	75.8	0.0	3.4

**PHENOPHASE
WISE WEATHER
FOR BETTER
YIELD**

1 Sowing to Emergence	2 Vegetative Growth	3 Flowering	4 Pod Formation	5 Seed Development	6 Maturity
28–32°C	30–34°C	28–32°C	26–30°C	25–30°C	28–32°C
22–25°C	22–26°C	22–24°C	20–22°C	20–22°C	22–24°C
85–90%	80–85%	85–90%	80–85%	75–80%	70–75%
70–80%	65–75%	70–80%	65–75%	60–70%	55–65%
4–5	3–5	4–5	5–6	6–7	7–8
40–60 mm	30–50 mm	20–30 mm	15–25 mm	10–20 mm	<10 mm (dry needed)

**CONGENIAL
WEATHER FOR
PEST/DISEASES**

Whitefly (YMV vector)	Tmax: 28–35°C RH: 60–70% Dry spells during rainy season (Any stage)
Thrips & Aphids	Tmax: 28–32°C RH: 65–80% Intermittent rains (Vegetative to flowering)
Cercospora Leaf Spot	RH >85% Leaf wetness >10 hrs Tmax: 26–30°C (Vegetative to pod filling)
Powdery Mildew	Warm days + humid nights Tmax: 28–32°C (Pod filling to maturity)
Root Rot / Collar Rot	Saturated soil, poor drainage Temp: 28–32°C (Sowing to early growth)

Timely Sowing | Balanced Weather | Healthy Crop | Higher Yield



Crop-weather calendar of Green Gram (*Vigna radiata* L.)



Plan Well



Sow Smart



Harvest Better



Crop – Green Gram (Zaid)				Duration – 65–70 Days						
Month	February			March				April		
Std. week	11	12	13	14	15	16	17	18	19	20
Tmax (°C)	30.0	30.8	35.8	37.4	38.8	39.0	40.1	39.7	36.9	43.0
Tmin (°C)	13.3	14.0	20.0	18.6	20.6	23.0	22.0	21.2	25.2	26.4
RHm (%)	78	75	67	50	52	41	42	36	63	48
RHe (%)	36	37	31	20	28	21	18	16	39	20
SS (hr./day)	8.1	7.6	6.8	6.5	6.9	7.7	8.2	9.0	7.5	8.4
Rain(mm/week)	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0



	Sowing to Emergence	Vegetative Growth	Flowering	Pod Formation	Seed Filling	Maturity
Tmax (°C)	32–36°C	34–38°C	32–36°C	30–34°C	28–32°C	34–38°C
Tmin (°C)	20–24°C	22–26°C	22–24°C	20–22°C	18–22°C	22–26°C
RHm (%)	55–65%	50–60%	55–65%	50–60%	45–55%	40–50%
RHe (%)	35–45%	30–40%	35–45%	30–40%	25–35%	20–30%
SS (hr./day)	8–9	9–10	8–9	9–10	9–10	10–11
Rainfall (mm)	5–15 mm (mostly irrigated crop)	5–10 mm	5–10 mm	<5 mm	<5 mm	Nil



Whitefly (YMV vector)	Tmax: 32–38°C RH: 40–60% Dry, warm conditions (Any stage)
Thrips & Aphids	Tmax: 30–35°C RH: 55–65% Cloudy + humid weather after irrigation (Vegetative to flowering)
Powdery Mildew	Tmax: 28–32°C High day temp + cool nights + low RH (Pod formation to maturity)
Cercospora Leaf Spot	RH >65% Warm, humid spells (especially under irrigation) (Vegetative to pod development)
Root Rot	Soil temp: >30°C Poor drainage or excess irrigation (Early stages)



Timely Sowing



Balanced Weather



Healthy Crop



Higher Yield



Crop-weather calendar of Green Gram (*Vigna radiata* L.)



Plan Well



Sow Smart



Harvest Better



CLIMATIC
NORMAL

Crop – Green Gram (Kharif)

Duration – 70–75 Days

Month	July		August					September			October			
Std. week	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Tmax (°C)	35.6	33.0	33.4	33.5	32.2	35.0	33.5	32.9	33.6	34.3	33.7	35.4	31.7	31.4
Tmin (°C)	28.9	26.0	26.6	26.4	25.6	25.9	24.8	25.5	24.6	23.7	22.1	20.5	17.3	14.5
RHm (%)	80	88	81	81	87	80	82	92	87	85	82	77	83	83
RHe (%)	57	73	65	70	79	64	67	72	69	56	58	42	42	37
SS (hr./day)	7.0	2.1	2.8	3.2	2.6	2.6	5.6	2.2	3.6	7.5	7.3	9.1	7.5	8.8
Rain (mm/week)	8.1	38.0	0.0	16.4	128.0	0.0	25.6	79.2	45.0	0.0	15.7	0.0	3.4	0.0



PHENOPHASE
WISE WEATHER
FOR BETTER
YIELD

1 Sowing to Emergence	2 Vegetative Growth	3 Flowering	4 Pod Formation	5 Seed Filling	6 Maturity
Tmax: 28–32°C	30–34°C	28–32°C	26–30°C	26–30°C	30–34°C
Tmin: 22–25°C	22–26°C	22–24°C	20–22°C	20–22°C	22–24°C
RHm: 85–90%	80–85%	85–90%	80–85%	75–80%	70–75%
RHe: 70–80%	65–75%	70–80%	65–75%	60–70%	55–65%
SS: 4–5	3–5	4–5	5–6	6–7	7–8
Rain: 40–60 mm	30–50 mm	20–30 mm	15–25 mm	10–20 mm	<10 mm (dry needed)

CONGENIAL
WEATHER FOR
PEST/DISEASES



	Whitefly (YMV vector)	Tmax: 30–35°C RH: 60–70% Dry breaks during monsoon (Any stage)
	Thrips & Aphids	Tmax: 28–32°C RH: 65–75% Cloudy, humid weather (Vegetative to flowering)
	Powdery Mildew	Tmax: 25–30°C RH >70% Dry days + high humidity (Pod development to maturity)
	Cercospora Leaf Spot	RH >85% Leaf wetness >10 hrs Cloudy spells (Vegetative to pod formation)
	Root Rot	Poorly drained soils High rainfall + high temp (28–32°C) (Sowing to early growth)



Timely Sowing



Balanced Weather



Healthy Crop



Higher Yield

Crop-weather calendar of Chickpea (*Cicer Arietinum*)



Plan Well



Sow Smart



Harvest Better



CLIMATIC
NORMAL

(Timely sown) 										Duration – 130–140 Days									
Month	November			December						January		February				March			
Std. week	44	45	46	47	48	49	50	51	52	1	2	3	4	6	7	8	9	10	11
 Tmax (°C)	31.5	30.4	27.5	26.8	25.2	24.2	24.6	22.7	19.9	16.8	16.4	12.5	17.7	23.1	21.5	26.2	25.5	26.4	30.0
 Tmin (°C)	15.2	14.6	12.9	11.4	12.7	13.2	8.4	7.6	8.3	10.0	5.5	5.3	5.1	9.0	9.3	11.6	13.5	10.8	13.3
 RHm(%)	93	92	93	94	94	92	94	90	95	95	96	92	95	92	88	92	87	83	78
 RHe(%)	41	45	62	54	61	65	46	47	69	81	72	77	63	55	54	48	45	51	36
 Rain(mm/week)	0.0	0.0	0.0	0.0	6.6	11.8	0.0	0.0	0.0	11.2	0.0	0.0	0.0	0.0	26.8	0.0	0.6	32.2	0.0



PHENOPHASE
WISE WEATHER
FOR BETTER
YIELD

1 Sowing & emergence	2 Vegetative Growth	3 Flowering	4 Pod Formation	5 Pod Filling	6 Physiological Maturity
Tmax: 25–30°C	22–28°C	20–25°C	20–25°C	20–25°C	25–30°C
Tmin: 10–15°C	10–15°C	10–12°C	8–12°C	8–12°C	10–15°C
RH: 80–90%	70–80%	60–70%	60–70%	55–65%	50–60%
RHe: 50–60%	45–55%	40–50%	40–50%	35–45%	30–40%
Rain: 20–30 mm/week	15–25 mm/week	<10 mm/week (dry spell needed)	<10 mm/week (too much rain causes disease)	Minimal (only light irrigation if needed)	Nil (dry weather ideal for harvest)

CONGENIAL
WEATHER FOR
PEST/DISEASES



Fusarium Wilt

Soil temperature: 20–25°C • Dry soil, low soil moisture • Poor drainage
(Early vegetative to flowering stage)



Pod Borer

(*Helicoverpa armigera*)

Tmax: 25–30°C • Low to moderate rainfall • RH: 40–60% • Bright sunny days
(Flowering to pod development stage (60–110 DAS))



Grey Mould

(*Botrytis cinerea*)

Tmin: 12–20°C • RH: >90% • Cloudy, foggy, drizzly weather • Dense canopy
(Flowering to pod filling stage)



Timely Sowing



Balanced Weather



Healthy Crop



Higher Yield

Crop-weather calendar of Potato (*Solanum tuberosum* L.)



Plan Well



Sow Smart



Harvest Better



CLIMATIC
NORMAL

Crop – Potato								Duration – 110–120 Days											
Month	October			November				December			January					February			
Std. week	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9
Tmax (°C)	31.4	31.5	30.4	27.5	26.8	25.2	24.2	24.6	22.7	19.9	16.8	16.4	12.5	17.7	23.1	21.5	26.0	26.2	25.5
Tmin (°C)	14.5	15.2	14.6	12.9	11.4	12.7	13.2	8.4	7.6	8.3	10.0	5.5	5.3	5.1	9.0	9.3	10.1	11.6	13.5
RHm(%)	83	93	92	93	94	94	92	94	90	95	95	96	92	95	92	88	92	87	83
RHe(%)	37	41	45	62	54	61	65	46	47	69	81	72	77	63	55	54	48	45	51
Rain (mm/week)	0.0	0.0	0.0	0.0	0.0	6.6	11.8	0.0	0.0	0.0	11.2	0.0	0.0	0.0	0.0	26.8	0.0	0.6	32.2



PHENOPHASE
WISE WEATHER
FOR BETTER
YIELD

1 Sowing & emergence	2 Vegetative growth	3 Flowering	4 Siliqua formation	5 Seed development	6 Maturity
Tmax: 20–25°C	20–25°C	18–22°C	18–22°C	20–25°C	20–25°C
Tmin: 10–15°C	12–16°C	10–14°C	10–14°C	12–16°C	10–15°C
RHm: 85–90%	80–90%	85–95%	80–90%	75–85%	85–90%
RHe: 60–70%	60–70%	65–75%	60–70%	55–65%	60–70%
Rain: 15–25 mm	10–20 mm	5–15 mm	5–10 mm	< 5 mm (dry period needed)	15–25 mm

CONGENIAL
WEATHER FOR
PEST/DISEASES



Late Blight
(*Phytophthora infestans*)

Tmax: 18–22°C • RH: >90% • Cloudy, humid, and rainy weather
(Tuber initiation to bulking)



Early Blight
(*Alternaria solani*)

Tmax: 25–30°C • RH: 70–80% • Intermittent dry and wet spells
(Vegetative to maturity)



Aphids

Tmax: 20–28°C • RH: 70–85% • Dry, warm weather with tender foliage
(Vegetative to flowering)



**White Grubs /
Cutworms**

Tmax: 25–30°C • Soil moisture > field capacity • Cloudy, wet conditions
(Sowing to emergence)



Timely Sowing



Balanced Weather



Healthy Crop



Higher Yield



Crop-weather calendar of Sesame (*Sesamum indicum* L.)



Plan Well



Sow Smart



Harvest Better

 CLIMATIC NORMAL	Crop- Sesame (Till)															
	Duration – 90-100 (Days)															
	Month	July				August				September				October		
	Std. week	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
	Tmax (°C)	33.3	33.9	26.7	26.2	25.5	26.4	30.0	30.8	35.8	37.4	38.8	38.0	40.1	39.7	35.4
	Tmin (°C)	26.5	26.0	11.1	11.6	13.5	10.8	13.3	14.0	20.0	18.6	20.6	23.0	22.0	21.2	20.5
	RHm (%)	92	92	83	87	83	73	78	75	67	50	52	41	42	36	77
	RHe (%)	68	71	50	45	51	40	36	37	31	20	28	21	18	16	42
	SS (hr./day)	3.0	2.2	8.0	7.1	8.0	7.1	5.8	5.9	7.3	8.8	8.3	7.6	7.0	6.9	9.1
	Rain(mm/week)	40.6	47.4	0.0	0.0	0.0	0.0	6.4	11.6	39.2	0.0	0.0	0.0	14.6	75.8	0.0

 PHENOPHASE WISE WEATHER FOR BETTER YIELD							
	Sowing to Emergence	Vegetative Growth	Flowering	Pod Formation	Seed Filling	Maturity	
	 Tmax (°C)	30–35°C	32–38°C	32–36°C	28–32°C	28–32°C	28–32°C
	 Tmin (°C)	22–26°C	24–28°C	22–24°C	20–24°C	18–22°C	20–24°C
	 RHm (%)	70–80%	65–75%	70–80%	65–75%	50–60%	60–70%
	 RHe (%)	60–70%	55–65%	60–70%	45–55%	25–35%	50–60%
	 SS (hr./day)	6–7	7–9	6–7	6–7	9–10	8–9
 Rainfall (mm)	30–40 mm	25–35 mm	15–25 mm	10–15 mm	<10 mm	Nil	

 CONGENIAL WEATHER FOR PEST/DISEASES	 Leaf Roller & Capsule Borer		Tmax: 30–35°C RH: 60–70% Intermittent rainfall (Flowering to capsule stage)
	 Gall Fly		Tmax: 28–32°C RH >75% Moist conditions (Vegetative to flowering)
	 Phyllody (Mycoplasma)		Spread by leafhopper under warm and dry conditions (Any stage; appears at flowering)
	 Alternaria Leaf Spot		RH >80% Prolonged leaf wetness Temp: 25–30°C (Vegetative to flowering)
	 Bacterial Blight		RH >85% Rain splashes + wounds (Pod development)
	 Root Rot		Soil temp: >30°C Poor drainage or excess irrigation (Early stages)

Timely Sowing
 |
 Balanced Weather
 |
 Healthy Crop
 |
 Higher Yield



Crop Weather Calendar of **Auraiya District, Uttar Pradesh**



AGRO-CLIMATIC ZONE



Middle Gangetic Plain
Region



MAIN CROPS



Paddy, Wheat, Maize,
Pulses, Oilseeds (Mustard),
Vegetables



SOIL TYPE



Alluvial Soil
(Sandy Loam to
Clayey Loam)



PADDY



WHEAT



MAIZE



MUSTARD



POTATO



VEGETABLES

Developed by

Chandra Shekhar Azad University of Agriculture & Technology, Kanpur (U.P.)

Under Gramin Krishi Mausam Sewa (GKMS), AMFU Kanpur &
AICRP on Agrometeorology



CROP-WEATHER CALENDAR OF RICE (*Oryza Sativa* L.)

Climatic
Normal



Crop-	Rice					Duration -120-135 (Days)																
Month	June					July				August				September				October				
Std. week	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Tmax (°C)	32.4	31.6	31.1	30.9	30.8	30.7	31.0	31.2	31.4	30.8	30.9	31.2	31.0	30.8	30.7	30.2	30.7	30.2	30.1	29.2	28.8	28.5
Tmin (°C)	23.7	23.8	23.9	23.9	24.0	24.0	24.1	24.2	24.2	24.0	23.9	24.0	23.6	23.4	23.2	22.6	22.3	21.5	20.3	18.7	17.7	16.5
Rain (mm/week)	55.5	85.2	88.3	105.6	129.3	101.1	73.9	72.8	70.0	98.5	73.0	74.1	66.0	63.3	67.4	79.8	39.0	29.2	14.1	4.7	1.6	2.4
RH (%)	74.4	76.9	78.0	78.9	79.7	79.3	78.4	78.0	77.5	79.0	78.1	77.7	77.5	77.5	77.5	77.8	75.4	75.1	73.2	72.3	71.4	70.3

Phenophase
wise
weather for
better yield



Sowing



Transplanting



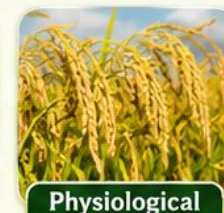
Active tillering



Flowering



Grain filling



Physiological
maturity

Tmax (°C)	32-36	30-34	28-32	26-30	25-30	24-28
Tmin (°C)	24-26	23-25	22-24	20-22	18-21	16-20
RHm (%)	80-90	85-95	85-95	90-95	80-90	70-80
RHe (%)	70-80	75-85	75-85	75-85	65-75	60-70
Rainfall (mm)	40-60	60-80	60-90	50-70	30-50	<20

Congenial
weather for
pest/diseases



Seed rot, Damping off	Soil temp: 30-35°C High soil moisture Poor drainage
Bacterial leaf blight, Blast, Brown spot	RH > 85% Tmax: 30-34°C Stagnant water
Sheath blight, Gall midge, Leaf folder, Stem borer	RH > 85% Cloudy skies Tmax: 28-32°C
Neck blast, False smut, Sheath rot	RH > 90% Frequent light rain Tmax: 26-30°C
Ear head bug, Grain discoloration, Stem borer	RH: 80-90% Intermittent rain Tmax: 25-30°C
Dirty panicle, Aspergillus (storage fungi)	RH > 80% Delayed harvest Foggy/cloudy days



Timely operations + Suitable weather = Higher yield & Better quality

CROP-WEATHER CALENDAR OF WHEAT (*Triticum Aestivum*)

CLIMATIC
NORMAL

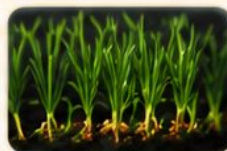


Crop- Wheat (Timely sown)

Duration – 125–130 (Days)

Month	November						December				January				February				March			
Std. week	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	12	12				
Tmax (°C)	26.6	25.9	24.9	23.5	22.6	22.1	21.3	20.8	21.0	21.4	22.6	23.7	25.7	26.9	28.1	29.1	30.6	30.8				
Tmin (°C)	13.9	12.7	11.9	10.9	10.1	9.2	9.0	8.7	9.1	9.8	10.9	11.8	12.7	13.7	14.4	15.4	16.8	17.9				
Rain (mm/week)	0.6	0.6	0.6	1.3	0.4	1.5	1.4	3.2	2.0	2.3	1.8	2.9	2.0	2.0	1.5	1.6	2.6	5.8				
RH (%)	70.4	69.9	70.6	72.1	72.8	72.5	73.8	74.0	73.9	72.4	71.6	71.1	70.0	69.7	67.9	67.4	66.3	67.8				

PHENOPHASE
WISE
WEATHER FOR
BETTER YIELD



Sowing & emergence

Emergence to tillering

Tillering to heading

Heading to grain filling

Grain formation to maturity

Physiological Maturity

Tmax (°C)	24–28	22–26	20–25	22–26	26–30	28–32
Tmin (°C)	12–16	10–14	8–12	10–14	12–16	14–18
RHm (%)	75–85	70–80	65–75	70–80	60–70	50–60
RHe (%)	60–70	60–70	55–65	60–70	50–60	40–50
Rainfall (mm)	10–20	<10	<10	10–20	<10	Nil or <5

CONGENIAL
WEATHER FOR
PEST/DISEASES



Seed rot, Damping off

Soil temp: 24–28°C • High soil moisture • Poor drainage



Aphids, Early blight

Tmax: 22–26°C RH: 70–80% • Cool, moist mornings



Leaf rust, Stripe rust, Aphids

Tmax: 20–25°C RH: 65–75% • Intermittent dew or light showers



Powdery mildew, Flag smut, Rusts

Tmax: 22–26°C RH > 75% • Light rain & cloudy weather



Root rot, Lodging (if rain), Foliar blight

Tmax: 26–30°C RH: 60–70% • Dry weather preferable



Grain discoloration, Ear head infection

Tmax: 28–32°C RH: 50–60% • Fog or dew during maturity



Seed rot, Damping off

Soil temp: 24–28°C • High soil moisture • Poor drainage

TIPS FOR BETTER YIELD



Follow timely sowing for optimum growth.



Maintain proper irrigation as per crop stage.



Use balanced fertilization and quality seed.



Monitor weather and protect from pests/diseases.

Timely operations + Suitable weather = Higher yield & Better quality

CROP-WEATHER CALENDAR OF MUSTARD (*Brassica spp.*)

CLIMATIC
NORMAL



Crop-	Mustard																		Duration – 125–130 (Days)										
Month	October		November						December			January					February												
Std. week	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9										
 Tmax (°C)	29.2	28.8	28.5	27.3	26.6	25.9	24.9	23.5	22.6	22.1	21.3	20.8	21.0	21.4	22.6	23.7	24.7	25.9	26.7										
 Tmin (°C)	18.7	17.7	16.5	15.4	13.9	12.7	11.9	10.9	10.1	9.2	9.0	8.4	8.7	9.1	9.8	10.9	11.8	12.7	13.7										
 Rain (mm/week)	4.7	1.6	2.4	1.0	0.6	0.6	0.6	1.3	0.4	1.5	1.4	1.3	3.2	2.0	2.3	1.8	2.9	2.0	2.0										
 RH (%)	72.3	71.4	70.3	71.0	70.4	69.9	70.6	72.1	72.8	72.5	73.8	74.0	73.9	73.7	72.4	71.6	71.1	70.0	69.7										

PHENOPHASE
WISE
CROP STAGES



Sowing & seedling
establishment
(15–21 days)



Vegetative
growth
(25–30 days)



Flowering
(15–20 days)



Pod development
(25–30 days)



Maturity
(15–30 days)



PHENOPHASE
WISE WEATHER
FOR BETTER YIELD

Tmax (°C)	Sowing & emergence	Vegetative growth	Flowering	Siliqua formation	Seed development	Maturity
Tmin (°C)	24–28	22–26	20–24	20–25	24–28	28–30
RHm (%)	12–16	10–14	8–12	10–14	12–16	14–18
RHe (%)	70–80	65–75	60–70	60–70	55–65	50–60
Rainfall (mm)	60–70	55–65	50–60	50–60	45–55	40–50
	5–10	<10	<5	<10	Nil or <5	Nil

CONGENIAL
WEATHER FOR
PEST/DISEASES



Seed rot, Damping off	Soil temperature > 25°C High soil moisture Poor drainage
Aphids, Alternaria leaf spot	Tmax: 22–26°C RH: 65–75% Moist, cloudy weather
White rust, Powdery mildew	Tmax: 20–24°C RH: 60–70% Cloudy with dew formation
Sclerotinia stem rot, Alternaria	Tmax: 20–25°C RH > 60% Cloudy spells or light drizzles
Pod borer, Late Alternaria blight	Tmax: 24–28°C RH: 55–65% Dry to moderately humid
Aspergillus, Storage fungi	Tmax: 28–30°C RH < 50% Fog or delayed harvest



TIMELY OPERATIONS + SUITABLE WEATHER = HIGHER YIELD & BETTER QUALITY



CROP-WEATHER CALENDAR OF POTATO (*Solanum tuberosum* L.)

CLIMATIC
NORMAL



Crop- Month	Potato Duration – 110–120 (Days)																		
Month	October			November					December			January					February		
Std. week	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9
Tmax (°C)	29.2	28.8	28.5	27.3	26.6	25.9	24.9	23.5	22.6	22.1	21.3	20.8	21.0	21.4	22.6	23.7	24.7	25.9	26.7
Tmin (°C)	18.7	17.7	16.5	15.4	13.9	12.7	11.9	10.9	10.1	9.2	9.0	8.4	8.7	9.1	9.8	10.9	11.8	12.7	13.7
Rain (mm/week)	4.7	1.6	2.4	1.0	0.6	0.6	0.6	1.3	0.4	1.5	1.4	1.3	3.2	2.0	2.3	1.8	2.9	2.0	2.0
RH (%)	72.3	71.4	70.3	71.0	70.4	69.9	70.6	72.1	72.8	72.5	73.8	74.0	73.9	73.7	72.4	71.6	71.1	70.0	69.7

GROWTH
STAGES



PHENOPHASE
WISE WEATHER
FOR BETTER YIELD

Sowing & emergence	Vegetative growth	Flowering	Tuber initiation	Tuber bulking	Maturity
Tmax (°C)	20–28	20–25	18–22	20–24	24–28
Tmin (°C)	12–16	10–12	10–12	10–14	12–16
RHm (%)	80–90	80–85	85–90	80–85	65–75
RHe (%)	70–70	65–75	70–80	65–70	55–65
Rainfall (mm)	5–10	<5	<10	<10	Nil or <5

CONGENIAL
WEATHER FOR
PEST/DISEASES



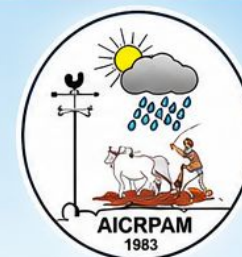
Seed rot, Damping off	Soil temp: 24–28°C High soil moisture Poor drainage
Early blight, Cutworms, Aphids	Tmax: 20–26°C RH > 85% Cloudy & moist weather
Late blight, Whiteflies	Tmax: 20–25°C RH: 80–85% Dew or light drizzle
Late blight, Root-knot nematodes	Tmax: 18–22°C RH > 90% Overcast + drizzles
Rhizoctonia (black scurf), Aphids	Tmax: 20–24°C RH: 80–85% Intermittent irrigation
Soft rot, Dry rot (storage fungi)	Tmax: 24–28°C RH: 65–75% Dry, warm days

TIPS FOR BETTER YIELD

- ✓ Use healthy seed tubers.
- ✓ Ensure good drainage & ridges.
- ✓ Irrigate at critical stages (vegetative, tuber bulking).
- ✓ Balanced fertilization (NPK) for better tuber size.
- ✓ Monitor pests & diseases regularly.



TIMELY OPERATIONS + SUITABLE WEATHER = HIGHER YIELD & BETTER QUALITY



Crop Weather Calendar of Kannauj District, Uttar Pradesh



AGRO-CLIMATIC ZONE

Middle Gangetic Plain
Region



MAIN CROPS

Paddy, Wheat, Maize, Pulses,
Oilseeds (Mustard), Vegetables



SOIL TYPE

Alluvial Soil (Sandy Loam to
Clayey Loam)



PADDY



WHEAT



MUSTARD



POTATO

Developed by

Chandra Shekhar Azad University of Agriculture & Technology, Kanpur (U.P.)

Under Gramin Krishi Mausam Sewa (GKMS), AMFU Kanpur &
AICRP on Agrometeorology



CROP-WEATHER CALENDAR OF RICE (*Oryza Sativa* L.)

CLIMATIC NORMAL



Crop-		Rice										Duration –120- 135 (Days)											
Month		June					July				August					September				October			
Std. week		24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
	Tmax (°C)	39.1	37.9	36.3	35.7	34.3	33.9	33.3	33.2	33.2	32.8	33.1	33.4	33.2	33.1	33.2	33.5	33.6	33.6	32.8	32.1	31.3	30.3
	Tmin (°C)	27.5	27.1	26.8	26.7	26.3	26.1	26.0	25.9	26.0	25.7	25.5	25.7	25.2	24.9	24.6	23.6	22.8	21.3	19.5	17.9	16.6	15.4
	Rain (mm/week)	1.6	3.3	5.6	5.0	8.4	7.1	7.2	5.6	5.4	8.4	5.8	4.7	6.4	6.6	3.9	1.2	1.7	0.8	0.3	0.1	0.0	0.0
	RH (%)	58.2	61.5	66.1	67.7	71.8	72.6	74.0	73.7	73.9	75.0	73.4	72.5	72.5	72.4	70.6	67.3	65.5	62.4	61.1	60.2	59.9	60.5

PHENOPHASE WISE WEATHER FOR BETTER YIELD



Sowing



Transplanting



Active tillering



Flowering



Grain filling



Physiological maturity

Tmax (°C)	30–34	28–32	30–33	28–32	27–31	25–30
Tmin (°C)	24–26	23–25	23–25	22–24	20–22	18–20
RHm (%)	70–80	80–85	80–85	85–90	80–85	70–75
RHe (%)	55–65	65–70	65–70	70–75	65–70	55–60
Rainfall (mm)	100–150	150–200	120–150	100–120	80–100	<50

CONGENIAL WEATHER FOR PEST/DISEASES



Stem borer	28–35 °C, RH 80–90%, cloudy weather with intermittent rain
Gundhi bug	25–30 °C, RH 60–75%, dry to cloudy weather with little rain
Leaf folder / Leaf roller	30–35 °C, RH >85%, cloudy & humid weather
Brown planthopper (BPH)	28–32 °C, RH >80%, cloudy weather, waterlogged fields
Sheath blight (<i>Rhizoctonia solani</i>)	Tmin 20–25 °C, RH >90%, continuous cloudy/rainy days, poor air circulation
Blast (<i>Pyricularia oryzae</i>)	20–28 °C, RH >85%, cloudy weather with drizzles, high N-fertilizer
Bacterial leaf blight (BLB)	25–34 °C, RH >80%, intermittent rains & strong winds
False smut	25–30 °C, RH >90%, cloudy & humid weather, intermittent rain

TIMELY OPERATIONS + SUITABLE WEATHER = HIGHER YIELD & BETTER QUALITY

CROP-WEATHER CALENDAR OF WHEAT (*Triticum Aestivum*)

CLIMATIC NORMAL



Crop- Wheat (Timely sown)

Duration – 125-130 (Days)

Month	November		December				January				February				March				
Std. week	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13
 Tmax (°C)	28.0	27.0	25.9	24.2	23.1	21.7	20.0	20.7	20.8	22.3	24.5	24.3	25.8	27.6	28.4	29.9	31.3	33.8	35.4
 Tmin (°C)	12.7	11.6	10.5	9.8	8.7	7.9	7.8	7.5	8.0	8.4	9.3	10.3	11.4	12.3	13.2	14.2	15.5	17.1	18.4
 Rain (mm/week)	0.1	0.1	0.0	0.2	0.0	0.2	0.4	0.2	0.6	0.4	0.2	0.9	0.6	0.3	0.7	0.2	0.3	0.2	0.1
 RH (%)	62.0	63.2	64.4	67.9	69.0	71.7	76.4	73.9	74.5	71.0	69.0	68.6	66.6	62.8	62.2	59.4	57.6	53.4	51.4

PHENOPHASE WISE WEATHER FOR BETTER YIELD



Sowing & emergence

Emergence to tillering

Tillering to heading

Heading to grain filling

Grain formation to maturity

Physiological Maturity

Tmax (°C)	22–26	18–22	20–24	22–26	26–30	28–32
Tmin (°C)	8–12	6–8	8–10	10–12	12–15	14–16
RHm (%)	65–70	70–75	65–70	60–65	55–60	50–55
RHe (%)	50–55	55–60	50–55	45–50	40–45	35–40
Rainfall (mm)	20–30	10–20	20–30	20–25	10–15	<10

CONGENIAL WEATHER FOR PEST/DISEASES



Brown rust (<i>Puccinia recondita</i>)	18–22 °C, RH >80%, cloudy weather, light rain/dew
Yellow rust (<i>Puccinia striiformis</i>)	10–15 °C, high RH (>85%), cloudy & moist conditions
Karnal bunt (<i>Tilletia indica</i>)	18–24 °C, RH 70–80%, cloudy weather with intermittent rain
Loose smut (<i>Ustilago tritici</i>)	16–22 °C, RH 70–80%, cloudy weather at flowering
Powdery mildew (<i>Erysiphe graminis</i>)	15–20 °C, RH 60–70%, cloudy & dry conditions
Alternaria blight	20–25 °C, RH >80%, cloudy weather with light rain
Aphids (<i>Sitobion avenae</i> , <i>Rhopalosiphum</i> spp.)	18–25 °C, RH 65–75%, cloudy & humid weather
Termites	25–30 °C, dry soil conditions, sandy soils
Armyworm / Cutworm	20–28 °C, RH 70–80%, cloudy weather with light rain
Shoot fly	25–30 °C, RH 60–70%, intermittent rainfall

IMPORTANT TIPS

- ✓ Timely sowing ensures better tillering and higher yield.
- ✓ Maintain proper drainage to avoid waterlogging.
- ✓ Balanced fertilization and irrigation at critical stages increase productivity.
- ✓ Regular monitoring of pests & diseases helps in timely control.



TIMELY SOWING + SUITABLE WEATHER + PROPER MANAGEMENT = HIGHER YIELD & BETTER QUALITY

CROP-WEATHER CALENDAR OF MUSTARD (*Brassica spp.*)

CLIMATIC NORMAL



Crop-	Mustard		Duration – 125-130 (Days)																
Month	October		November					December			January					February			
Std. week	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9
 Tmax (°C)	32.1	31.3	30.3	29.2	28.0	27.0	25.9	24.2	23.1	21.7	20.0	20.7	20.8	22.3	23.5	24.3	25.8	27.6	28.4
 Tmin (°C)	17.9	16.6	15.4	14.3	12.7	11.6	10.5	9.8	8.7	7.9	7.8	7.5	8.0	8.4	9.3	10.3	11.4	12.3	13.2
 Rain (mm/week)	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.2	0.0	0.2	0.4	0.2	0.4	0.4	0.2	0.9	0.6	0.3	0.7
 RH (%)	60.2	59.9	60.5	61.5	62.0	63.2	64.4	67.9	69.0	71.7	76.4	73.9	74.5	71.0	69.0	68.6	66.6	62.8	62.2

PHENOPHASE WISE WEATHER FOR BETTER YIELD



Sowing & seedling establishment
(15–21 days)



Vegetative growth
(25–30 days)



Flowering
(15–20 days)



Pod development
(25–30 days)



Maturity
(15–30 days)



PHENOPHASE WISE WEATHER FOR BETTER YIELD

Sowing & emergence

Vegetative growth

Flowering

Siliqua formation

Seed development

Maturity

Tmax (°C)	25–30	20–25	18–22	20–24	22–26	26–30
Tmin (°C)	12–16	8–12	6–10	8–12	10–14	12–16
RHm (%)	65–70	70–75	75–80	70–75	65–70	55–60
RHe (%)	50–55	55–60	60–65	55–60	50–55	40–45
RHe (%)	20–30	10–20	20–30	10–20	10–15	<10
Rainfall (mm)						

25–30	20–25	18–22	20–24	22–26	26–30
12–16	8–12	6–10	8–12	10–14	12–16
65–70	70–75	75–80	70–75	65–70	55–60
50–55	55–60	60–65	55–60	50–55	40–45
20–30	10–20	20–30	10–20	10–15	<10

CONGENIAL WEATHER FOR PEST/DISEASES



Aphids (<i>Lipaphis erysimi</i>)	18–25 °C, RH 65–80%, cloudy & humid weather, dry spell after irrigation/rain
Painted bug (<i>Bagrada hilaris</i>)	25–30 °C, low RH (<50%), bright sunny weather
Mustard sawfly (<i>Athalia lugens proxima</i>)	20–28 °C, RH 65–75%, cloudy weather with light rains
Leaf webber / Capsule borer	22–28 °C, RH 70–80%, cloudy & humid weather
Alternaria blight (<i>Alternaria brassicae</i>)	18–22 °C, RH >90%, cloudy weather with intermittent rains/dew
White rust (<i>Albugo candida</i>)	15–20 °C, RH >90%, cloudy & wet weather
Downy mildew (<i>Peronospora parasitica</i>)	10–18 °C, RH >85%, cloudy & moist conditions
Powdery mildew (<i>Erysiphe cruciferarum</i>)	18–25 °C, RH 60–70%, cloudy & dry weather
Sclerotinia stem rot (<i>Sclerotinia sclerotiorum</i>)	15–20 °C, RH >90%, prolonged cloudy & wet conditions

TIMELY OPERATIONS + SUITABLE WEATHER = HIGHER YIELD & BETTER QUALITY

CROP-WEATHER CALENDAR OF POTATO (*Solanum tuberosum* L.)

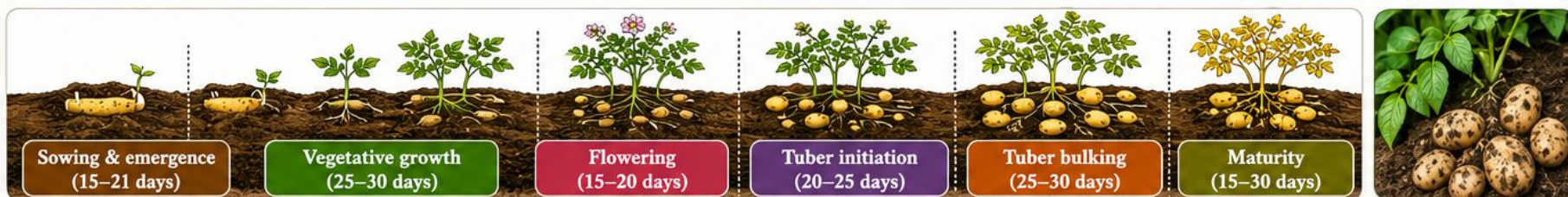


CLIMATIC NORMAL



Crop-	Potato		Duration – 110–120 (Days)																
Month	October		November					December			January					February			
Std. week	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9
 Tmax (°C)	32.1	31.3	30.3	29.2	28.0	27.0	25.9	24.2	23.1	21.7	20.0	20.7	20.8	22.3	23.5	24.3	25.8	27.6	28.4
 Tmin (°C)	17.9	16.6	15.4	14.3	12.7	11.6	10.5	9.8	8.7	7.9	7.8	7.5	8.0	8.4	9.3	10.3	11.4	12.3	13.2
 Rain (mm/week)	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.2	0.0	0.2	0.4	0.2	0.6	0.4	0.2	0.9	0.6	0.3	0.7
 RH (%)	60.2	59.9	60.5	61.5	62.0	63.2	64.4	67.9	69.0	71.7	76.4	73.9	74.5	71.0	69.0	68.6	66.6	62.8	62.2

PHENOPHASE WISE WEATHER FOR BETTER YIELD



Phenophase wise weather for better yield

	Sowing & emergence	Vegetative growth	Flowering	Tuber Initiation	Tuber Bulking	Maturity
Tmax (°C)	25–30	20–24	18–22	16–20	18–22	22–26
Tmin (°C)	12–16	8–12	6–10	4–8	6–10	8–12
RHm (%)	65–70	70–75	75–80	80–85	75–80	65–70
RHe (%)	50–55	55–60	60–65	65–70	60–65	50–55
Rainfall (mm)	20–30	10–20	20–30	20–25	15–20	<10

CONGENIAL WEATHER FOR PEST/DISEASES



Late blight (<i>Phytophthora infestans</i>)	10–20 °C, RH >90%, cloudy weather with continuous dew/fog or intermittent rains
Early blight (<i>Alternaria solani</i>)	24–30 °C, RH 70–80%, intermittent dry & wet spells
Black scurf (<i>Rhizoctonia solani</i>)	18–22 °C, moist soil, cloudy weather
Common scab (<i>Streptomyces scabies</i>)	20–28 °C, dry soil with low moisture, alkaline soils
Brown rot / Bacterial wilt (<i>Ralstonia solanacearum</i>)	25–30 °C, RH >80%, poorly drained soils, high rainfall
Soft rot (<i>Erwinia</i> spp.)	20–28 °C, RH >85%, waterlogging + warm humid conditions
Potato cyst nematode (<i>Globodera</i> spp.)	15–20 °C, moist soils
Aphids (<i>Myzus persicae</i> , <i>Aphis gossypii</i>)	18–25 °C, RH 65–80%, cloudy & humid weather
Whitefly (<i>Bemisia tabaci</i>)	25–30 °C, RH 50–60%, dry weather
Cutworm / Armyworm	20–28 °C, RH 70–80%, cloudy weather with light rains



TIMELY OPERATIONS + SUITABLE WEATHER = HIGHER YIELD & BETTER QUALITY





Crop Weather Calendar of Mainpuri District, Uttar Pradesh



Agro-climatic Zone

Middle Gangetic Plain
Region



Main Crops

Paddy, Wheat, Maize, Pulses,
Oilseeds (Mustard), Vegetables



Soil Type

Alluvial Soil
(Sandy Loam to Clayey Loam)



Paddy



Wheat



**Mustard
(Oilseeds)**



Maize



Vegetables

Developed by

Chandra Shekhar Azad University of Agriculture & Technology, Kanpur (U.P.)



Under Gramin Krishi Mausam Sewa (GKMS),
AMFU Kanpur & AICRP on Agrometeorology



CROP-WEATHER CALENDAR OF RICE (*Oryza Sativa L.*)

CLIMATIC NORMAL



Crop-Month	Rice June					July					August					September					October				
Std. week	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45			
Tmax (°C)	34.5	33.0	32.1	31.6	31.0	30.5	30.5	30.3	30.3	30.5	30.6	30.6	30.6	31.1	31.2	31.9	31.6	31.5	31.3	31.0	30.2	30.1			
Tmin (°C)	25.2	24.9	24.4	24.3	24.0	23.8	23.6	23.7	23.7	23.7	23.7	23.6	23.7	23.6	23.6	23.5	23.2	22.8	22.1	21.2	20.5	19.7			
Rain (mm/week)	7.9	7.4	8.6	8.8	8.9	12.6	11.2	12.7	12.0	10.6	9.2	10.8	10.2	8.6	10.2	4.7	6.3	5.6	3.1	3.2	2.2	1.5			
RH (%)	76.8	78.9	79.9	80.4	81.2	82.4	81.7	82.5	82.5	82.0	81.3	81.5	81.4	80.2	80.3	77.8	77.9	77.3	75.7	74.7	74.6	73.0			

PHENOPHASE WISE WEATHER FOR BETTER YIELD



							
	Sowing	Transplanting	Active tillering	Flowering	Grain filling	Physiological maturity	
Tmax (°C)	30–32	28–32	28–30	26–28	25–27	28–30	
Tmin (°C)	22–24	22–25	22–24	20–22	18–20	16–18	
RHm (%)	75–85	80–90	75–85	80–85	70–75	60–65	
RHe (%)	65–70	65–70	60–65	65–70	55–60	50–55	
Rainfall (mm)	40–60	80–120	60–80	70–90	30–40	<10	

CONGENIAL WEATHER FOR PEST/DISEASES



	Stem borer	Tmax: 28–35 °C – High humidity: 80–90% – Cloudy weather with intermittent rain	<i>Vegetative to panicle initiation (Tillering to Booting stage)</i>
	Gundhi bug	Tmax: 25–30 °C – RH: 60–75% – Dry, cloudy weather with little rain	<i>Flowering to dough stage</i>
	Leaf roller	Tmax: 30–35 °C – High RH (>85%) – Cloudy, humid weather	<i>Tillering to early panicle emergence</i>
	Sheath blight (<i>Rhizoctonia solani</i>)	Tmin: 20–25 °C – RH >90% – Continuous cloudy/rainy days – Poor air circulation	<i>Tillering to heading</i>
	Blast (Leaf/Neck blast)	Tmax: 25–28 °C, Tmin: 20–22 °C – RH >85% – Intermittent drizzles & cloudy weather	<i>Nursery, tillering & flowering stages</i>
	Bacterial Leaf Blight (BLB)	Tmax: 28–34 °C – RH: 70–80% – High rainfall, stormy winds, cloudy weather	<i>Tillering to flowering stage</i>
	False smut	Tmax: 25–30 °C – RH: >85% – Cloudy, humid conditions with intermittent rain	<i>Panicle initiation to grain filling</i>

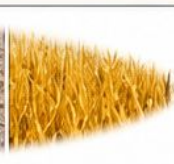
TIMELY OPERATIONS + SUITABLE WEATHER = HIGHER YIELD & BETTER QUALITY

CROP-WEATHER CALENDAR OF WHEAT (*Triticum Aestivum*)

CLIMATIC
NORMAL



Crop- Wheat (Timely sown)							Duration – 125–130 (Days)												
Month	November		December				January				February				March				
Std. week	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13
Tmax (°C)	29.6	29.2	28.7	28.5	27.8	27.8	27.8	28.0	28.5	28.9	29.5	30.2	31.0	32.1	32.7	33.2	33.8	34.9	35.2
Tmin (°C)	18.1	16.7	16.2	16.1	15.1	14.7	14.8	15.0	15.3	15.9	16.3	17.2	18.0	18.7	19.3	20.4	21.1	21.9	22.9
Rain (mm/week)	0.7	0.1	0.4	0.2	0.8	0.1	0.1	0.4	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.6	0.6	0.4	0.8
RH (%)	70.6	68.6	68.5	68.6	68.0	67.2	67.5	67.4	67.0	67.4	67.0	67.5	67.7	67.1	67.0	68.2	68.6	68.2	69.6



PHENO
PHASE
WISE WEATHER
FOR BETTER YIELD

Sowing & emergence	Emergence to tillering	Tillering to heading	Heading to grain filling	Grain formation to maturity	Physiological Maturity
22–25	18–22	20–24	22–26	26–30	28–32
Tmax (°C)	10–12	8–10	8–12	10–14	14–18
Tmin (°C)	70–80	75–85	70–80	65–75	50–60
RHm (%)	60–65	65–70	60–65	55–60	40–45
RHe (%)	20–30	10–20	15–25	10–15	<10
Rainfall (mm)					Nil

CONGENIAL
WEATHER FOR
PEST/DISEASES



Brown rust (<i>Puccinia recondita</i>)	Tmax: 18–25 °C, Tmin: 8–12 °C, RH >70%, cloudy & moist with dew
Yellow rust (<i>Puccinia striiformis</i>)	Tmax: 10–15 °C, Tmin: 5–8 °C, RH >80%, cloudy & wet
Black rust (<i>Puccinia graminis</i>)	Tmax: 25–30 °C, RH 60–70%, clear warm days after cool nights
Powdery mildew (<i>Erysiphe graminis</i>)	Tmax: 15–20 °C, RH 70–80%, cloudy & humid with poor air circulation
Karnal bunt (<i>Tilletia indica</i>)	Tmax: 18–24 °C, RH 80–90%, cloudy with light rain/high soil moisture
Loose smut (<i>Ustilago tritici</i>)	Cool moist weather. Tmin: 10–15 °C, RH >80%
Aphids (<i>Sitobion avenae</i>)	18–25 °C, RH 65–75%, cloudy & humid
Termites	Warm, dry weather with low soil moisture



CROP-WEATHER CALENDAR OF MUSTARD (*Brassica spp.*)

CLIMATIC NORMAL



Crop-Month	Mustard																		
	October		November						December			January					February		
Std. week	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9
Tmax (°C)	31.0	30.2	30.1	29.7	29.6	29.2	28.7	28.5	27.8	27.8	27.8	28.0	28.5	28.9	29.5	30.2	31.1	32.1	32.7
Tmin (°C)	21.2	20.5	19.7	18.7	18.1	16.7	16.2	16.1	15.1	14.7	14.8	15.0	15.3	15.9	16.3	17.2	18.0	18.7	19.3
Rain (mm/week)	3.2	2.2	1.5	1.1	0.7	0.1	0.4	0.2	0.8	0.1	0.1	0.4	0.1	0.2	0.2	0.2	0.3	0.3	0.3
RH (%)	74.7	74.6	73.0	71.7	70.6	68.6	68.5	68.6	68.0	67.2	67.5	67.4	67.0	67.4	67.0	67.5	67.7	67.1	67.0

PHENOPHASE WISE WEATHER FOR BETTER YIELD



Sowing & seedling establishment (15–21 days)



Vegetative growth (25–30 days)



Flowering (15–20 days)



Pod development (25–30 days)



Maturity (15–30 days)



PHENOPHASE WISE WEATHER FOR BETTER YIELD



Sowing & emergence

22–25



Vegetative growth

18–22



Flowering

16–20



Silique formation

18–22



Seed development

22–26



Maturity

28–32

Tmax (°C)

10–12

6–10

5–8

6–10

8–12

12–16

Tmin (°C)

70–80

70–75

75–85

65–75

60–70

55–60

RHm (%)

60–65

55–60

60–65

55–60

50–55

45–50

RHe (%)

20–30

10–15

10–20

5–10

<10

Nil

Rainfall (mm)

20–30

10–15

10–20

5–10

<10

Nil

CONGENIAL WEATHER FOR PEST/DISEASES



Mustard aphid (<i>Lipaphis erysimi</i>)	18–25 °C, RH 65–80%, cloudy & humid weather, no rain
Alternaria blight (<i>Alternaria brassicae</i>)	18–22 °C, RH >90%, frequent cloudy days with drizzles
White rust (<i>Albugo candida</i>)	15–20 °C, RH 80–90%, cloudy with light showers
Powdery mildew (<i>Erysiphe cruciferarum</i>)	20–25 °C, RH 60–70%, dry & cloudy weather, poor air circulation
Downy mildew (<i>Peronospora parasitica</i>)	15–22 °C, RH >85%, cloudy & wet conditions
Painted bug (<i>Bagrada hilaris</i>)	28–32 °C, dry weather, low soil moisture
Stem rot (<i>Sclerotinia sclerotiorum</i>)	18–22 °C, RH >90%, prolonged cloudy/rainy weather
Termites	Warm, dry weather with low soil moisture

TIMELY OPERATIONS + SUITABLE WEATHER = HIGHER YIELD & BETTER QUALITY

CROP-WEATHER CALENDAR OF GROUNDNUT (*Arachis hypogaea* L.)

CLIMATIC NORMAL



Month	Crop- Groundnut (Zaid)							Duration – 80-85 (Days)								
	February	March						April					May			
Std. week	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Tmax (°C)	31.0	32.1	32.7	33.2	33.8	34.9	35.2	35.7	36.0	36.4	36.8	37.1	37.4	37.6	38.0	37.5
Tmin (°C)	18.0	18.7	19.3	20.4	21.1	21.9	22.9	22.9	23.5	23.9	24.5	25.3	25.8	25.9	26.4	26.2
Rain (mm/week)	0.3	0.3	0.3	0.6	0.6	0.4	0.4	0.8	1.4	1.1	1.5	1.9	2.4	2.0	2.6	2.7
RH (%)	67.7	67.1	67.0	68.2	68.6	68.2	69.6	70.0	70.1	70.6	70.6	71.0	71.5	71.2	71.6	72.1

PHENOPHASE WISE WEATHER FOR BETTER YIELD



Weather Parameter	Sowing to Emergence	Vegetative Growth	Flowering & Pegging	Pod Development	Seed Filling	Maturity
Tmax (°C)	30–34	32–36	30–34	32–36	30–34	32–36
Tmin (°C)	18–20	20–22	20–24	22–24	22–24	24–26
RHm (%)	60–70	55–65	60–70	55–65	60–70	55–60
RHe (%)	45–50	40–45	45–50	40–45	45–50	40–45
SS (hr./day)	8–9	9–10	8–9	9–10	7–8	8–9
Rainfall (mm)	20–30	30–40	40–60 (with irrigation support)	30–40	50–70 (early monsoon showers help)	<20

CONGENIAL WEATHER FOR PEST/DISEASES



Leaf spot (<i>Cercospora</i> spp.)	25–30 °C, RH >85%, cloudy/humid weather, intermittent irrigation or showers
Rust (<i>Puccinia arachidis</i>)	23–28 °C, RH >80%, frequent dew deposition, cloudy weather
Collar rot (<i>Aspergillus niger</i>)	28–32 °C, dry soil after sowing, low soil moisture stress
Aflatoxin contamination (<i>Aspergillus flavus</i>)	28–32 °C, RH 65–75%, drought stress followed by irrigation or pre-monsoon rain
Stem rot / Sclerotium wilt (<i>Sclerotium rolfsii</i>)	25–30 °C, RH >85%, heavy irrigation or continuous moist soil
White grub (<i>Holotrichia</i> spp.)	28–30 °C, moist soil after pre-monsoon showers
Termites	28–32 °C, prolonged dry spells, sandy soil with low moisture
Aphids (<i>Aphis craccivora</i>)	20–28 °C, RH 70–80%, cloudy humid weather
Jassids (<i>Empoasca kerri</i>)	26–30 °C, RH 60–70%, hot & humid conditions with intermittent rains
Spodoptera (Leaf-eating caterpillar)	25–30 °C, RH 70–80%, continuous cloudy weather, frequent irrigation



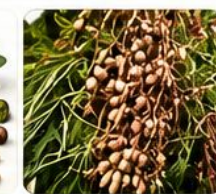
CROP-WEATHER CALENDAR OF GROUNDNUT (*Arachis hypogaea* L.)

CLIMATIC
NORMAL



Crop-	Groundnut (Kharif)										Duration – 120–130 (Days)											
Month	June					July				August					September				October			
Std. week	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
 Tmax (°C)	34.5	33.0	32.1	31.6	31.0	30.5	30.5	30.3	30.3	30.5	30.6	30.6	30.6	31.1	31.2	31.9	31.6	31.5	31.3	31.0	30.2	30.1
 Tmin (°C)	25.2	24.9	24.4	24.3	24.0	23.8	23.6	23.7	23.7	23.7	23.7	23.6	23.7	23.6	23.6	23.5	23.2	22.8	22.1	21.2	20.5	19.7
 Rain (mm/week)	7.9	7.4	8.6	8.8	8.9	12.6	11.2	12.7	12.0	10.6	9.2	10.8	10.2	8.6	10.2	4.7	6.3	5.6	3.1	3.2	2.2	1.5
 RH (%)	76.8	78.9	79.9	80.4	81.2	82.4	81.7	82.5	82.5	82.0	81.3	81.5	81.4	80.2	80.3	77.8	77.9	77.3	75.7	74.7	74.6	73.0

PHENOPHASE
WISE WEATHER
FOR BETTER YIELD

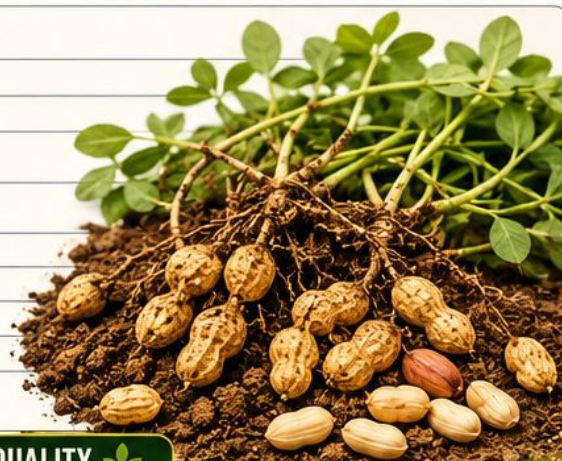


Weather Parameter	Sowing to Emergence	Vegetative Growth	Flowering & Pegging	Pod Development	Seed Filling	Maturity
Tmax (°C)	28–32	28–30	26–30	27–31	28–32	30–34
Tmin (°C)	20–22	20–22	20–22	20–23	18–20	16–18
RHm (%)	75–85	70–80	75–85	70–80	65–75	55–65
RHe (%)	65–70	60–65	65–70	55–60	50–55	45–50
SS (hr/day)	4–5	5–6	6–7	6–7	7–8	8–9
Rainfall (mm)	60–80	80–100	90–120	70–90	40–60	<20

CONGENIAL
WEATHER FOR
PEST/DISEASES



Leaf spot (Early & Late) (<i>Cercospora</i> spp.)	25–30 °C, RH >85%, cloudy weather with intermittent rains
Rust (<i>Puccinia arachidis</i>)	23–28 °C, RH >80%, frequent dew & cloudy weather
Collar rot (<i>Aspergillus niger</i>)	28–32 °C, dry soil conditions after sowing – low soil moisture
Aflatoxin contamination (<i>Aspergillus flavus</i>)	28–32 °C, RH 65–75%, drought stress followed by rain at maturity
Stem rot / Sclerotium wilt (<i>Sclerotium rolfsii</i>)	25–30 °C, RH >85%, high soil moisture & continuous rain
White grub (<i>Holotrichia</i> spp.)	25–30 °C, moist soil after early rains
Termites	28–32 °C, dry spells & low soil moisture
Aphids (<i>Aphis craccivora</i>)	20–28 °C, RH 70–80%, cloudy weather
Jassids (<i>Empoasca kerri</i>)	26–30 °C, moderate humidity (60–70%), cloudy & humid weather
Spodoptera (Leaf-eating caterpillar)	25–30 °C, RH 70–80%, continuous cloudy weather



TIMELY OPERATIONS + SUITABLE WEATHER = HIGHER YIELD & BETTER QUALITY

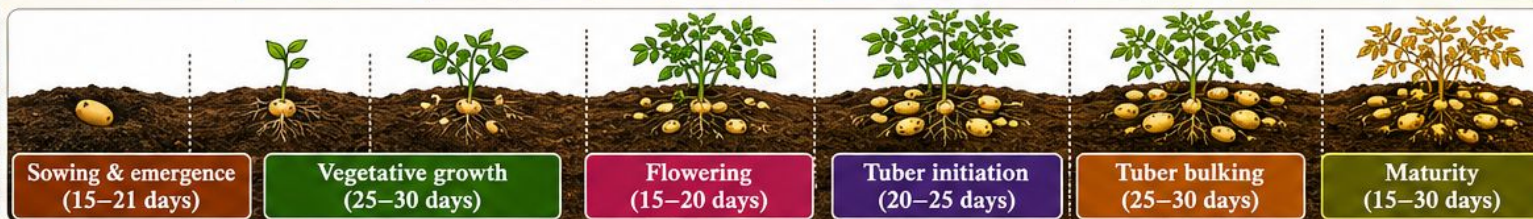
CROP-WEATHER CALENDAR OF 'POTATO' (*Solanum tuberosum* L.)



CLIMATIC NORMAL



Crop-	Potato																		
Month	October			November					December			January					February		
Std. week	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9
Tmax (°C)	31.0	30.2	30.1	29.7	29.6	29.2	28.7	28.5	27.8	27.8	27.8	28.0	28.5	28.9	29.5	30.2	31.0	32.1	32.7
Tmin (°C)	21.2	20.5	19.7	18.7	18.1	16.7	16.2	16.1	15.1	14.7	14.8	15.0	15.3	15.9	16.3	17.2	18.0	18.7	19.3
Rain (mm/week)	3.2	2.2	1.5	1.1	0.7	0.1	0.4	0.2	0.8	0.1	0.1	0.4	0.1	0.2	0.2	0.2	0.3	0.3	0.3
RH (%)	74.7	74.6	73.0	71.7	70.6	68.6	68.5	68.6	68.0	67.2	67.5	67.4	67.0	67.4	67.0	67.5	67.7	67.1	67.0



PHENOPHASE WISE WEATHER FOR BETTER YIELD



Phenophase wise weather for better yield	Sowing & emergence	Vegetative growth	Flowering	Tuber Initiation	Tuber Bulking	Maturity
Tmax (°C)	22–25	20–24	18–22	16–20	18–22	24–28
Tmin (°C)	12–15	10–12	8–10	7–9	8–10	10–12
RHm (%)	75–80	70–80	75–85	80–90	75–85	60–70
RHe (%)	60–65	60–65	65–70	65–70	60–65	50–55
Rainfall (mm)	20–30	10–20	10–15	10–20	<10	Nil

CONGENIAL WEATHER FOR PEST/DISEASES



Late blight (<i>Phytophthora infestans</i>)	Tmax: 18–22 °C, Tmin: 7–10 °C – RH >90% – Continuous cloudy/rainy weather with dew
Early blight (<i>Alternaria solani</i>)	24–28 °C – Moderate RH (70–80%) – Warm, humid conditions with intermittent rain
Black scurf & stem canker (<i>Rhizoctonia solani</i>)	Cool (15–20 °C), moist soil – High soil moisture at planting
Bacterial wilt (<i>Ralstonia solanacearum</i>)	28–32 °C – RH 80–90% – High rainfall & poorly drained soils
Common scab (<i>Streptomyces scabies</i>)	20–25 °C – Dry soil with low moisture during tuber formation
Potato virus diseases (PVY, PLRV)	15–25 °C – Spread favored by aphid activity in cool, humid weather
Aphids (<i>Myzus persicae</i> , <i>Aphis gossypii</i>)	18–25 °C – RH 65–80% – Cloudy, humid weather
Cutworms (<i>Agrotis</i> spp.)	20–28 °C – Dry weather followed by light rain
White grub / Soil pests	Warm (25–30 °C), moist soil



TIMELY OPERATIONS + SUITABLE WEATHER = HIGHER YIELD & BETTER QUALITY

