Farmer First Android Application
https://github.com/Shivam-gkms/Farmer_First

Farmer Service Portal
https://shivam-gkms.github.io/amfu/

CROP WEATHER CALENDAR AMFU KANPUR, U.P.

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Developed by
Chandra Shekhar Azad University of Agriculture & Technology, Kanpur (U.P.)
Under Gramin Krishi Mausam Sewa (GKMS)

Crop Weather Calendar of AMFU Kanpur, Uttar Pradesh

Agro-climatic Zone	Main Crops	Soil Type
Middle Gangetic Plain Region	Paddy, Wheat, Maize, Pulses, Oilseeds (Mustard), Vegetables	Alluvial Soil (Sandy Loam to Clayey Loam)

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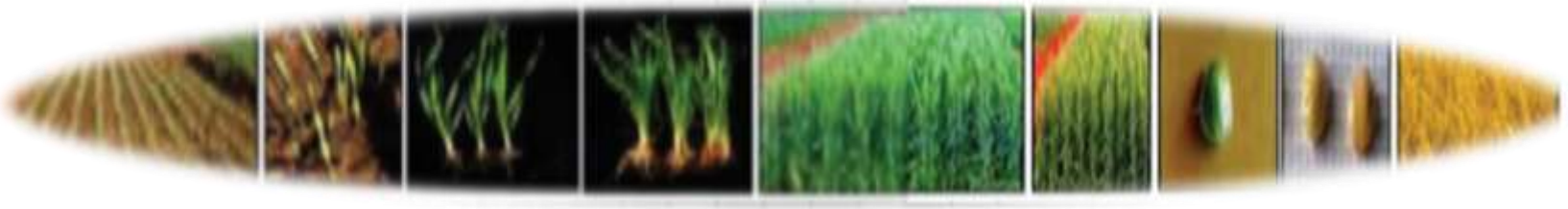
Crop-weather calendar of Rice (*Oryza Sativa* L.)

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 (^{0}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 (^{0}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		 Sowing					 Transplanting				 Active tillering					 Flowering			 Grain filling		 Physiological maturity	
	Tmax (^{0}c)	30–35°C					28–32°C				30–34°C					28–32°C				25–30°C		22–28°C	
	Tmin (^{0}c)	20–25°C					22–26°C				20–25°C					20–25°C				18–22°C		18–20°C	
	RHm(%)	85–95%					85–95%				80–90%					80–90%				75–85%		70–80%	
	RHe(%)	70–80%					70–80%				65–75%					65–75%				60–70%		55–65%	
	SS (hr./day)	6–7 hrs/day					4–5 hrs/day				5–6 hrs/day					6–7 hrs/day				7–8 hrs/day		8–9 hrs/day	
	Rainfall (mm)	30–50 mm					40–60 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)																					
	Sheath blight (*Rhizoctonia solani*)	Tmin: 20–25°C - RH: >90% - Continuous cloudy/rainy days - Poor air circulation (Tillering to heading)																					

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 (^{0}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 (^{0}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	26.8	0.0	0.6	32.2	0.0	0.0	0.0	0.0

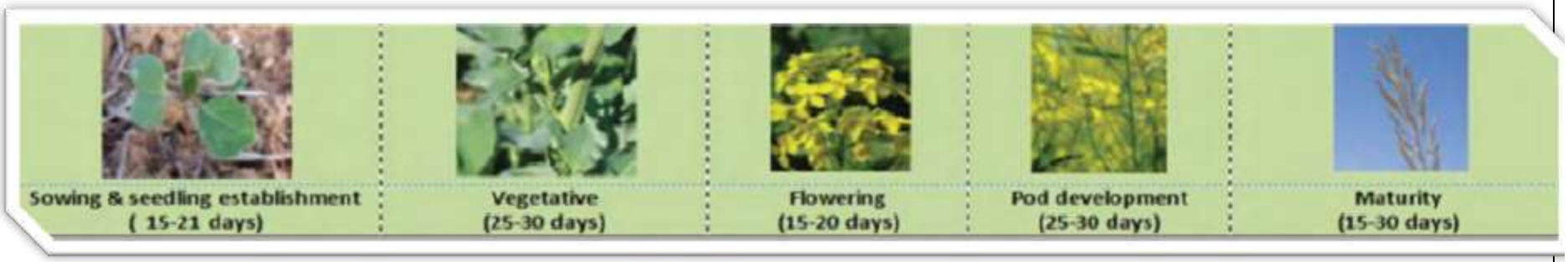


Phenophase wise weather for better yield	Sowing & emergence	Emergence to tillering	Tillering to heading	Heading to grain filling	Grain formation to maturity	Physiological Maturity
Tmax (^{0}c)	24–28°C	20–25°C	20–25°C	22–26°C	25–30°C	28–32°C
Tmin (^{0}c)	12–16°C	10–15°C	8–14°C	10–15°C	12–18°C	14–20°C
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%
Rainfall (mm)	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 (*Puccinia striiformis*)	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 (*Puccinia triticina*)	Tmax: 20–25°C - RH: 60–70% - Clear, warm days followed by cool nights - Light dew (Tillering to grain filling stage)
	Loose smut (*Ustilago tritici*)	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**

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 (^{0}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 (^{0}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	Sowing & emergence	Vegetative growth	Flowering	Siliqua formation	Seed development	Maturity
Tmax (^{0}c)	30–35°C	25–30°C	20–25°C	18–24°C	20–25°C	25–30°C
Tmin (^{0}c)	18–22°C	12–16°C	8–12°C	8–10°C	10–15°C	12–18°C
RHm(%)	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%
Rainfall (mm)	5–10 mm	<5 mm	<5 mm	Nil–2 mm	2–5 mm	Nil

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

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

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 (^{0}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 (^{0}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	Sowing to emergence	Knee height	Tasseling	Silk formation	Cob filling	Physiological maturity
Tmax (^{0}c)	28–32°C	30–35°C	30–35°C	30–34°C	28–32°C	25–30°C
Tmin (^{0}c)	20–24°C	22–26°C	22–26°C	22–26°C	20–24°C	18–22°C
RHm(%)	85–90%	80–85%	75–80%	75–80%	70–75%	65–70%
RHe(%)	70–80%	65–75%	60–70%	60–70%	55–65%	50–60%
Rainfall (mm)	40–60 mm	30–50 mm	20–40 mm	20–30 mm	15–25 mm	<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)
	Fall Armyworm (*Spodoptera frugiperda*)	Tmax: 28–34°C RH: 70–80% Sudden showers after dry spells (Emergence to cob formation)
	Turcicum Leaf Blight (*Exserohilum turcicum*)	Tmax: 20–30°C RH >90% Frequent fog or dew (Vegetative to reproductive)
	Downy Mildew	Tmax: 22–28°C RH >90% Cloudy, wet spells (Seedling stage)
	Stem Borer (*Chilo partellus*)	Tmax: 30–35°C RH: 70–80% Frequent light rain (Early vegetative to tasseling)

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

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 (^{0}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 (^{0}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	Sowing to emergence	Knee height	Tasseling	Silk formation	Cob filling	Physiological maturity
Tmax (^{0}c)	28–32°C	30–35°C	30–35°C	30–34°C	28–32°C	25–30°C
Tmin (^{0}c)	15–20°C	18–22°C	20–24°C	20–24°C	18–22°C	16–20°C
RHm(%)	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%
Rainfall (mm)	20–30 mm	15–25 mm	10–15 mm	10–15 mm	5–10 mm	<5 mm (dry at harvest)

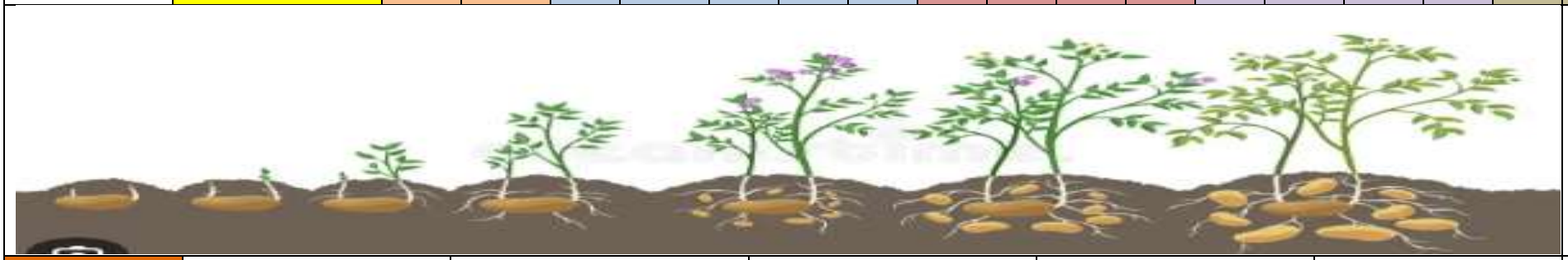
Congenial weather for pest/diseases		
	Stem Borer (*Chilo partellus*)	Tmax: 30–35°C - RH: 60–70% - Intermittent showers + cloudy days (Early vegetative to tasseling)
	Fall Armyworm (*Spodoptera frugiperda*)	Tmax: 28–34°C - RH: 60–80% - Bright, dry days followed by rain (Emergence to cob formation)
	Turcicum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

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

Climatic Normal		Crop- Chickpea (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	5	6	7	8	9	10	11
	Tmax (^{0}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	26.0	26.2	25.5	26.4	30.0
	Tmin (^{0}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	10.1	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	73	78
	RHe(%)	41	45	62	54	61	65	46	47	69	81	72	77	63	55	54	48	45	51	40	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	0.0
																					
Phenophase wise weather for better yield	**Sowing & emergence**	**Vegetative Growth**			**Flowering**				**Pod Formation**				**Pod Filling**				**Physiological Maturity**				
Tmax (^{0}c)	25–30°C	22–28°C			20–25°C				20–25°C				20–25°C				25–30°C				
Tmin (^{0}c)	10–15°C	10–15°C			10–12°C				8–12°C				8–12°C				10–15°C				
RHm(%)	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%				
Rainfall (mm)	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)																			

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 (^{0}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 (^{0}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	Sowing & emergence	Vegetative growth	Flowering	Siliqua formation	Seed development	Maturity
Tmax (^{0}c)	20–25°C	20–25°C	18–22°C	18–22°C	20–25°C	20–25°C
Tmin (^{0}c)	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%
Rainfall (mm)	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)

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

Climatic Normal	**Crop-**	**Groundnut (Kharif)**					**Duration –**															
	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 (^{0}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 (^{0}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				 																			
	Weather Parameter	**Sowing to Emergence**					**Vegetative Growth**				**Flowering & Pegging**					**Pod Development**				**Seed Filling**			**Maturity**
	Tmax (^{0}c)	28–32°C					28–32°C				26–30°C					25–30°C				24–28°C			28–32°C
	Tmin (^{0}c)	20–24°C					22–25°C				22–24°C					20–22°C				18–22°C			18–22°C
	RHm(%)	85–90%					80–85%				75–80%					70–80%				65–75%			60–70%
	RHe(%)	70–75%					65–70%				60–70%					55–65%				50–60%			45–55%
	SS (hr./day)	5–6 hrs					6–7 hrs				6–7 hrs					7–8 hrs				8 hrs			8–9 hrs
	Rainfall (mm)	30–50 mm					25–40 mm				20–30 mm					15–25 mm				5–10 mm			<5 mm (dry needed)
Congenial weather for pest/diseases	**Leaf Miner**	Tmax: 28–32°C RH: 70–80% Intermittent showers (Vegetative to flowering)																					
	White Grub	Tmax: 28–35°C Moist soils, cloudy weather (Sowing to early pegging)																					
	Tikka Leaf Spot	RH >85% Tmax: 26–30°C Cloudy, moist conditions (Vegetative to pod filling)																					
	Collar Rot / Stem Rot	Soil temp: 28–32°C Waterlogging or poorly drained soil (Germination to early pegging)																					
	Rust (*Puccinia arachidis*)	RH: 80–90% Temp: 25–30°C Foggy/cloudy mornings (Flowering to seed filling)																					

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

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 (^{0}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 (^{0}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	Sowing to Emergence	Vegetative Growth	Flowering & Pegging	Pod Development	Seed Filling	Maturity
Tmax (^{0}c)	32–36°C	34–38°C	30–35°C	30–34°C	28–32°C	32–36°C
Tmin (^{0}c)	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 (hr./day)	8–9	9–10	8–9	8–9	9–10	10–11
Rainfall (mm)	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)
	Rust (*Puccinia*)	RH >75% Warm humid conditions during late flowering and seed filling (Flowering to seed filling)

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

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 (^{0}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 (^{0}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	Sowing to Emergence	Vegetative Growth	Flowering	Pod Formation	Seed Development	Maturity
Tmax (^{0}c)	28–32°C	30–34°C	28–32°C	26–30°C	25–30°C	28–32°C
Tmin (^{0}c)	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 (hr./day)	4–5	3–5	4–5	5–6	6–7	7–8
Rainfall (mm)	40–60 mm	30–50 mm	20–30 mm	15–25 mm	10–20 mm	<10 mm

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)

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

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 (^{0}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 (^{0}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 (^{0}c)	32–36°C	34–38°C	32–36°C	30–34°C	30–34°C	34–38°C
Tmin (^{0}c)	20–24°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)

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

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 (^{0}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 (^{0}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	Sowing to Emergence	Vegetative Growth	Flowering	Pod Formation	Seed Filling	Maturity
Tmax (^{0}c)	28–32°C	30–34°C	28–32°C	26–30°C	26–30°C	30–34°C
Tmin (^{0}c)	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 (hr./day)	4–5	3–5	4–5	5–6	6–7	7–8
Rainfall (mm)	40–60 mm	30–50 mm	20–30 mm	15–25 mm	10–20 mm	<10 mm

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)

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

Climatic Normal	Crop- Greem Gram (Zaid)			Duration – 65-70 (Days)						
	Month	February		March				April		
	Std. week	11	12	13	14	15	16	17	18	19	20
	Tmax (^{0}c)	30.0	30.8	35.8	37.4	38.8	39.0	40.1	39.7	36.9	43.0
	Tmin (^{0}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

Phenophase wise weather for better yield	Sowing to Emergence	Vegetative Growth	Flowering	Pod Formation	Seed Filling	Maturity
Tmax (^{0}c)	32–36°C	34–38°C	32–36°C	30–34°C	28–32°C	34–38°C
Tmin (^{0}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

Congenial weather for pest/diseases		
	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)

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

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 (^{0}c)	33.3	33.9	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
Tmin (^{0}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	Capsule Formation	Seed Maturity
Tmax (^{0}c)	30–35°C	32–38°C	30–34°C	28–32°C	28–32°C
Tmin (^{0}c)	22–26°C	24–28°C	24–26°C	22–24°C	20–24°C
RHm(%)	70–80%	65–75%	70–80%	65–75%	60–70%
RHe(%)	60–70%	55–65%	60–70%	55–65%	50–60%
SS (hr./day)	6–7	7–9	6–7	7–8	8–9
Rainfall (mm)	30–40 mm	25–35 mm	15–25 mm	10–15 mm	<10 mm

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)
	Leaf Roller & Capsule Borer	Tmax: 30–35°C RH: 60–70% Intermittent rainfall (Flowering to capsule stage)

Crop Weather Calendar of Auraiya District, Uttar Pradesh

Agro-climatic Zone	Main Crops	Soil Type
Middle Gangetic Plain Region	Paddy, Wheat, Maize, Pulses, Oilseeds (Mustard), Vegetables	Alluvial Soil (Sandy Loam to Clayey Loam)

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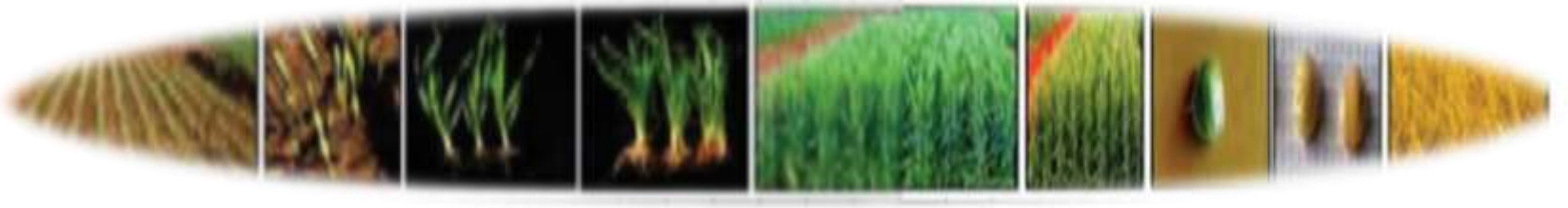
Crop-weather calendar of Rice (*Oryza Sativa* L.)

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 (^{0}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 (^{0}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 (^{0}c)	32–36					30–34				28–32					26–30			25–30			24–28
	Tmin (^{0}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																					

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 (^{0}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	24.7	25.9	26.7	28.1	29.1	30.6	30.8
	Tmin (^{0}c)	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	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	1.3	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	73.7	72.4	71.6	71.1	70.0	69.7	67.9	67.4	66.3	67.8

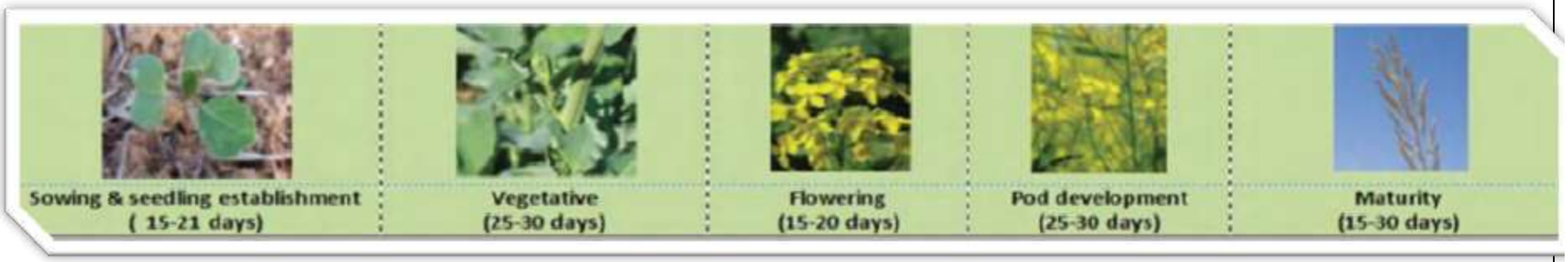




Phenophase wise weather for better yield	Sowing & emergence	Emergence to tillering	Tillering to heading	Heading to grain filling	Grain formation to maturity	Physiological Maturity
Tmax (^{0}c)	24–28	22–26	20–25	22–26	26–30	28–32
Tmin (^{0}c)	12–16	10–14	8–12	10–14	12–16	14–18
RHm(%)	75–85	70–80	65–75	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

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 (^{0}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 (^{0}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

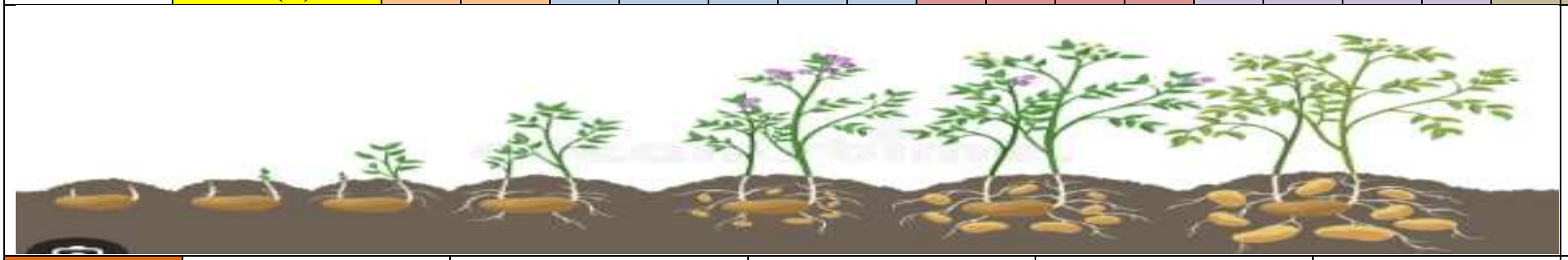


Phenophase wise weather for better yield	Sowing & emergence	Vegetative growth	Flowering	Siliqua formation	Seed development	Maturity
Tmax (^{0}c)	24–28	22–26	20–24	20–25	24–28	28–30
Tmin (^{0}c)	12–16	10–14	8–12	10–14	12–16	14–18
RHm(%)	70–80	65–75	60–70	60–70	55–65	50–60
RHe(%)	60–70	55–65	50–60	50–60	45–55	40–50
Rainfall (mm)	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

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 (^{0}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 (^{0}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 weather for better yield	Sowing & emergence	Vegetative growth	Flowering	Tuber Initiation	Tuber Bulking	Maturity
Tmax (^{0}c)	24–28	20–26	20–25	18–22	20–24	24–28
Tmin (^{0}c)	12–16	10–14	10–12	10–12	10–14	12–16
RHm(%)	75–85	80–90	80–85	85–90	80–85	65–75
RHe(%)	65–75	70–80	65–75	70–80	65–70	55–65
Rainfall (mm)	5–10	<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