



CROP WEATHER CALENDAR AMFU KANPUR, U.P.

**DR. NAUSHAD KHAN
MR. AJAY KUMAR
MR. SHIVAM MISHRA
DR. C.B. SINGH**

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

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

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

Middle Gangetic Plain
Region

Main Crops

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

Soil Type

Alluvial Soil (Sandy Loam to
Clayey Loam)










Developed by


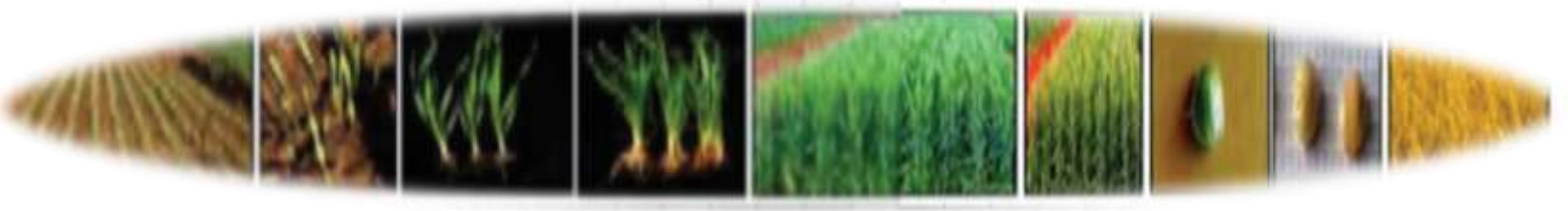

Chandra Shekhar Azad University of Agriculture & Technology, Kanpur (U.P.)

Under Gramin Krishi Mausam Sewa (GKMS)

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


Climatic Normals	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	0.0	0.0			
Phenophase wise weather for better yield																										
		Sowing					Transplanting				Active tillering					Flowering				Grain filling				Physiological maturity		
	Tmax (°c)	30–35°C					28–32°C				30–34°C					28–32°C				25–30°C				22–28°C		
	Tmin (°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 rainVegetative 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 Normals	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	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 (°c)	24–28°C		20–25°C				20–25°C				22–26°C				25–30°C		28–32°C			
Tmin (°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 (<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																	

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


Climatic Normals	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	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




Sowing & seedling establishment
(15-21 days)




Vegetative
(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	Siliquea formation	Seed development	Maturity
Tmax (°c)	30–35°C	25–30°C	20–25°C	18–24°C	20–25°C	25–30°C
Tmin (°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 (<i>Lipaphis erysimi</i>)	Tmax: 20–25°C - RH: 70–80% - Cloudy weather with light drizzle (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)
	Downy Mildew	Cool, moist conditions - RH >85% - Intermittent light rains (Vegetative to early flowering)
	Alternaria Blight (<i>A. brassicae</i>)	Tmax: 20–28°C - RH >85% - Prolonged cloudy weather (Pod formation to maturity)








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

Climatic Normals	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	Sowing to emergence		Knee height		Tasseling		Silk formation		Cob filling		Physiological maturity								
Tmax (°c)	28–32°C		30–35°C		30–35°C		30–34°C		28–32°C		25–30°C								
Tmin (°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 Normals	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	Sowing to emergence		Knee height			Tasseling			Silk formation			Cob filling			Physiological maturity					
Tmax (°c)	28–32°C		30–35°C			30–35°C			30–34°C			28–32°C			25–30°C					
Tmin (°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 Normals		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 (°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 (°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 (°c)	25–30°C	22–28°C			20–25°C			20–25°C				20–25°C				25–30°C					
Tmin (°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 Normals	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	Sowing & emergence		Vegetative growth			Flowering			Siliqua formation			Seed development			Maturity						
Tmax (°c)	20–25°C		20–25°C			18–22°C			18–22°C			20–25°C			20–25°C						
Tmin (°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 Normals	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																													
	Weather Parameter		Sowing to Emergence				Vegetative Growth				Flowering & Pegging				Pod Development				Seed Filling				Maturity						
	Tmax (°c)		28–32°C				28–32°C				26–30°C				25–30°C				24–28°C				28–32°C						
	Tmin (°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 Normals	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	Sowing to Emergence		Vegetative Growth		Flowering & Pegging			Pod Development			Seed Filling			Maturity			
Tmax (°c)	32–36°C		34–38°C		30–35°C			30–34°C			28–32°C			32–36°C			
Tmin (°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 Normals	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	Sowing to Emergence			Vegetative Growth		Flowering		Pod Formation		Seed Development		Maturity			
Tmax (°c)	28–32°C			30–34°C		28–32°C		26–30°C		25–30°C		28–32°C			
Tmin (°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 Normals	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)	32–36°C			34–38°C		32–36°C		30–34°C		30–34°C		34–38°C	
Tmin (°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 Normals	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	Sowing to Emergence		Vegetative Growth		Flowering		Pod Formation		Seed Filling		Maturity				
Tmax (°c)	28–32°C		30–34°C		28–32°C		26–30°C		26–30°C		30–34°C				
Tmin (°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 Normals	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 (°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	
												
Phenophase wise weather for better yield	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	
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 Normals	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	39.0	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	Capsule Formation	Seed Maturity
Tmax (°c)	30–35°C	32–38°C	30–34°C	28–32°C	28–32°C
Tmin (°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)