

	Chrysanthemum	Jasmine	Marigold	Rose	Lily
Botanical name	Chrysanthemum indicum	Jasminum spp.	Tagetes patula	Rosa spp.	Lilium longiflorum
Origin	Asia	Mexico	Mexico		South canada & Asia
Family	Compositae	Oleaceae	Compositae	Rosacea	Liliaceae
Soil	Well drained Lomay soil. Waterlogged soil-root decay	Well drained Lomay soil. Clayey soil-Vegetative growth(Not useful)	Lomay	Lomay	Sandy loamy
pH	6.5-7	6-7.5	6.5-7	6.5-7	6-6.5
Climate	Vegetative growth require long day with 20-27°C & Flowering requires Short day with 10-17°C.	20-25°C & require hot & dry climate	20-25°C & severely affected by cold	Night 18-20°C, Day 24-28°C, Light intensity 6000-7000 lux, CO2 conc. 800-1200 ppm, RH 60-65%	Night 8-10°C, Day 15-20°C, Soil 16-20°C If temp>30°C flower & bud damage
Varieties	Incurred (Snowball), Reflexed (Sweetheart), Spider (Mahatma gandhi), K.single (Chairman), K.double (Manbhavan), Decorative (Alankar)	Jai (CO-1,2) Jui (CO-1,2, Short point, Medium point) Mogra (Single,Double, Ramban,Madanban) Kunda (Kakada)	African (Pusa narangi genda, Pusa basanti genda) French (Rusty red,Gypsi, Star of India) French hybrid (Calcutta orange)	Red (Big B), Yellow (Gold strike & mercedes), Orange (Naranga), White (Avilach), HybridT (Gladiator, Superstar,First prize), Floribunda (Iceberg, Banjaran,Queen Elizabeth)	Pulsor,Negro,Montee, Dream,Dream land, Red carpet, Vivaladi, London
Propagation	Root suckers, Terminal stem cutting.	Hardwood cutting, Layering	Seeds,General(500-700gm), Hybrid(100 gm)	T-budding,Stem cutting	Bulblets,Bulbs,Bulbils, Scales,Seeds
Planting	Ridges & Furrows	Ridges & Furrows	Raised beds	Raised beds	Raised beds
Spacing	30×30 cm/ 30×45 cm	Jai,Jui,Kunda 1.8×1.8 m Mogra 1.2×1.2 m	60×60 cm/45×45 cm	40×15 cm/ 40×17 cm	25×15 cm
Planting Age		2-3 months	1 month	2-3 months	-
Planting time	April-May(Suckers) Aug(Cutting)	June-Aug	July,Sept,Jan,Mar	Budding(Nov-Dec), June-July	Oct-Nov
FYM	15-20 tonn/ha	40-50 tonn/ha	20-25 tonn/ha	5-10 kg/plant/yr	4-5 kg/m2
NPK	200:200:200 kg/ha	100:50:50 kg/ha	100:50:50 kg/ha	100:70:70 gm/plant/yr	20:10:10 gm/m2
Harvesting	5-6 MAP, Suckers(Sept-Oct),Cutting(Dec), Harvested without stalk	Harvested in unopened condtion early in morning, loose flowers are used in Gajra,veni & Opened flowers in oil extraction. Very short post havest life so needed to be sent to the market very immediately.	1.5-2 MAP, harvested without stalk & packed in bamboo basket to send to the market.	Harvested 45 DAP(prunning) at tight bud stage & along with stem,two leaflets. Dethorning is done & 400 flowers are packed per CFB. Stored at 0-4C for 1-2 hrs. They are sorted according to stem length of 40-60 cm & 70 cm.	Harvested when buds develop full colour & not yet opened,Harvested with stalk & 6 in each bundle, stored at 0-2C for 1-2hrs. After 1 month of flowerer harvesting, bulbs &bulblets are lifted from soil when leaves dry down. Then treated with Captan 0.25% & stored at 2-3C for 3 months.
Yield	10-12 tonns flowers/ha	Jai-jui 6-10 tonns/ha Mogra 4-8 tonns/ha	General 8-10 tonns/ha Hybrid 12-15 tonns/ha	100-125 flowers/m2	Flowers 1-1.2 lakhs/ha Bulbs 1.25-1.50 lakhs/ha
Special operations	Pinching -Removal of growing tip along with few leaves first- 1 MAP, second- 2 MAP. Disbudding -Removal of all flower buds & keeping only one flower bud per stem to obtain big sized flowers. Deshooting -Removal of all side shoots. Staking - Single stem staking	Bahar treatment -water stress in nov-dec. Maintains C:N ratio & induce more flowering. Prunning - Flowers are borne only on current season shoot. PGR treatment - Ethrel @ 1000 ppm to induce early flowering.	Earthing up - 3 weeks after planting. Pinching - Done after 1 MAP for more no of lateral branches & bushy growth.	Bending - for more leaf area & strong root system. Weak & blind shoots are bent by removing buds. Prunning- Light prunning in June -July & Moderate-Hard prunning in October for developing strong framework & shape. Main reason is to develop new branches as flowers are borne only on current season shoots. Hard prunning-Exhibition & Moderate Commercial cultivation.	Staking is most essential because it grows 60-180 cm tall & need support to grow.

	Gerbera	Gladiolus	Tuberose
Botanical name	Gerbera jamesonni	Gladiolus tristis	Polyanthus tuberosa
Origin	South Africa	South Africa	Mexico
Family	Asteraceae	Iridaceae	Amaryllidaceae
Soil	Red or light loamy	Loamy soil	Sandy loamy
pH	5.5 to 6.5	6 to 7	6.5 to 7.5
Climate	Sunny and mild climate night temp 12-16°C Day temp 18-10°C Temp below 32°C-adverse effect on flower	Moderate temp & humidity for more flowering while sunny situation for quality flowers Temp 15 to 25°C	Moderrate temp & humidity; temp 15-30°C adversely affected by very high temp and frost
Varieties	Pink -Pink elegans,Rosalin Red -Savana,Salvador,Sangiria, Zingaro Yellow -Dana ellen, Calcutta yellow, Golden gate Orange -Dune,Goliath White -Blessing,Winter queen, Calcutta white	Snow princess,White friendship,Suchitra,Sapana,Apsara	Single flower -Calcutta single, Bangalore single Double flower -Pearl,Suhasini Varigated single -Rajat rekha & Suvarn rekha Varigated double -Dhawal
Propagation	Division of cumps(In June) & Micropropagation	Corms (diameter 4-5 cm & wt 20-30 gm with conical shape) treated with 0.1% bavistin or 0.3% captan for 30 min	Bulbs (diameter 1.5-2 cm wt 30-60 gm) 0.3% captan for 30 min
Planting	Raised beds(45*70*300-400cm)	Ridges & furrows corm rate- 1.60 lakh corms/ha	On flat beds 1.5-2 lakh bulbs/ha
Spacing	30*30 cm	20*20 or 30*30 cm	30*20 cm or 20*15 cm
Planting Age	1-2 months		
Planting time	June-July or Jan-Feb	Sept-Oct	Mar-Apr or May-June or Sept-Oct
FYM	1-2 t neem cake + 1 t vermicompost	40-60 t FYM/ha	40-50 tfym/ha
NPK	15:20:20 gm/sq.m (at planting) 19:19:19,16:8:24,0:52:34 @ 1-2 kg/ha	300:200:200 kg NPK/ha full fym+P+K before planting & 1/2 N at 4-6 leaf stages & 1/2 N after 1.5 MAP	200:300:200 kg NPK/ha At planting Fym+P+K+1/4 N & remaining N in 3 split doses 1,2,3 MAP
Harvesting	2.5-3 MAP When outer two rows of disc florets are perpendicular to stalk. Kept in 200 ppm 8 HQC + 3% Sucrose; Polythene is wrapped at base of flower to prevent petal dislocation	Early var 60-70 DAP & Late Var 80-90 DAP. For local market lowermost 1-2 flower buds fully opened & for distant market fully developed colour and unopened; kept in 300-600 ppm 8 HQC + 4% Sucrose	Cut flower-Lowerost 1-2 flower buds are opened Loose flowers-Fully developed and unopened. Placed in wet cotton cloth under shaddy place
Yield	200-250 flowers/sq.m	2-3 Lakh flower spike/ha & 10-15 t corms/ha	Single flower 6-8 t/ha Double flower 12-15 t/ha Bulb 12-15 t/ha
Special operations			

	Lemon grass	Citronella	Mentha	Geranium	Vetiver
Botanical name	<i>Cymbopogon flexuos</i>	<i>Cymbopogon nardus</i>	<i>Mentha arvensis</i>	<i>Pelargonium gravotens</i>	<i>Vetiveria zizinioides</i>
Family	Gramineae	Gramineae	Labiteae	Geranaceae	Gramineae
Plant part used	Leaves	Leaves	Leaves	Leaves	Leaves
Principle	Citral	Citronellol	Menthol	Geraniol	Vetiverol
Soil	Light,medium,heavy soil	Light,medium,heavy soil	Sandy loamy to loamy soil	Red lateritic, Ca rich	Sandy soil
Climate	Hot & Humid climate	Hot & Humid climate	Temperate to cool	Temp 5-23°C & temp below 3°C + frost causes injury	Mild to Hot & Humid climate
Varieties	Krishna,Kaveri,Pragati, Peaman,QD-19	Mandakini,Manjusha, Rahuri-1	Himalaya,Gomati, Shiwalik	Kodaokanal-1	Hybrid-1,7,8, Bhartapur, Nimohar, Sugandha
Propagation	Rooted slips & Seeds	Rooted slips	Suckers	Stem cutting	Rooted slips
Spacing	60×60 cm	60×60/90×90 cm	60×30 cm	60×60/45×45 cm	45×30 cm
Seed rate	2.5 kg seeds	18-20 thousands/ha	500 kg/ha	-	1-1.5 lakh/ha
Planting time	June-July	June-July	June-July & Jan-Feb	June-July	June-July
FYM	10-15 t/ha	10-15 t/ha	20-25 t/ha	20-25 t/ha	10-15 t/ha
NPK	60:40:40 kg/ha	60:40:40 kg/ha	120:60:40 kg/ha	80:60:60 kg/ha	80:60:40 kg/ha
Harvesting	First harvesting 4-5 MAP & then regularly at 2-3 months interval. Plants are cut at 15-20 cm above ground level	First harvesting 4-5 MAP & then regularly at 2-3 months interval. Plants are cut at 15-20 cm above ground level	First harvesting after 4-5 MAP & then regularly at 3 months interval. After every harvesting 60 kg is applied.	First harvesting 8-9 MAP & then regularly at 3-4 months interval	18-19 MAP. Roots are dug out,separated from stem portion & sundried for 2-3 days.
Yield	Grass 50-100 t/ha First yr 80-100 kg oil/ha Second yr 200-300 kg oil/ha	First yr 80-100 kg oil/ha Second yr 200-300 kg oil/ha	Leaves 30-40 t/ha oil 150-200 kg/ha	Leaves 20-25 t/ha Oil 20-15 kg/ha	Roots 5-7 t/ha Oil 15-20 kg/ha
Special operations					

	Periwinkle	Aloevera	Isabgaol	Asapragus
Botanical name	Vinca rosea	Aloe vera	Plantago ovato	
Family	Apocynaceae	Liliaceae	Plantaginaceae	
Plant part used	Leaves, stems, roots	Leaves	Seeds & husk	
Principle	Vincristin, Vinblastin, Ajmalin, Reserpine	Alaetin, Barbalin, Galic acid	Mucilage (Xylose)	
Soil	Sandy loamy	Light, medium, heavy clay	Sandy loamy to loamy	
pH	Tropical to subtropical	Hot & dry	Cool & dry	
Propagation	Seeds	Suckers	Seeds	
Planting		Raised beds	Flat beds	
Spacing	45×45 cm	30×30/45×45 cm	15×15 cm	
Seed rate	2.5 kg/ha	20,000/ha	4-6 kg/ha	
Planting time	June-July	June-July	Oct-Nov	
FYM	10-15 t/ha	10-15 t/ha	10-15 t/ha	
NPK	75:75:75 kg/ha	80:30:30 kg/ha	60:30:30/30:30:30 kg/ha	
Harvesting	Leaves are harvested after 6, 9, 12 MAP & roots after 12 MAP	10-12 MAP. Leaves are cut with the help of sickle	4 MAP. When seed to husk ratio is 75:25	
Yield	Roots 1-1.5 t/ha Stem 1-1.5 t/ha Leaves 2-3 t/ha	20-30 t/ha	Seed 1-1.5 t/ha Husk 0.2-0.3 t/ha	
Special operations				