1.Rice :

Rice is the most important food crop of India covering about one-fourth of the total cropped area and providing food to about half of the Indian population.

It can be grown on a variety of soils with low permeability and pH varying from 5.0 to 9.5. Sandy loam to loamy sand to silty loam to clay loams, silty to clayey loam soils with low permeability, free of water logging and sodicity are considered best for paddy cultivation.

8kg seeds are sufficient for planting in one acre land.

20 may to 5 june is the optimum time for sowing

For normal sown crop a spacing of 20 - 22.5 cm between rows is recommended. When sowing is delayed a closer spacing of 15-18 cm should be adopted.

2.Maize:

Maize (Zea mays L) is second rated grain that is used collectively in form of foodstuff or fodder. By growing maize, farmers can easily shield the deteriorating grade of soil , preserve 90% of water and 70% of potency as compared with paddy and can make more profit than wheat and paddy.

For cultivation selected land should be free from weeds and remains of previously grown crop. Plough the land to bring the soil to fine tilth. It may take 6 to 7 plough. Apply 4-6 tons/acre of well decomposed cow dung across the field, also apply 10 Azospirillum packets in field. Prepared furrow and ridges with 45 cm to 50cm spacing.

The crop is sown in the month of mid-October - November.

3.Chickpeas

Chana or Chickpeas is a Rabi Crop and sown between October-November. The plant of chickpea is bushy and grows up to 18 inches in length. It is a cool-season legume that grows best between 70-80 degrees .. The crop may be sown by seed drill or local plow and row spacing should be 30-40 centimeters. For one hectare land a seed rate of 75-100 kg per hectare will be sufficient, depending upon seed size. If the soil needs nitrogen as well as phosphorous, then di-ammonium phosphate (18-46-0) at the rate of 100 to 150 kg per hectare should be applied uniformly before the last plowing. The results are quite better if all the fertilizers are drilled in furrows at a depth of 7-10 centimeters. The Superior Desi Chickpeas were being traded around Rs.4900/quintal as on September 7, 2020. Farmers normally obtain around 8 quintal crop per acre. So the net realization in selling 8 quintals will be Rs.39200. Therefore after deducting the production cost, overall profit from one acre of land will be Rs.27500 (approximately).

4.Kidneybeans:

Kidney beans are a good source of protein also it is excellent source of molybdenum. It can be grown on wide range of soils from light sandy to heavy clay soils. Well drained loamy soil is good for kidney beans cultivation. It is very sensitive to saline soils. Give two to three ploughing to bring soil at fine tilth. Make field level so that water stagnation should not occurred in main field. Crop is very sensitive to water logging. At last ploughing apply Farmyard Manure or well decomposed cow dung@60-80qtl/acre. For spring season, best time for Kidney beans cultivation is February-March and for Kharif season, it is sown during May-June month.

5.Pigeonpeas

Pigeonpea , commonly known as red gram or tur or Arhar. After gram, arhar is the second most important pulse crop in the country. It is mainly eaten in the form of split pulse as ‘dal’.

t is successfully grown in black cotton soils, well drained with a p H ranging from 7.0 - 8.5. Pigeonpea responds well to properly tilled and well drained seedbed. A deep ploughing with soil turning plough in fallow/waste lands, zero tillage sowing under intensive cropping system and Broad Bed Furrow/Ridge - furrow planting in low lying as well as intercropping areas is recommended.

All the fertilizers are drilled in furrows at a depth of 5 cm. and at the side of 5 cm. from seed. Apply 25 - 30 kg N, 40 - 50 k g P 2 O 5 , 30 kg K 2 O per ha area as Basal dose at the time of sowing.

5.Mothbeans:

Moth bean is a native crop of hot and dry habitats. These very adjusting abilities have rendered this crop as an indispensable component of cropping system prevailing in dry regions. The best sowing time is from May-June.Late sowing can be done in the end of June or by mid of July. They do not require additional fertilizer. They are normally grown on abandoned and less managed soils which are naturally poor in physical properties defective in organic matter. The application of fully disintegrate FYM to the tune of 20-25 tonnes per hectare should be applied to improve organic carbon and physical properties of the soil. With improved technologies, it gives 6-8 quintal gran yield.12-25 quintal/ha green fodder yield can be achieved if it is cultivated for fodder.

6.Mungbean

Green gram also known as moong is one of the main pulse crop of India.. It can be cultivated as Kharif as well as summer crop. It can be cultivated on wide range of soil. Gives best result when grown on well drained loamy to sandy-loam soils. Saline and water logged soils are not suitable for cultivation. To bring soil to fine tilth give two to three ploughing. After each ploughing carry out planking. Optimum time for kharif sowing is first fortnight of July. Optimum time for summer moong cultivation is from March to April. For Kharif season, use seed rate of 8-9 kg/acre whereas for summer season used seed rate of 12-15 kg/acre. Moong is mainly grown as a kharif crop. If needed provide irrigation depending upon the climatic conditions.

7.Blackgram

 It is one of the important pulse crop grown throughout India. Generally it is consumed in the form of ‘Dal’. It is generally grown in kharif/rainy and summer season. It grows best in hot and humid condition with ideal temperature range between 25 to 35oC. Heavy rains during flowering are harmful.  Good land preparations are necessary for better yield of black gram.  
 Land should be ploughed in summer followed by two to three harrowing at pre-monsoon for kharif season.  
For summer black gram, after harvest of rabi crops, field prepare with criss-cross moghda once followed by two harrowing. Irrigation is not needed in rainy season, but in summer season irrigation should be given as per critical stages and availability of irrigation water. Number and frequency of irrigation depend upon the soil type and weather. The crop should get irrigation at an interval of 10-15 days. The pods or whole crop after complete drying should be threshed manually or by machine. A well managed crop, as indicated above, may produce 12 to 15 quintals of grain per hectare.

8.lentil:

Lentil is also called as Masur and Malka (bold seeded). Lentil requires cold climate. It is very hardy and can tolerate frost and severe winter to a great extent. It require cold temperature during its vegetative growth and warm temperature at the time of maturity. The optimum temperature for growth is 18-300 C. Its range of cultivation extends to an altitude of 3,500 m in north-west hills.Well drained, loam soils with neutral reaction are best for lentil cultivation. Acidic soils are not fit for growing lentil. The soil should be friable and weed free so that seeding could be done at uniform depth. Recommended sowing time for Rainfed : First fortnight of October in Central and South India and second fortnight of October in North India. Sowing should be done in rows 30 cm. apart and it should be sown at a lower depth (3 - 4 cm).

Two manual weeding, one at 25-30 days and another 45-50 days after sowing should be done. Weedicide like Pendimethalin 30 EC @ 0.75 - 1 kg a.i. per hectare may be used as a pre-emergence treatment. A weed-free period of early 45 - 60 days is important.

9.pomegranate:

 Pomegranate can be grown on variety of soils. For optimum growth and yield, it required deep loamy and alluvial soils. It is tolerant to loamy and slightly alkaline soils. It is also cultivated on poor soils. Also medium and black soils are suitable for pomegranate cultivation. Plough the land for two - three times and bring soil to fine tilth. After then carry out planking operation to make land leveled and uniform. Mainly sowing is done in December to January month. For initial two-three years, 50gm per plant every year in two equal splits. First dose is given in March month and second dose is given in April month. After 5 years start adding urea@250gm per plant. When fruit changes its color from green to light yellow or red i.e fruits start ripening, it is optimum time for harvesting. Avoid delay in harvesting as it will lead to fruit cracking and thus leads to yield loss. After harvesting, stored fruits in shades for a one week. It will help in hardening of fruit skin. So that less damage is observed in transportation. Fruits are graded according to weight.

10. banana:

Banana is the oldest and commonest fruit known to the mankind. Being a tropical crop, banana requires warm, humid and rainy climate. The optimum temperature range is 10 to 400C and the relative humidity is 90% or above. It is highly susceptible to frost and cannot tolerate arid conditions. Strong desiccating winds cause considerable reduction in the growth of the plant and yield and quality of fruits. Commercial edible bananas do not produce viable seeds. So, the banana is commonly propagated by suckers and sword suckers with narrow leaves.. Banana is a quick growing and short-lived plant. In Maharashtra, 100 g N, 40 g P2O5 and 100 g K2O per plant is recommended. Out of these, P2O5 and K2O is applied at the time of planting and N is given is three split doses: third, fourth and fifth month after planting.

11. mango

Mango is the most ancient among the tropical fruits. he mango flowers and fruits during dry season, which is characterized by absence of rainfall. Rain or cloudy weather at the time of flowering causes considerable damage to mango as it adversely affects flowering and fruit set and increases incidence of pests and diseases. It grows where temperature drops as low as 00C. And as high as 460C. However, it thrives best at temperature around 270C. It grows well both in low (25 cm) and high (250 cm) rainfall areas. However with annual rainfall around 75 cm, it grows without irrigation. The coconut palm can grow in a wide range of soil conditions ranging from laterite, alluvial, red, sandy loam having pH range from 5.5 to 8.0.

12.grapes:

The grape is the most important crop grown in the world. Mostly it grown for making wines and preparation of raisin and then as a table fresh fruit.

The grape is widely adopted to various soil conditions, but the yield and quality reach to the highest on good fertile soils have pH 6.5 to 8.5, organic carbon above 1.0%, free of lime and having a medium water holding capacity.The size of trench may be 60 to 75 cm. Deep wide. Then these trenches are filled with FYM, organic manures, 5:10:5 organic mixtures, single super phosphates, biofertilisers, neem cakes, etc. Spacing for planting is maintained depending on soil type, variety and method of training. The distance between two rows may be 2 to 3 m while distance between vines within a row will be half of that, accommodating vines from 2000 to 5000 per hectare. while for drip irrigation, 40-50 L; 30-40, 20-30 L of water per day per vine, water is applied.

13.Watermelon :

Watermelon grows well in deep fertile and well-drained soil. It gives best result when grown on sandy or sandy loam soil. Soil having poor drainage capacity is not suited for watermelon cultivation. Follow crop rotation as continuous growing of same crop on same field leads loss of nutrients, poor yield and more disease attack. pH of soil should be in between 6-7. In north it is sown during middle of January to March and in November to December. For sowing one acre land, seed rate of 1.5 to 2 kg is required.

14.muskmelon:

It grows well in deep fertile and well-drained soil. It gives best result when grown on well drained loam soil. Soil having poor drainage capacity is not suited for Muskmelon cultivation. Follow crop rotation as continuous growing of same crop on same field leads loss of nutrients, poor yield and more disease attack. pH of soil should be in between 6-7 Alkaline soil with high salt concentration is not suitable for cultivation.Middle of February is optimum time for muskmelon cultivation. For sowing in one acre land, seed rate of 400gm seeds are required.

15.apple:

Apple (Malus pumila) is commercially the most important temperate fruit and is fourth among the most widely produced fruit. For the good growth of any crop, a suitable climate is a factor that farmers highly consider. Likewise, farmers need to understand the climate required for apple farming to get high apple production. Apple crops can grow at altitudes 1,500 m to 2,700 m. above sea level. A suitable temperature for apple growing should be around 21 C to 24 C.

16.orange:

Oranges grow successfully in all frost free tropical and sub-tropical regions upto 1,500 m. above m.s.l. An annual rainfall of 100-120 cm. and temperature ranging from 100-350 C is suitable for cultivation of the crop.  
Oranges can be grown in a wide variety of soils but medium or light loamy soils with slightly heavy sub-soil, well-drained with pH of 6.0-8.0 are ideal for cultivation. Orange is propagated by seeds and also vegetatively propagated by T-budding. Seedlings are mostly transplanted in the month of July-August after commencement of monsoon.

17.papaya:

Being a tropical plant a tropical weather is most suited for papaya plantation. It can grow in almost all types of soils. Being a tropical crop, papaya crops need a high level of humidity and temperature. It is sensitive to frost and heavy rains can cause damage. A neutral to near neutral soil can be used for papaya cultivation. The pH can be between 5.5 and 7.5. Papaya is planted during monsoon, autumn and spring season. It is not planted during winter as the frost can cause damage or injury to the crop. In other words, they are planted during the months of June-July (monsoon), October-November (autumn) or February-March (summer).

18.coconut:

The coconut palm is found to grow under varying climatic and soil conditions. It is essentially a tropical plant, growing most!y between 20° N and 20° S latitudes. The ideal temperature for coconut growth and yield is 27 ± 5° C and humidity > 60 per cent. The coconut palm grows well upto an elevation of 600 m above MSL. However, near the equator, productive coconut plantations can be established up to an elevation of about 1000 m above MSL. The palms tolerate wide range in intensity and distribution of rainfall. However, a well distributed rainfall of about 200 cm per year is the best for proper growth and higher yield. In areas of inadequate rainfall with uneven distribution, irrigation is required.

19.cotton:

Cotton is a plant that needs a long frost-free period, a lot of heat and plenty of sunshine. It prefers warm and humid climate. Cotton seeds will have a small germination rate, if the soil temperature is below 60°F (15°C). During active growth, the ideal air temperature is 70 to 100°F (21-37°C). Temperatures well above 100°F are not desirable. However, the average cotton plant can survive in temperatures up to 110°F (43°C) for short periods without great damage, but this also depends on the humidity levels. In order to cultivate cotton plants successfully, we shall not have frequent rainfalls during the maturing (summer) and during the days of harvest (during autumn).

20.jute:

**Temperatures ranging to more than 25 °C and relative humidity of 70%–90%** are favorable for successful cultivation. Jute requires 160–200 cm of rainfall yearly with extra needed during the sowing period. River basins, alluvial or loamy soils with a pH range between 4.8 and 5.8 are best for jute cultivation.

21.coffee:

Coffee is a tropical plant which is also grown in a semi-tropical climate. This plant requires heat, humidity and abundant rainfall to grow and yield well. Coffee requires an average temperature of 15℃ to 28℃ . Growth of the coffee plants is very rapid during the hot rainy season and during the cool dry season the berries get ripened and ready to be plucked. Bright sunshine and warm weather are necessary for harvesting. Coffee needs abundant rainfall that is nearly 100-200 cm annually. The hill slopes that receive orographic rain are thus best suited for coffee cultivation.