**Major Crops for UPSC CSE GS3 by Pmfias.com**

**“Indian Agriculture – Major Crops”** will be a cake walkif you have understood Climatology, Climatic Regions and Indian Climatology well.

It can still be managed without the knowledge of Indian Climatology. But it will take a bit longer to understand.

Green revolution, Bringing Green Revolution in Eastern India (BGREI), Sustainable Agriculture, Organic Farming and Biofertilizers are already included in my Environment Notes.

This part is a ‘low-cost – High-Benefit’ section for prelims.

Reference: [Indian Geography by Kullar](http://www.amazon.in/India-Comprehensive-Geography-D-R-Khullar/dp/B00P9BHS5K)

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# Cropping Pattern

* Different crops grown in an area at a particular point of time is called cropping pattern.
* Cropping pattern depends on climate (temperature, rainfall, wind etc.), soil, support price, value, demand - market, labor availability, historical setting, etc.
* Climate: Rice is cultivated extensively when the monsoons are good. But when monsoons are weak, millets are grown instead of rice.
* **Cotton in Maharashtra**, **tea in Assam** and **jute in West Bengal** remain the dominant crops due to highly favorable conditions for cultivation.
* Soil: **Regur** soils are ideal for cotton cultivation. Cotton is the obvious choice in such soils when the climate is favorable.
* Minimum Support Price (MSP): Rice and wheat which are offered MSP are preferred by farmers.
* Value: Millets in the hilly areas of HP and Uttarakhand are replaced by high value horticulture crops like apple.
* Demand: Rice is the preferred crop in the densely populated regions as there is a ready market.
* Historical setting: Sugarcane is grown **more extensively in North India** even though the **conditions are most favorable in South India**.
* This is because the sugarcane cultivation was encouraged by British as an alternative to indigo which lost its significance and market in states like Uttar Pradesh due to introduction of artificial dyes.
* **Diversification** of crops due to surplus food grain production post Green Revolution has led to significant changes in cropping pattern.
* Other than rice and wheat, oilseeds and pulses also became more prominent.
* Crop diversification in certain regions has been negligible. E.g.
1. **Rice dominates in well irrigated parts of south India.**
2. **Wheat dominates north-western part of the country.**
* Coarse grains like jowar, bajra, maize, barley, ragi etc. are given comparatively less importance in these regions.

# Major Crops of India

* Cropping patterns can be better understood by studying about major crops of India.
* Indian Geography, types of soils in India and Indian climatology forms the foundation for understanding cropping pattern and major crops of India.

## Crop Classification

#### Crop Classification based on the type of produce

|  |  |
| --- | --- |
| **Food Crops**  | Rice, wheat, maize, millets — jowar, bajra, ragi; pulses — gram, tur (arhar) etc. **(cereals – grass like plants with starchy edible seeds having high nutritional value)** |
| **Cash Crops** | Cotton, jute, sugarcane, tobacco, oilseeds, groundnut, linseed, sesamum, castor seed, rapeseed, mustard, etc. |
| **Plantation Crops** | Tea, coffee, coconut, arecanut, rubber and spices — cardamom, chillies, ginger, turmeric etc.  |
| **Horticulture** | Vegetables — Onion, tomato, etc; and fruits — Apple, Orange, Mango, banana, citrus fruits, etc.. |

#### Crop Classification based on climate

|  |  |
| --- | --- |
| **Tropical**  | **Temperate** |
| Crops grow well in warm & hot climate | Crops grow well in cool climate |
| **E.g. Rice, sugarcane, Jowar etc.** | **E.g. Wheat, Oats, Gram, Potato, apple etc.** |

#### Classification Based on growing season

|  |  |  |
| --- | --- | --- |
| **Kharif/Rainy/Monsoon crops** | **Rabi/winter/cold seasons crops** | **Summer/Zaid crops** |
| *The crops grown in monsoon months* | *The crops grown in winter season* | *Crops grown in summer* |
| *Sown before monsoon and harvested at the end of the monsoon* | *Sown before retreating monsoon and harvested before summer.* | *Sown and harvested in summer* |
| June to Oct-Nov | Oct to March | March to June |
| Require warm, wet weather at major period of crop growth | Crops grow well in cold and dry weather | Require warm dry weather for major growth period |
| **E.g. Cotton, Rice, Jowar, Bajara etc.** | **E.g. Wheat, gram, sunflower etc.** | **E.g. Groundnuts, Watermelon, Pumpkins, Gourds etc.** |

The kharif crops include rice, maize, sorghum, pearl millet/bajra, finger millet/ragi (cereals), arhar (pulses), soyabean, groundnut (oilseeds), cotton etc.

The rabi crops include wheat, barley, oats (cereals), chickpea/gram (pulses), linseed, mustard (oilseeds) etc.

Source: <http://goo.gl/dmLRUz>

## Wheat

* Second most important staple food for Indian population.
* It is a rich source of **calcium, thiamine, riboflavin** and **iron**.
* Preferred staple food in northern and north-western parts of the country.

### Climatic conditions for wheat

* Wheat is a **temperate crop** which requires a **cool climate with moderate rainfall**.
* It shows **great adaptability** & can be grown in tropics as well (yields are low in tropics).
* It is a **rabi crop** (winter crop – requires cool and less moist climate).

|  |  |  |
| --- | --- | --- |
| Regions | Sowing months | Harvesting months |
| 1. Karnataka, Maharashtra, Andhra Pradesh, Madhya Pradesh and West Bengal [central and southern (peninsular) agro climatic regions]
 | September-October | January-February |
| 1. Bihar, Uttar Pradesh, Punjab, Haryana and Rajasthan [North-eastern plain and North-western plain agro climatic regions]
 | October-November | February-March |
| 1. Himachal Pradesh and Jammu & Kashmir
 | November-December | April-May |

# Oilseed (Cash Crop) Crops in India

* Major oilseeds include groundnut, linseed, sesamum, castor seed, rapeseed, mustard, sunflower and soyabean.
* Oil extracted from oilseeds is used in diet and as raw material for manufacturing paints, varnishes, hydrogenated oil, soaps, etc.
* Oil-cake which is the residue of oilseeds forms an important cattle-feed and manure.
* India has the **largest** area (18-20 % of the net sown area) and production of oilseeds in the world.
* There had been a gradual increase in area, production and yield of oilseeds, with the passage of time.
* The production of oilseeds has always fallen short of our demand and India has always been a **net importer** of oilseeds.
* There is a very little scope for bringing additional area under oilseeds. Increasing productivity is the only way to meet the domestic demand.
* **Madhya Pradesh, Rajasthan, Maharashtra** & **Gujarat** are the main producers of major oilseeds accounting for over two-third of the area and three-fourths of the production.
* Other producers include Andhra Pradesh, UP, Haryana, Karnataka, **Tamil Nadu** (gives maximum yield in oil seeds) West Bengal, Odisha, Assam, etc..

## Groundnut

* Groundnut is the most important oilseed of India.
* It accounts for nearly half of the major oilseeds produced in India.
* Groundnut kernels are rich in proteins and vitamins and have high calorific value.
* It contains **40-50% oil** which is used as edible oil or hydrogenated vanaspati.
* The oil is used for manufacturing margarine, medical emulsions, soap etc.
* Its oil cake is used as an important rich cattle feed.
* It is often a rotation crop because of its **atmospheric nitrogen fixing abilities**.

### Conditions for Growth

* It is a tropical crop that requires 20°-30°C temperature and 50-75 cm rainfall.
* Isohyet of 100 cm marks the upper limit for groundnut cultivation.
* It is mainly a **kharif** crop but it also cultivated during rabi season.
* It is highly susceptible to frost, prolonged drought, continuous rain & stagnant water.
* Dry winter is needed at the time of ripening.
* **Well drained** sandy loams, red, yellow and black cotton soils are well suited.

### Production and Distribution

* India (17.4%) is the **second largest** producer of groundnut. [China 40%].
* Unlike rice and wheat, there is no fixed cropping area for groundnut.
* Groundnut is a rainfed crop and fluctuations in its production is usual.
* **Andhra Pradesh, Tamil Nadu, Gujarat and Rajasthan** are the four main producers.
* These four states together account for over 70% of total production of India.
* Andhra Pradesh (23%) is the largest producer of groundnut in India.
* Tamil Nadu (18%) is the second largest producer.
* Gujarat, Rajasthan, Karnataka and Maharashtra are the other important producers.

### Trade

* India's exports have drastically fallen due increased domestic consumption.

# India’s edible oil industry

* Indians used broadly these edible oils
1. ‘vegetable’ oils obtained from crushing local oilseeds
* mustard in northern and eastern India;
* groundnut in Gujarat, Maharashtra, Karnataka and Andhra Pradesh;
* sesame and groundnut in Tamil Nadu; and
* coconut in Kerala
1. ‘animal’ fat – ghee from milk.
2. **dalda – hydrogenated vegetable oil**.
* hydrogenation — adding hydrogen to **convert “unsaturated” liquid fats into “saturated” solid fats**.
* hydrogenation is done to harden or raise the melting point of the oil.
* Just as ghee, dalda has higher melting and **smoke point** (at which the molecules start breaking down).
* Advantages of dalda: Good shelf life of foods, quite cheap compared to edible oils.
* Disadvantages of dalda: saturated fats are **very bad for health** (<http://www.pmfias.com/fats-lipids-fatty-acids-healthy-fats-unhealthy-fats/>).
* **Oil seeds = Yellow Revolution** [**National Dairy Development Board (NDDB) played an important role]**.

#### In 1970s

* **groundnut** accounted for almost 60 per cent of India’s edible oil consumption.
* groundnut was followed by mustard, cottonseed, coconut, sesame, etc. (industry was based totally on **domestically** produced oilseeds).

#### Present

* groundnut oil’s share declined – hardly 1 per cent
* mustard’s share declined to 10 per cent.
* **Palm, soyabean and sunflower** dominated (industry shifted towards **imported** oilseeds and oil).
1. palm oil (45 per cent)
2. soyabean (20 per cent)
3. sunflower (rest).

