

# AGRICULTURE - II

## Agricultural Seasons:

| Season                                   | Sowing Season                                      | Harvesting Season        | Crops                                  |
|--|--|--------------------------|--|
| <b>Kharif</b><br>(Start of Rainy season) | June – July  | Sep – Oct                | Rice, maize, jowar, bajra, sugarcane   |
| <b>Rabi</b><br>(Start of Winter)         | Oct – Nov  | March – April            | Wheat, barley, green linseed, potato   |
| <b>Zaid</b><br>(Throughout the year)     | Aug – Sep (Zaid Kharif)<br>Feb – March (Zaid Rabi) | Dec – Jan<br>April – May | Oilseeds<br>Summer Vegetable of fruits |

**CEREALS** – All kinds of grass like plants, which have starchy, edible seeds.  
Ex- rice, wheat, maize etc

**Rice Cultivation** - The most important staple crop of India. It is a Kharif crop in North but full year in South where irrigation is available.

**Temperature and Rainfall** – 18 to 32 C,  
rainfall:-150 – 300cm

**SOIL** – Deep fertile Clayey or Loamy soil



## UPLAND AND LOWLAND RICE

The rice crops in India can be grouped into two categories:

- (a) Upland Rice; and
- (b) Lowland Rice.

## **(a) The Upland Rice**

- (i) This type of rice is grown on mountainous regions.
- (ii) Upland rice is sown in March- April and harvested in September-October.
- (iii) This type of rice cultivation depends on the distribution of rainfall only.
- (iv) The entire crop is used locally.

## **(b) Lowland Rice**

- (i) Lowland rice is grown on low- lying regions.
- (ii) It is sown in June and harvested in October.
- (iii) This type of rice requires plenty of water during the sowing and harvesting period.
- (iv) The produce is used for local consumption as well as supplied to other regions.

## **Methods of Rice Cultivation:**

**1) The dry method** - areas of heavy rainfall, seed is scattered with hands or drills.

**2) The puddled or wet method** - areas have irrigation facility, water is filled.

## **Sowing of Seeds:**

**1. Broadcasting Method** - seeds are scattered in field after ploughing it.

**2. Drilling Method** - seeds are sown in the furrows with help of drill.



**3 Dibbling Method** - seeds are sown at regular intervals with help of dibble.

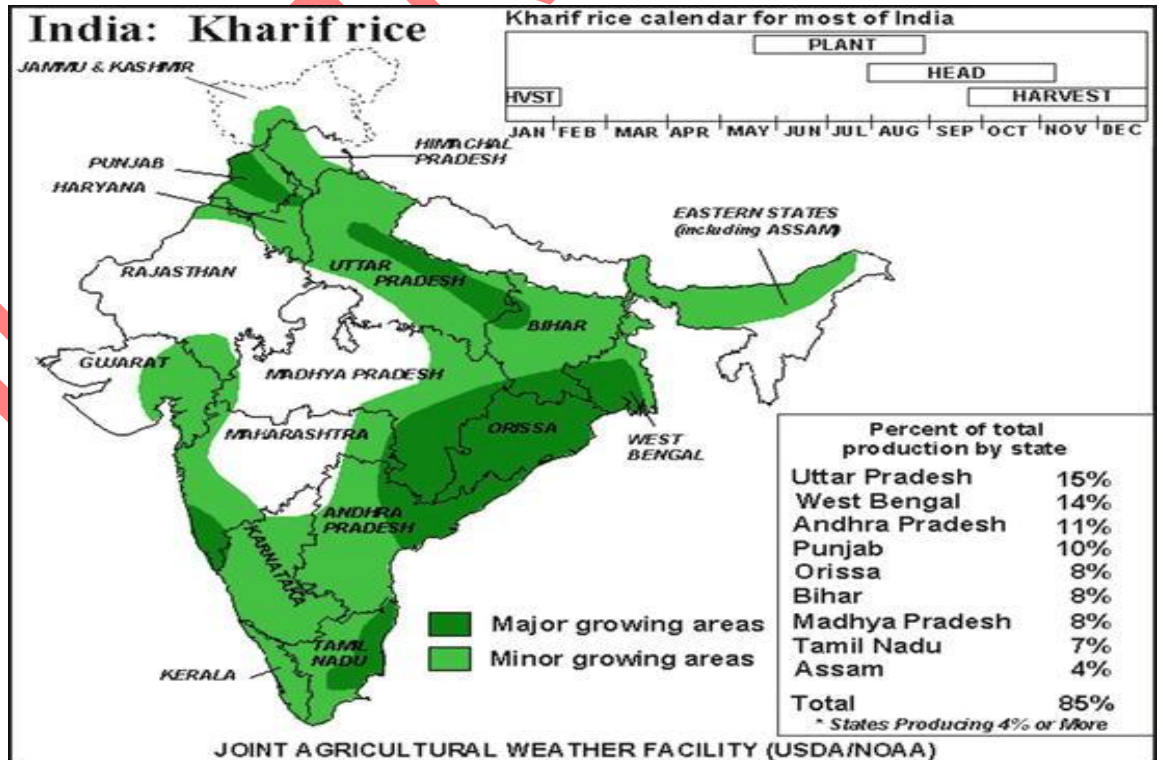
### Transplantation Method:

- Seedlings are grown in nursery.
- After 4/5 weeks they become sapling.
- These saplings are transplanted into rice fields.



### Advantages:

- i) weeds are removed
- ii) less wastage of seed.
- iii) higher yield.



### Japanese Method:

**Japanese method** is an improved form of transplantation method. In this method, high yielding varieties of seeds, called '**Japonica**' are used. It includes the following practices:

- (i) As in the previous method, the seedlings are prepared in the nurseries.
- (ii) The rows of plants are fixed at a distance of 25cm. Similarly, the distance between the plants is about 15cm. It is easy for the farmer to give proper care to the plants by weeding them.
- (iii) Manure is used extensively to increase the yield.
- (iv) The Japonica seeds give a higher yield in this method.

## Harvesting and Processing

The fields are drained dry just before the crop is harvested. The traditional cutting of the stalk is simple. A sickle (a curved knife) is used for this purpose. It is labour intensive, as each stalk is hand-reaped. Each stem is cut about 60cm below the grain to facilitate threshing.



The moisture content of the crop is reduced by drying the stalks in the sun.



**Threshing:** Threshing is done by beating the sheaves against the wooden bars. The grains are separated from the stalks. Threshing is done in the rice fields in order to minimise the cost of transportation.

**Winnowing:** It is the process of removing the unwanted husk from the grains. The simple method involves pouring the grains from a height on a windy day when the grains fall to the ground and the chaff is blown aside.



**Milling:** Milling is done to remove the yellowish husk from the grains. Traditional method of removing the outer

husk is by parboiling the grains and then drying them before removing the outer cover. The farmer used to hit the grain in a wooden mortar with a heavy pestle.

Modern milling is done by machines. Such polished rice has a glossy texture, but lacks nutrition, as most of its nutrients are lost due to excessive rubbing. After this the polished rice is graded and stored in sacks.

## **DISTRIBUTION**

India is the second largest producer of rice in the world. West Bengal, Punjab, Uttar Pradesh, Andhra Pradesh and Tamil Nadu are the leading producers of rice in the country.

## **Wheat:—**

Second most important food crop. 14% of Total cropped area.

**Climatic Conditions** - cool winters for growing & warm dry climate for ripening.

**Temp:** 10- 15°C for sowing, 20-25°C for harvesting.

**Rainfall:** 80 cm.

**Soil :** well drained to loams and clay loams.



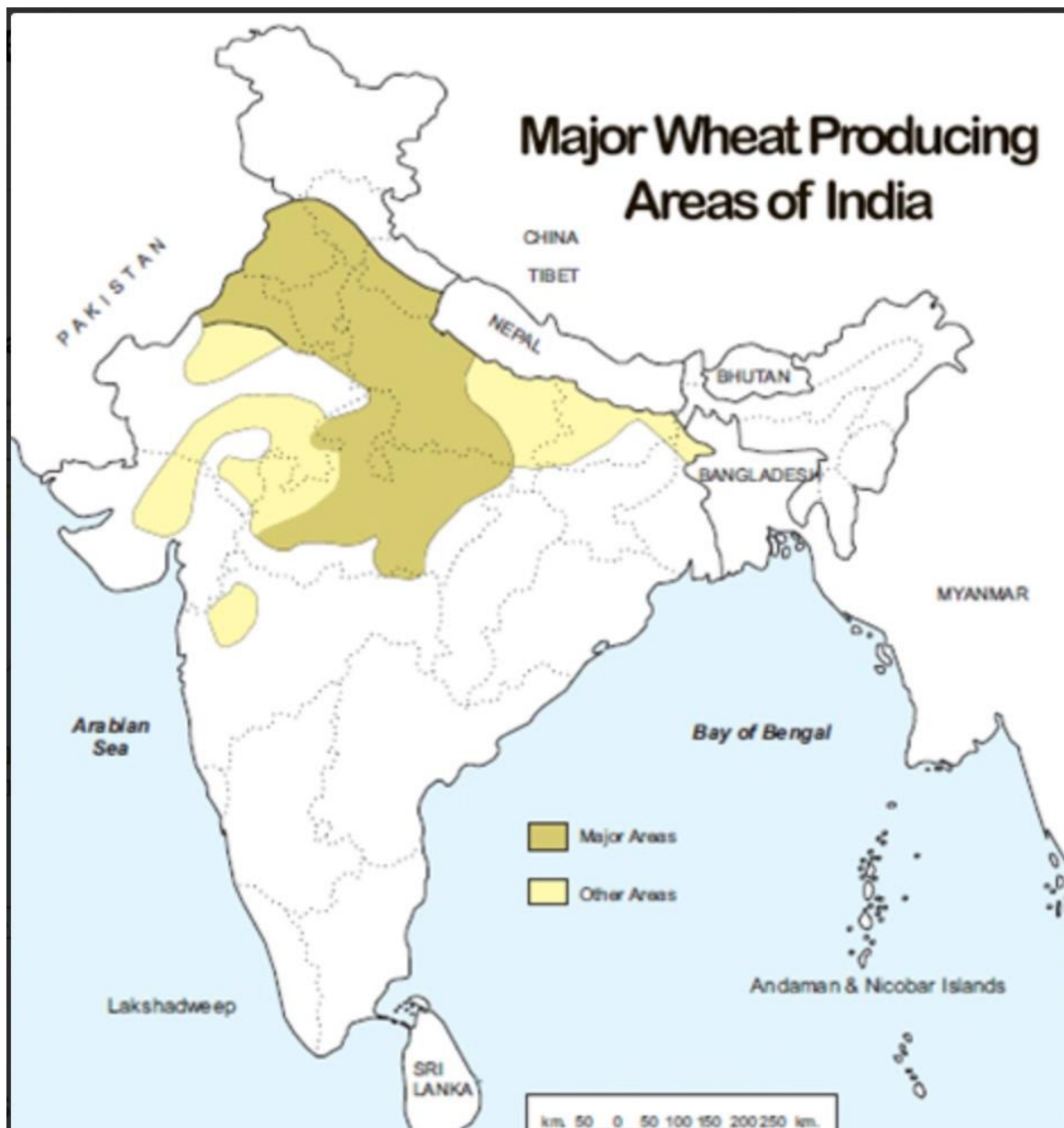
## **Methods of Wheat Cultivation:**

**Sowing:** fields are ploughed & seeds are sown by drilling or broadcasting.

**Harvesting:** The wheat crop starts ripening in the month of March (temperature about 21°C) and is harvested in April when the temperature is 27.5°C. Wheat is mostly harvested using a sickle.

The traditional method of threshing (to get the crop trampled under the bullock's feet) is used to separate the grain from husk. But this work is now done by threshers, as the traditional method is time-consuming.

**Distribution:** UP, Punjab, Haryana Rajasthan and MP.



## MILLETS

The term 'millets' refers to a number of inferior grains like jowar (or cholam), bajra (or cumbu) and ragi, which serve as foodgrains for the poorer sections of the society. Their straw makes a valuable cattle fodder.

Millets are highly nutritious and easily digestible food. They are a rich source of iron, calcium, zinc and magnesium. India is the largest producer of millets like Bajra. They are grown under conditions where the soil is rather infertile owing to its rocky or sandy character. These are crops of short duration, from three to four months.

## JOWAR

Ranking next to rice and wheat in both area and production, jowar or great millet is one of the most important food crops in India. It accounts for 5.3per

cent of total cropped area. In the dry parts of the Peninsular Plateau, where rice or wheat cannot be grown, it occupies large tracts and forms the staple food for a large section of the population. It is also grown mainly for fodder in many parts of the country.

## CLIMATIC CONDITIONS

Jowar is both kharif and rabi crop. It grows well even in the dry farming areas mostly without irrigation support.

**Temperature:** Jowar grows well at a temperature between 27°C and 32°C at the time of germination, but it cannot be grown when temperature is below 16°C.

**Rainfall:** Jowar can be grown in arid and semi- arid areas having rainfall under 45 cm.

## SOIL

Jowar can grow on a variety of soils. The black clayey loams of the Peninsular Plateau are considered to be most ideal for jowar cultivation.

## METHODS OF CULTIVATION

The seeds are mostly sown using the broadcast method. But they are also dibbled in some areas. The crop matures in about four to five months.

## DISTRIBUTION

Jowar or sorghum accounts for about 5.3per cent of the total cropped area in the country. Jowar is largely grown in Maharashtra, Madhya Pradesh, Karnataka, Andhra Pradesh and Telangana.

## BAJRA

Bajra or bulrush millet is an important millet crop. Most of it is used as staple food in north-western Rajasthan and Gujarat, Plant stalks are fed to cattle or used for thatching purposes.

## CLIMATIC CONDITIONS

Bajra is a short season kharif crop. It is grown either as a pure or mixed crop. As a mixed crop, it is grown with cotton, jowar or ragi. It is also a rainfed kharif crop. It is seldom irrigated.

**Temperature:** The ideal temperature for its growth is between 25°C to 30°C.

**Rainfall:** Bajra is suited to areas of low rainfall and can be grown even in tracts which receive less than 50cm of rainfall.

## SOIL

It grows best in black cotton soils, sandy loams with good drainage.

## DISTRIBUTION

The principal bajra growing states are Rajasthan, Maharashtra, Gujarat, Uttar Pradesh and Haryana.

## RAGI

Ragi or **Buckwheat** is an important millet which is grown in drier parts of south India and in some areas of northern India.

## CLIMATIC CONDITIONS

**Temperature:** Its temperature requirement varies from 20°C to 30°C.

**Rainfall:** Ragi is one of the hardiest crops. It can grow under conditions of very low rainfall and can withstand very severe drought. It is widely grown in areas where the average annual rainfall is 50cm to 100cm.

## SOIL

It is raised on red, light black and sandy soil.

## METHODS OF CULTIVATION

Seeds are sown by broadcast method or with the help of drills and even transplanted on well-prepared friable beds. The crop requires three to five months to mature.



## **DISTRIBUTION**

Karnataka is the leading producer of ragi in the country followed by Tamil Nadu, Uttarakhand, Maharashtra and Andhra Pradesh.

## **PULSES:-**

It is very important part of Indian diet because **its vegetable protein**. It is leguminous crop; it fixes atmospheric nitrogen in the soil & increases the natural fertility. It serves as an excellent forage and grain concentrates.

Gram and arhar / tur are most important pulser. Urad, moong, masur.



**Temp:** 20°C. 25°C

**Soil:** Dry light soil

**Rainfall:** 50 to 75cm

**Distribution:** India is largest producer and consumer of pulses.

Madhya Pradesh, Maharashtra, UP, Rajasthan & AP

## FOOD CROPS OF INDIA

| Crops             | Temperature                             | Rainfall   | Soil                                     | Leading Producers   |
|-------------------|---|------------|--|---|
| <b>1. Rice</b>    | Not above 35°C                          | 150-300 cm | Clayey or loamy                          | West Bengal, Uttar Pradesh, Andhra Pradesh, Punjab, Tamil Nadu.           |
| <b>2. Wheat</b>   | 10°-15°C (sowing)<br>21°-26°C (harvest) | 80 cm      | Well drained loams, and clay loams       | Punjab, Haryana, Uttar Pradesh, Rajasthan, Madhya Pradesh.                |
| <b>3. Millets</b> |   |            |  |   |
| (a) Jowar         | Not below 16°C                          | <100 cm    | Variety of soils including clayey, sandy | Maharashtra, Madhya Pradesh, Karnataka, Andhra Pradesh and Telangana.     |
| (b) Bajra         | 25°-30°C                                | 40-50 cm   | Sandy loams, black and red soils         | Rajasthan, Uttar Pradesh, Gujarat, Maharashtra, Haryana.                  |
| (c) Ragi          | 20°-30°C                                | 50-100 cm  | Red, light black and sandy loams         | Karnataka, Tamil Nadu, Uttarakhand, Maharashtra and Andhra Pradesh.       |
| <b>4. Pulses</b>  | 20°-25°C                                | 50-75 cm   | Dry, light soil                          | Madhya Pradesh, Maharashtra, Uttar Pradesh, Rajasthan and Andhra Pradesh. |

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