

# GROUNDNUT

**Botanical Name** : *Arachis hypogea*

**Family** : Leguminosae

**Origin** : Brazil

## **Economic Importance:**

1. Among all the oilseed crops, Groundnut accounts more than 40% acreage and 60% production in the country.
2. Groundnut is also known as peanut, earthnut, monkey-nut, manila nut.
3. Among the all oilseed crops, groundnut has first place in India.
4. Groundnut oil is used for human consumption as well as manufacturing of Vanaspati-ghee and several other industrial products.
5. Seeds contain about 45% Oil and 26% protein.
6. Groundnut are a good source of vitamins except Vit-A and Vit-B<sub>12</sub>
7. With regards to minerals, phosphorus, calcium and iron are present in significant amount.
8. The kernels are consumed either roasted or fried or salted.
9. Oil cake is excellent concentrate feed for livestock and also applied into field as concentrate organic manure for improving fertility of soils. Oilseed cake contains 7-8% nitrogen, 1.5% phosphorus and 1.5% potash.
10. Being a leguminous crop it fixes atmospheric nitrogen results in improvement of soil fertility.
11. It is also known as cover crop and smother crop it reduces soil erosion and growth of weeds.

## **Geographical Distribution:**

Groundnut is grown in large scale in almost all the tropical and subtropical countries. The important Groundnut growing countries are India, China, Nigeria, Sudan & USA. India occupies the first place in regards to area and second in production. China ranks first in production while USA ranks first in productivity.

In India it is mainly cultivated in Gujarat, Andhra Pradesh, Karnataka, Tamil Nadu and Maharashtra. The other important states where it is grown are Madhya

Pradesh, Uttar-Pradesh, Rajasthan and Punjab. Gujarat occupied rank first in area while Andhra Pradesh first in production and Tamil Nadu first in Productivity.

### **Classification:**

1. Erect or bunch type: *Arachis hypogea* subspecies *fastigiata*.
2. Trailing or spreading type: *Arachis hypogea* subspecies *procumbens*.

### **Ecology:**

#### **Climatic requirements:**

Groundnut is a tropical plant. It requires long and warm growing season. Soybean grows well in warm & moist climate. The optimum temperature required for vegetative growth 27-30<sup>0</sup>C, Reproductive growth 24-27<sup>0</sup>C and for pod formation 30-34<sup>0</sup>C. Lower temperature is not suitable for proper growth and development. During ripening periods it requires about a month of warm and dry weather. It can be grown successfully in the area receiving annual rainfall of at least 500 mm per annum.

#### **Soil requirement:**

Groundnut thrives best in well drained sandy & sandy loam soils, Light soils are the best because easy penetration of pegs and their development and also harvesting. Clay or heavy soils are not suitable for this crop, as they interfere in penetration of pegs and make harvesting quite difficult. The optimum soil pH is 6.0-6.5.

#### **Field Preparation:**

Although groundnut is a deep rooted crop but looking to its underground pod forming habit, deep ploughing should be avoided. Because deep ploughing encourages the development of pods in deeper layers of soil which makes harvesting difficult. One ploughing to a depth of 12-18 cm followed by two harrowing is sufficient. Ridges & furrows, Raised beds or Broad bed furrows are better than flat bed in heavy rainfall region.

**Seed and Sowing:** Select quality seeds, pods should be shelled by hand before 1 week of sowing. Discard very small, shriveled & diseased kernels select only bold seeds for sowing.

1. **Sowing season:** Kharif & Summer
2. **Sowing Time:** Kharif season- Sowing is done with the onset of monsoon in mid-June to first week of July, Summer season- Second fortnight of Feb.
3. **Seed treatment:**

**Fungicidal Treatment:** Groundnut seeds are treated with 4 gram of Captain/Thirum/ Carbendanzim per kilogram of seeds to protection against seed borne disease. Or *Trichoderma* @ of 5 gram per kilogram of seeds.

**Biofertilizer Treatment:** *Rhizobium spp.* @ 250 gram per 10 kilograms of seeds for atmospheric fixation of nitrogen. Follow the same treatment of PSB.
4. **Seedrate** : Bunch: 80-100 kg/ha & Spreading: 60-80 Kg/ha
5. **Spacing** : Bunch type: 30x10cm. Spreading Type: 45x15 cm.
6. **Sowing method:** Drilling and dibbling
7. **Sowing Depth:** 5 cm.

### **Manures and fertilizers:**

Apply 10 to 12 tonnes of well decomposed compost or farm yard manure before 15 days of sowing at the time of land preparation. Being a leguminous crop Groundnut needs a small quantity of nitrogen for early growth period as a starter dose. Apply fertilizer dose according to soil test value, in absence of soil test value apply 25 kg nitrogen & 50 Kg of P<sub>2</sub>O<sub>5</sub>/ha and 30 to 40 Kg of K<sub>2</sub>O/ha. Apply whole quantity of fertilizer at the time of sowing as a basal application.

Apply gypsum @ 400 kg/ha because it supply sulphur (Increase oil percentage) and calcium (Increase size of kernels). Apply into two Split dose a time of sowing 200kg/ha and reaming 200kg/ha at time of pegging.

### **Irrigation and Water Management:**

There is no any need of irrigation water during *kharif* season. But at the dry spell in kharif season as well as in summer season irrigation should be at critical growth stages. Flowering growth stage 40-45 DAS, Peg formation-55-60 DAS, Pod

development stage 90-100 DAS Total water requirement of ground nut 40-50 ha cm. In summer season number and frequency of irrigation depends upon the soil type and weather during growth period. Generally crop should get irrigation at an interval of 10-15 days.

### **Weed Management:**

The critical stage for crop weed competition period is up to 30-35 DAS. Hand weeding or hoeing should be done to controlling of weeds. Care should be taken that soil should not be disturbed at pod development stage.

Apply Fluchloralin (Basaline) @ 1 kg a.i. per hectare as a pre plant application. Or Apply Pendamethaline (Stomp xtraa) @ 1 kg a.i./ha or Metribuzine @ 1 kg a.i./ha. This dissolved in 500-600 liter of water as pre-emergence application (after sowing but before emergence of seed). Imazithyper @ 0.1 to 0.15 kg a.i./ha and apply as a post emergence application.

### **Earthing up:**

Earthing up is done to promote the easy penetration of pegs in soil & was also provide more area to spread.

### **Drum rolling in Ground nut:**

Bunch and semi spreading type varieties are erect type so it will become difficult to penetrate into inside soil. That's way we have to roll empty 200 Liter capacity iron drum on branches of ground nut it's became easy for peg to go inside the soil surface. Due to this yield increased up to 15 to 20% or apply soil at bottom Ground Nut plant earth up.

### **Cropping systems:**

Groundnut is grown in rotation with Wheat, lentil, chick pea, barley etc. it is grown mixed with sorghum, Maize, Pearl-millet, Tur and cotton during kharif season Groundnut is profitably grown as intercrop in widely spaced crops like sugarcane and pigeon pea. Some of the most important cropping systems are as follows. Groundnut-Wheat, Groundnut - Potato, Groundnut - Chick pea, Groundnut - Tobacco, Groundnut -Lentil.

In Maharashtra and Andhra Pradesh sorghum is grown after harvesting of Groundnut.

### **Harvesting and Threshing:**

Maturity period ranges from 90-140 DAS depending on varieties. It is necessary to dig the pods at right time for obtaining higher yields of pod & oil. Nuts take two months to attain full growth or development. A fully mature pod will be difficult to split easily with finger pressure. This stage is attained when vine begins to turn yellow and leaves start shedding. In case of bunch type of groundnut the plants are harvested by pulling. Harvest the spreading type of Groundnut by spade, local plough or Groundnut digger. Leave the crops in small heaps for curing. After curing detach the pods either by hand or using Groundnut plucker for separating pods from the plants.

### **Yield:**

By adopting all agronomic practices as indicated above it will be possible to obtain about gives 15 to 20 quintals pods per hectare from bunch and 20 to 30 quintals pods per hectare from spreading varieties.

### **Varieties:**

1. Bunch type: Kopargaon No.3 Phule pragati (JL-24), TAG-24, TG-26, Phule Vyas (JL-220) TG-17.
2. Semi spreading type: Kopargaon No.1, TMV-10, TKG-194 Akola-10, Koyna
3. Spreading type: Karad 411, M-13, CSMG  
BSKKV Dapoli- Konkan tapora & Kaonkan Gourav  
MPKV, Rahuri- Phule Pragati, Phule Unap, Phule Warana, Phule Vyas.