**Groundnut (*Archis hypogea L.*):**

**A) Crop Botany:**

It belongs to family Fabaceae.

**B) Agro-meteorology:**

i) Climate: It is warm climate crop. 25°C temperature is required for germination. It can be successfully grown in area where 250-300 mm rainfall during April-September.

ii) Soil: well drained, coarse textured and sandy loam soil. Clay soil may result in crust formation and the pegs may not be able to penetrate into the soil for fruiting. pH ranges from 6-6.5.

**C) Economic Importance:**

Groundnut is very important cash crop of kharif season in arid zone. Groundnut seed has 44-56% good quality edible oil and 22 to 30% protein content. If its vegetable oil is used so it will have positive impact on country’s economy. In order to fulfill the country need lot of money is spending to import vegetable oil. Average production is 1067kg/ha, total area under production is 97500 ha and total production is 104,000 tons.

**D) Production Technology:**

**1) Seed bed preparation:** Deep tillage with Mouldboard Plough in early to mid-February. This operation preserves the moisture from subsequent rains. Mouldboard plough should be followed by disc or harrow to level and pack the soil.

**2) Sowing time:** It is kharif season crop. 25°C or more temperature is required for germination. So the best time for sowing is March to April but it can be planted in May and June after Wheat Harvesting. Optimum Planting time in Punjab is April and in Sindh is May. In irrigated conditions it is planted in early March and harvested in August.

**3) Seed rate:** Spreading and semi spreading types: 75- 80kg/ ha.

Bunch and semi bunch type: 95-100 kg/ ha.

Seed inoculation is done before planting with efficient rhizobium strain to obtain higher yield.

**4) Sowing method:** In barani areas: Line sowing with pora or drill. Seed should be at the depth of 2-3 inch. Row to row distance is 11/2 feet and plant to plant distance should be 6-8 inches. Broadcasting should never be done to sow groundnut.

For Bunch, Semi Bunch varieties:

RxR 45cm PxP 10cm

On sandy soils (in low rainfall zones) plant to plant spacing should be increased to 15cm.

For spacing and semi spreading type varieties:

RxR 60cm PxP 10cm

In sandy soils or medium to low rainfall zones, plant spacing with rows should be 15cm.

**5) Fertilizer:**

Organic Fertilizers: FYM should be applied about one month before sowing and incorporated properly in the soil.

Chemical Fertilizers: N : P : K

 30: 80 : 30 kg/ha

If soil is more sandy, 40kg/ ha is recommended. As it is leguminous crop it produces 80% nitrogen from atmosphere. Chemical fertilizers are applied before drilling.

Gypsum 400-500 kg/ha just at beginning time of monsoon season. In more sandy soils higher rates of gypsum are required due to increased leaching. Calcium is needed by the peanuts to ensure well-filled pods, reduce pod rots caused by imbalances of other nutrients.

**6) Irrigation:** It requires 6 irrigations:

Rouni irrigation

First irrigation 3 to 4 weeks of sowing

2nd at flowering

3rd at peg formation

4th at pod development

5th about one month before digging.

**E) Plant protection measures:**

**i) Weeds:** chemical control Fusilade (Fluazifop P-Butyl) a selective (post emergence herbicide) @1-2 litter/ha

**ii) Insect-pests:** termites, cutworm, aphid, chrotogonous, thrips, jassid and red hairy caterpillar.

**iii) Diseases:** Early leaf spot lesions, blight, stem rot, wilt, peanut bud necrosis, peanut clump virus, leaf spot and fungal attack.

**9) Harvesting and Storage:** early digging results in lower maturity and lower yield. Late digging results in more leftover losses in the soils and high digging cost due to dry and hard soil. Manual threshing for this purpose, a PTO driven FMI thresher, commercially available.

**Varieties:**

BARI-2000 (semi bunch)

BARD-479 (semi spreading)

GOLDEN (semi bunch)

Late planting after wheat

Chakori (bunch)

BARI-89 (spreading)

Swat Phali (bunch)

**Drying and Curing:**

Sun drying for about 6-8 days to maintain the desirable flavor and quality. At the time of digging, pods contain about 40-50% moisture which should be reduced to 8 to 10% by curing for safe storage. Dried peanuts should not exceed 10% moisture content in storage or molds and fungi may develop.

**Uses:**

its high oil content 44-56%, protein content 22-30% after extraction of oil it is fed to livestock. The nutty nut is used in preparing vegetable dishes. The seed is used in bakery products. Roasted seed is used in nimko mix. Peanut oil is used for making soaps, cosmetics and lubricants. Being a leguminous plant, nitrogen is fixed by bacteria in root nodules. Cooking agent, paint, varnishes, lubricating oil, soap, furniture polish etc. It also contains vitamin E and vita. B complex.