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GROUNDNUT PRODUCTION TECHNOLOGY

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INTRODUCTION :

Groundnut is the major oilseed crop in India, occupying about 45% of the total area under oilseeds and contributing 55% of the total oilseed production. Although India ranks first in the world with regard to total area (7.7 million ha) and production, (6.6 million tonnes) the productivity of groundnut is low and it occupies only the 10th position.

In Goa, Groundnut is a relatively new crop and at present occupies an area of 1158 ha. Groundnut is becoming increasingly popular as rotational crop, because of remunerative returns as well as maintaining a soil fertility by nitrogen fixation, and offers further scope for increasing the area. The average yield of groundnut in farmer's field is low about 16-18 q/ha. However, the yield recorded in the demonstration plots is about 25-28 ha which shows that there is good possibility of increasing productivity by adopting improved Technology. KVK identified the major constraints as ;

1. Non availability of quality seed and other critical inputs in time.
2. Inadequate knowledge regarding scientific cultivation practices.

The disadvantages of traditional methods are as under.

Cultivation practices	Traditional Method followed	Defects/Disadvantages of Farmers Method
Time of sowing	Late December-January	• Depletion of residual soil moisture. • Poor germination and poor growth due to moisture stress.
Seed Selection	No importance is attached for seed selection and seed viability.	• Poor germination leading to gaps and less plant population, poor yield due to low yield potential.
Seed Treatment	Seeds not treated before sowing	• Leads to spread of seed borne diseases like collar rot, Tikka and poor germination and unhealthy plants.
Sowing technique	No proper spacing is maintained. Line sowing not practiced. Pods are sown without shelling to save time and labour.	• Leads to patchy crop resulting in sub-optional plant population. Interculture is difficult, rotting of seed and poor crop stand.
Fertilizer Usage	Very few farmers use organic manures or fertilizers for groundnut crop.	• Leads to poor crop growth, stunted plants, half and shrivelled. pods/kernel, light pods resulting in low yield.
Weed Control	No weeding is done. However weeds are smothered during earthing up which is usually delayed beyond 50 days of sowing, which is a bad practice.	• Results in weed competition specially during fitst 45 days. Plants remain stunted and starved resulting in pod. Set and poor quality crop and low yield.
Nutrition	Except few farmers, no fertilizers are used.	• Leads to mal-nutrition, the requirement of calcium and Magnesium is not met. Results in less number of pegs, poor growth, malformed pods, small kernels, half filled pods and poor yield.
After Care	No attention is paid. Field is disburbed after pegging.	• Results is reduced peg formation, weedgrowth, no aeration.
Irrigation	No irrigation is given	• Crop exposed to drought conditions leading to poor and low yield.
Plant protection.	Except for occassional dusting with BHC 10%, no adequate protection is given specially in soil inhibiting weevil affected areas.	• Crop exposed to various pests and diseases. The weevil in endemic areas puncture the developing pods and feed on tender kernels. Bore holes in pods, debris in demaged pod, poor quality and low yield.
Harvesting.	Plants are uprooted on a rough estimate regarding maturity.	• Leads to harvesting losses of pods. Immature or over mature pods, loss of yield.
Drying	No Scientific drying is adopted pods are separated, from plants and sundried.	• Leads to loss of seed viability, seeds become prone to fungus attack due to undesirable moisture level in pods.
Storage	Pods are stored in gunny bags, sometime, even in damp places.	• Development of fungus and aflatoxins. Seed viability is lost. Poor produce. Seeds cannot be used for sowing beyond 6 months.

TECHNOLOGY FOR BUMPER POD YIELD

PLANTING TIME : November/December depending upon the mon soon pattern and resulting field moisture conditions.

SEED SELECTION AND TREATMENT : Procure high yielding seed from reliable sources after ascertaining the viability with minimu 85% ger mination. eg. varieties like Dh-3-30, Dh-40, 1, JL-24. Always use 100 kg Kernals for sowing 1 ha area.

1. Treat the seed with Thiram @ 3 gs/kg) week before sowing
2. One day before sowing ,innoculate seed with fresh rhizobium culture @ 150 g for 30 kg seeds giving uniform coating and drying in shade.

SOWING : 1. Sow the treated seeds at a spacing of 30 cms between rows and 10 cms between plants, at a depth of 4-5 cms, above fertilizers. Maintain a plant population of 3.33 lakhs/ha for bunch varieties and 2.22 lakh/ha for spreading varieties. Groundnut planter developed by TNAU is an ideal implement.

MANURING : During ploughing, incorporate 25 t well decomposed farm yard manure/compost per Hectare. Apply 20 kg urea, 200 kg mussoriephos and 40 kg Muriate of potash/ha as basal dose during land preparation. Top dress along the rows with 20 kg urea 40-45 days after sowing before earthing up.

WEED MANAGEMENT : Hoe the crop after 12-15 days of sowing and again after 20-25 days. spray Alachlor (Lasso) @ 5 l/ha within 2 days of sowing or spray Basalin 1.5 kg/ha in 500 l water before sowing. Keep the land moist during weedicide application.

NUTRITION : Apply 500 kg Gypsum/ha alongwith top dressing of urea near the root zone, 45 days after sowing

or at the initiation of flowers. Give thorough earthing up followed by one irrigation for best results. Gypsum can also be applied with basal dose while land preparation.

INTER CULTURE : Give two hoeings and adequate earthing up be fore 50th day. Use improved groundnut hoe for facilitating the operation.
Wherever possible, give two irrigations once at flowering stage (45-50 days) and another at pod formation. (60-70 days) 40% increase in yield recorded with these protective irrigations.

PLANT PROTECTION : Treat the seed before sowing.
Spray the crop twice with a mixture of Carbendazim @ 10 c and Monocrotophos @ 12 ml in 10 litres water at 15 days and again at 35-40 days of sowing. In weevil endemic areas, treat the soil with Endosulphan dust @ 25 kg/ha.

HARVESTING : Harvest according to the duration of variety. Drying of leaves at bottom, and dark red colour of seed coat. harvest at 40-60% moisture level.

DRYING : Follow DOR method of drying. Make heaps of harvested plants with pods intack. Keep another heap in inverted fashion in shade for 3-4 days to allow gradual drying. Allow night exposure to bring down moisture to 8-9%. Thorough drying can be judged by rattling sound when pods are shaken. When kernel is pressed, it easily splits into 2 cotyledons. The seed coat comes off easily when rubbed.

STORAGE : Use polythene lined bags for storing. Put 250 g calcium chloride in a muslin cloth placed in perforated plastic jar, without touching the bottom of the jar vertically in the centre of the polythene lined bag. Seed viablity would be intact for 10-11 months and such seed could be used for sowing.

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