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ANALYSIS OF THE AGRICULTURAL SECTOR OF JUNAGADH DISTRICT IN TERMS OF GROUNDNUT PRODUCTION

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INTRODUCTION

In today's India have a big population, among it **59.8%** approximate people are depend in farming and among them **81%** approximate people are vegetarian. For vegetarian product agriculture play a very important role. Research centers constantly continue new studies to obtain higher and higher production, and now **"hybrid seeds"** have also been introduced in the market. Besides this it is necessary for farmers themselves to stay informed about agriculture activities and new technologies in order to achieve better production.

- **In Farm Production: (Groundnut) In Junagadh**

We should know that junagadh is one of the districts in Gujarat that produced the highest yield in groundnut. To encourage it further the government is also developing new research centers for agriculture and farming based research, one of which is located in junagadh is **ICAR=Indian Council of Agriculture Research** (establish from 1929) and for groundnut centers is **DGR=Directorate of Groundnut**

- **Basic information about groundnut**

In junagadh or elsewhere the time period from planting to harvest is **120-160 days (4-5month).** After first good monsoon showers junerally planting start from **mid-June to mid-July and** harvesting from **October to November** (but it depending on the rainfall pattern and variety). Groundnut need temperature around (**70-85c F / 21-29c)** consistently warm temperature.

- **Here some popular varieties for groundnut planting:**

Common	Popular
❖ GG-20	1) GG-7
❖ GG-7	2)GG-13
❖ GG-13	3)GG-20
❖ GJG-19	4)JL-24 5)TAG-24 **(especially for – kharif pak)**

Planting of groundnut have its own characteristics so given below some specialty and some factor which affect on groundnut's growth.

- **Factor affecting to groundnut**

1) High density planting of groundnut

There are many types for groundnut planting so if farmer do high density planting so it increase in production but can lower oil content in seeds. While wider spacing fewer pods but higher quality oil in seeds. It wills necessary that proper balancing of plant in farm for more production quality.

2) Time period for harvesting

If groundnuts will harvesting before it time so it reduced oil content 2-4%. Internal seed coat pattern are the best indicator of maturity not only where leaf yellowing. So this the main point to remember in harvesting time.

3) Groundnut require calcium absorption directly at the pod zone

(Pod zone is layer of soil where the groundnuts pods formal underground) groundnut need calcium directly in the soil at pod formation dept **(3-6 cm)** or ponds will shrink or become empty.

This is way farming scientist recommend gypsum application at pegging. But gypsum is not harmful because it's safe and natural insecticides (in proper level) if it used in very large quantities repeatedly without need so its harm to soil and crops both.

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- **Characteristics of Groundnut**

1) Unique reproductive feature geocarpy

In the world groundnut is one of the only crops where flowers bloom above ground but pods are prow under the soil. The fertilized flower forms a peg that bends down world and pushes into the soil where the groundnut pod develops. Only few plants on earth do this.

2) Suitable soil for planting of groundnut

If we show that which types of soiled make highest production so in **"sandy loam"** soil have **4-6%** higher oil content than grow on black cotton soil.

Junagadh is one of the city where groundnut has **46-50%** oil in groundnut's seeds, because of sandy loam soil.

3) Resveratrol in groundnut's seeds

Groundnut contain up to **3.5 mg/kg** of resveratrol, almost equal or higher than grapes. So, groundnut oil is considered heart-health in nutrition research.

Resveratrol important because it helps in health of heart that support heart health by reducing LDL-**(Low-Density-Lipoprotein)** oxidation and improve blood vessel function. In Gujarat many people used groundnut oil in daily eating thing.

4) Groundnut leaves – natural pest

Groundnut plants contain terpenoids that repel: a**phids, mites, leafhoppers**

Groundnut leaves have natural pest repellent chemicals. Leaf extract reduced pest attacks on other crops when used as a spray as (insecticides).

5) Oleic acid proportion in groundnut's seeds

Indian groundnuts have higher oleic acid than many countries. Especially in junagadh and 'saurashtra' have **48-52%** oleic acid which helps to improved

- **Oxidation resistance**
- **Flavor**
- **Oil shelf life**

This give to Indian groundnuts higher export value.

6) Use of groundnut in soil – bioremediation

Without only aim of profit groundnut can work to benefit soil in many situations like:

- **Absorb heavy metals**
- **Improve degraded soils**
- **Reduced soil toxicity**

So now we ask that groundnuts are a **"natural soil Purifier"** in polluted fields.

7) Groundnut as a – natural soil rebuilding system

Incorporating groundnut shells into field's increases soil organic carbon by 30-**40% within** 1-2 cropping seasons. This make groundnut farming a natural soil rebuilding system.

8) Nitrogen proportion in groundnut

Groundnut fix more nitrogen than many other legumes. Most of people know groundnuts fix nitrogen but few know how much, so **50-200 kg** nitrogen **per hectors.** But some varieties like **JL-24, GG-20** can more up to fix.

9) Allopathic and fodder benefit

Steams and leaves of groundnut plant are nutried rich **(12-18% protein)** for used for cattle's after harvesting and drying.

- **Effective insects to groundnut:**

There a lot of benefits of planting groundnut but there are many types of insect which harms to groundnut plants. So, now we explain different insects and causes and how to known characteristics of epidemic.

1)Pod | Flower | Feeder		
Name		**Scientific Name**
1.Spotted pod bore	–	maruca vitrata
Damage: larvae bore into flowers and pods.		
2.Caterpillar	-	Haliverpa armigera
Damage: feed on flower, leaves and pods		
3.Stink bugs	-	Nezaraviridula
Damage: suck sap from pods.		

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2)Sucking pest

Name	Scientific Name
1.Aphid -	Aphid craccivora

Damage: sucks sap from young leaves and shoots.
How to known: yellowing curling stunting vectors viral Diseases.

2.Thrips - Scirtothrips Dorsalis
Damage: scrape and suck tender leaves
How to known: silvery patches, leaf curl, stopped growth Vactor.
3.Leafhopper - Empoasca Kerri
Damage: sucks sap
How to known: yellowing, leaf curling, reduced Photosynthesis.

3)Soil | Root Pest

Name	Scientific Name
1. Termites -	odontotemes spp.

Damage: feed on roots and seedlings.
How to known: severe cases kill plants.

2.White grubs - anomala
Damage: larvae feed on roots.
How to known: stopped growth, door pod formation.

3.Cutworms - spodoptera litura
Damage: feed on leaves and young shoots.
How to known: defoliate speed lings.

- **Key notes: to farmer**

1. **Most damaging sucking pests** are aphids and thrips.
2. **Most damaging pod feeder is** maruca vitrata and helicoverpa armigera.
3. **Soil pest's** termites and white grubs especially in dry condition.
4. **Monitoring and management** monitoring and early management are crucial to reduced yield loss.

Source = NC state extension publications

- **Note**

Used appropriate insecticides for above different insects but as per personal issue of farmers and make guidance from known expert of agriculture based medicines and reduced losses. But for healthy and long benefits less use of insecticides and based on natural fertilizer i.e. earthworms are best medicine after died of it for any crops or plants for more growth.

CONCLUSION

These groundnuts are not only a nutritional powerhouse with compounds like resveratrol but also a "**vital economic backbone"** which supporting farmer's processors and traders across the region increase in total **GDP.**

For more growing of seeds it need a necessary natural fertilizer and insecticides (proper level)and vast mass of water with preservation after this services and conservation to plant only **20-50 pods** were ripen out of **200-500 flowers** yield of groundnuts fluctuate significant year to year depending on rainfall are under cultivation and other agronomic factor.

The overall stat production of Gujarat estimated at 42.19 **Lakh tones** approximate. For 2023-24 season **30.29 lakh tones approximate** statewide with Junagadh contributing around 4.53 **lakh** approximate.