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A Study on Oil Seeds Production in Tamil Nadu with special reference to Groundnut Production – A Decadal Study 2001 to 2018

Jebilah Victoria. K
MBA, Department of Management Studies
Bharath Institute of Science and Technology,
Selaiyur, Chennai, Tamil Nadu 600 073
Bharath Institute of Higher Education and Research

ABSTRACT

India is a major grower and producer of oilseeds as well as a major importer of vegetable oils ranks fourth among the countries in oil seeds economy next to USA, China and Brazil. It is estimated that nine oilseeds namely groundnut, rapeseed-mustard, soybean, sunflower, safflower, sesame, Niger, castor and linseed, accounted for an area of 23.44 million hectares with the production of 25.14 million tonnes. Out of the nine-oilseed crops grown in India, groundnut accounts for about 45 percent of the total cropped area under oilseeds and 55 percent of the total area under oilseeds production. As such, the edible oil economy in India is primarily depending on groundnut production Groundnut is called as the 'King' of oilseeds. It is one of the most important food and cash crops of our country. While being a valuable source of all the nutrients, it is a low-priced commodity. Groundnut is also called as wonder nut and poor men's cashew nut. Groundnut is one of the most important cash crops of our country. It is a low-priced commodity but a valuable source of all the nutrients. Groundnut is the sixth most important oilseed crop in the world. It contains 48-50% oil and 26-28% protein, and is a rich source of dietary fibre, minerals, and vitamins. Groundnut is grown on 26.4 million ha worldwide with a total production of 37.1 million metric/ha on and an average productivity of 1.4 metric t/ha (FAO, 2003). Over 100 countries worldwide grow groundnut. Developing countries constitute 97% of the global area and 94% of the global production of this crop. The production of groundnut is concentrated in Asia and Africa (56% and 40% of the global area and 68% and 25% of the global production, respectively).

1. NUTRITIOUS VALUE OF GROUNDNUT

Groundnut is an important protein supplement for cattle and poultry rations. It is also consumed as a confectionery product. The cake can be used for manufacturing artificial fibre. The haulms are fed to livestock. Groundnut shell is used as fuel for manufacturing coarse boards, cork substitutes. Groundnut is also valued as a rotation crop. Being a legume with root nodules, it can synthesize with atmospheric nitrogen and thereby improve soil fertility.

NUTRIENTS	AMOUNT IN 100GM OF SEED		DAILY REQUIREMENT PER ADULT
	RAW	FRIED	
Calories	564	582	2400
Protein(gm)	26	26	55
Fat(gm)	47.5	48.7	51
Calcium(mg)	69	72	400-500
Iron(mg)	2.1	2.2	20
Thiamine(B1)(mg)	1.1	0.3	1.2

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Niacin(mg)	17.2	17.2	16

From a nutritional stand point groundnut is almost a class by itself among low priced food products.

YELLOW REVOLUTION

The oilseeds production scenario in India has witnessed a dramatic turn. The country achieved a status of self sufficient and net exporter during early nineties, rising from the net importer state, with a mere annual production of nearly 11 million tonnes from the annual oilseed crops until the year 1986-87.

In a span of just a decade, an all time record oilseeds production of 25 million tonnes from annual oilseed crops was attained 1996-97. This transformation has been termed as "The Yellow Revolution" and could be primarily attributed to the institution supports, particularly the Government of India set up of the Technology mission oilseeds (TMO) in 1986. TMO with the objective to create the conditions that would harness the best of production, processing and storage to attain the self reliance in edible oils in the future.

2. REVIEW OF LITERATURE

Reddy (1934) reported that among the edible oilseeds groundnut is the most important one accounting for 46 per cent of the total area under oilseeds, about 67 per cent of the total oilseeds production or about 59 per cent of the total edible oil production in the country.
Lipton (1970) studied about fluctuations in areas and arrived at the conclusion that these fluctuations would adversely affect the production to a considerable extent. Therefore, it is necessary to determine the factors governing the production of groundnut.

Jhala (1980) estimated yield-rainfall relationship for groundnut regions at all-India level and found that there was a strong decisive influence of weather on groundnut yield and also formulated an econometric model for forecasting short term supply and deman for determining price of edible oils and oilseeds.

Naidu (1984) analysed the impact of area, rainfall and prices on production of groundnut in Andhra Pradesh and suggested the need to step up the productivity of groundnut by adopting improved practices as also by increasing irrigation facilities.

Chandravel (2012) compliance with food safety and other standards is critical for ground nut trade. In India while the acreage of ground nut is large, productivity is one of the lowest in the world. Therefore, there is a need to give a major thrust on developing ground nut varieties which are high yielding and promising in less – fertile regions and moisture stress conditions.
K.M.Shajehan joint director of Agriculture (2013) said ground nut is raised on 10,000 hectares under irrigated method and 8000 hectares under rain fed method.

FOOD SECURITY

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Food security means availability of sufficient food grains to meet the domestic demand as well as access, at the individual level, to adequate quantities of food at affordable prices. According to the Food and Agricultural Organization (FAO), food security "exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life". Household food security exists when all members, at all times, have access to enough food for an active, healthy life. Individuals who are food secure do not live in hunger or fear of starvation.

CLIMATE AND SOIL

Groundnut is grown throughout the tropics and its cultivation is extended to the subtropical countries lying between 45^{o} North and 35^{o} South and up to an altitude of 1,000 meters. The crop can be grown successfully in places receiving a minimum rainfall of 500 mm and a maximum rainfall of 1250 mm. The rainfall should be distributed well during the flowering and pegging of the crop. The total amount of rainfall required for pre sowing operations (preparatory) is 100 mm, for sowing it is 150 mm and for flowering and pod development an evenly distributed rainfall of 400-500 mm is required. The groundnut crop, however, cannot stand frost, long and severe drought or water stagnation. Groundnut is grown on a variety of soil types. However, the crop does best on sandy loam and loamy soil and in black soils with good drainage. Heavy and stiff clays are unsuitable for groundnut cultivation as the pod development is hampered in these soils.

SEASONS FOR GROUNDNUT CULTIVATION

Groundnut is raised mostly as a rain fed Kharif crop, being sown from May to June, depending on the monsoon rains. In some areas, or where the monsoon is delayed, it is sown as late August or early September. As an irrigated crop it is grown to a limited extent between January and March and between May and July. For a kharif crop, with the onset of rains in May and June.

GROUNDNUT IN INDIA

India along with China accounts for half of the world’s groundnut production today. I Groundnut is the major oilseed crop in India accounting for 5 per cent of oilseed area and 55 per cent of oilseed production in the country. India is rated as the third largest producer of groundnut in the world with annual production over 5-6 million tonnes. Gujarat, Andhra Pradesh, Tamil Nadu and Karnataka are the leading producers in the country and accounts for nearly 75 per cent of the total output. Groundnut contributes to nearly 25 per cent of total oil seed production in the country. Nearly 75 per cent output occurs in June-September and the rest during November-March known as kharif and Rabi seasons respectively. Climatic conditions, especially south-west monsoon plays significant role in shaping the fortunes of groundnut in the country.

In India, 6,853 thousand hectares of area is under cultivation and produces 7867 thousand tonnes of the groundnut during 2005-2006 as shown in table 1. Its production during 1996-97 was 8643 thousand tons with the yield of 1138 kgs per hectare in India. However, the area under groundnut was declined from 7596 thousand tonnes in 1996-97 to 5953 thousand tonnes in 2002-03. During the next three years i.e., from 2003-04 to 2007-08, the area under groundnut was increased from 5998 thousand tonnes to 6853 thousand tonnes. The reason for the declining trend of groundnut

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area is mainly change of cropping pattern and low rainfall in the southern states during the last few years. There were fluctuations in the production of groundnut in India during the decade 1996-97 to 2005-06.

IMPORTANCE OF GROUNDNUT

Groundnut is grown under different agro-climate conditions. It is used for a variety of purposes like shops, cosmetics, paints, lubricants and a series of other products along with the regular consumption purpose as edible oil. It is a source of fat, protein and vitamins. Groundnut cake is used as nutritive feed to cattle as well as source for the supply of organic manure. It has been an excellent export potential for India. Groundnut is the most popular oilseed crop in India. It contains about 45 percent of oil and 26 percent of protein. One gram of kernel supplies 5.8 calories of food. This is compared with four calories per gram of sugar, 3.5 calories for whole wheat, and 2.6 calories of bread. The biological value of groundnut protein is among the highest of the vegetable proteins and equals to that of casein. The oilcake obtained after the extraction o the oil is a valuable organic manure and animal feed. It contains 7.8 percent of nitrogen, 1.5 percent of phosphorus and 1.5 of percent of potash. It is a good rotation crop, which builds up soil fertility by fixing atmospheric nitrogen through the root nodules bacteria and an efficient cover crop of lands exposed to soil erosion. The study of growth and instability of agriculture product production, area and yield is an important concept to meet the future demand and further development of agriculture sector.

3. AREA OF THE STUDY

The state of Tamil Nadu has been taken as area under study. The statistics available for the districts which are under groundnut cultivation in the state of Tamil Nadu has been considered for this study.

4. METHODOLOGY

The study has been conducted based on secondary data. The secondary source of data include Statistical Handbook of Tamil Nadu, Statistical Abstract of Tamil Nadu, Magazines, Bulletins, Journals and various websites.

5. LIMITATIONS

The study is limited to groundnut cultivating districts in Tamil Nadu between 2001 and 2010. The study does not give a detailed account of groundnut situation in the state of Tamil Nadu as it ignores production of other crops except groundnut.

6. OBJECTIVES OF THE STUDY

- To study about decadal growth of groundnut production in Tamil Nadu

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- To compare the area under production of groundnut in various districts in Tamil Nadu.
- To analyse the relationship between area, production and rainfall in groundnut producing districts.

GROUNDNUT IN TAMIL NADU

Groundnut cultivation was encouraged under resident moisture through special programmes like NODP & OPTP at State Government Level (National oil seeds development programme and oil seeds production thrust project).

In Tamilnadu four oil seeds crops are grown namely Groundnut, Sesame, Sunflower and Castor. Groundnut occupies 81% of the area and 91% of the production. Even though it is predominantly grown rained crop (68%) in the state the productivity is higher (1957 kg/ha) i.e. next to Gujarat (2235 kg/ha) in India (2007 – 2008).

The rainy season groundnut crop received about 450-500mm of rainfall. The prevalence of early season drought is common. The success of the crop depends upon the distribution August, September and October.

The average yield of Kancheepuram and Thiruvallur is around 3t/ha, as the area under irrigated crop is higher in these districts. Tank and ground water irrigation sources are higher in these districts. In Tamilnadu for the irrigated crop VRI2 & JL24 varieties for the rain fed crop the small seeded TMV7 and local 'RED' varieties are popular. TMV2 seeds in the name of 'PATTANI' (means size of Peas).

GROUNDNUT (ARACHIS HYPOGAEA L)

Latest list of most promising groundnut varieties in Tamil Nadu
The major groundnut growing districts in Tamilnadu are North Arcot, South Arcot, Salem, and Coimbatore. The varieties are TMV 2, TMV 9, TMV 12 out of these TMV 2 occupies about 75% area. The soils in the entire Tamilnadu are sandy loams. Drought is common in this region and occurs either immediately after sowing. Leaf miner is another serious problem affecting groundnut crop in this region. Rusts and leaf spots are very serious diseases all over the state throughout the season (IEMR (2009) – The institute of economic and market research – New Delhi).

ANALYTICAL STUDY
TRENDS

To make a study regarding groundnut production in Tamil Nadu- a decadal report has been taken into account. The study has been done in connection with area under cultivation of groundnut, production level and annual rainfall.

From the above table, the area under cultivation of groundnut in Tamil Nadu has decreased from 663 lakh hectares to 413 lakh hectares from 2001-2010. Production during this period has also decreased from 1250 tonnes to 890 tonnes. There is no decadal growth between 2001 and 2010, but there is only decline in terms of all three aspects. But 2008-2009 was a best year because the area

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of cultivation decreased from 535 to 419, whereas there is an increase of the productivity from 1957 to 1990 kg/hec respectively.

The above table shows, the area under groundnut cultivation in lakh hectares in the various districts of Tamil Nadu in 2001-2010. In order to have decadal view over the aspects the beginnings of the decade and end of the decade have been taken. It has been observed that in all the districts the area under groundnut has decreased.

Tamilnadu comprises of seven agro climate zones viz. North Eastern, North Western, Western, Cauvery Delta, Southern, High Rainfall and Hill zones. Groundnut is cultivated in five zones except high rainfall and hill zones. The North Eastern zone comprising of Kancheepuram, Thiruvallur, Cuddalore, Villupuram, Vellore and Thiruvannamalai alone accounts for 53% of the groundnut area of the state. Similarly the North Western zone consists of Dharmapuri, Krishnagiri, Namakkal and Salem contributes 17% of the groundnut area. Hence, these two zones alone accounts for nearly 70%, while the Western, Delta and Southern zones contributes about 10% each.

7. FINDINGS

- Monsoon rain during this decade was more or less the same in Tamil Nadu.
- It is found that there is no severe fluctuations in rainfall.
- It is found that there is a drastic change in groundnut production over the years.
- The total production came down from 1250 lakh tonnes to 890 lakh tonnes.
- The data reveals that inspite of sufficient rainfall the volume of production has come down.
- It has been found that the decrease in area under groundnut cultivation in almost all the districts of Tamil Nadu.
- From the earlier study pests and incidence are the major threat in groundnut production which causing more than 25 per cent of yield loss.
- In Tamil Nadu drought as major problem as it affects the groundnut production.

8. SUGGESTIONS

To improve biological technology further in the sphere of groundnut productions in the State. Greater attention should be paid to develop new seeds, suitable to climate variation.
The extension machinery in the State should be geared up to render necessary supporting services, so that the new technology would spread very quickly among large number of groundnut producer in the state.

The controlling of pest and disease depend on the adoption of techniques. The Government should give information training and awareness about the type of pesticides to be used and quantity method of mixing the chemicals.

9. CONCLUSION

The reduction in land holding size in Tamil Nadu directly affects the productivity as the farmer would not be able to afford the investments required for technological improvement. Functional consolidation of holdings through cooperative farming, contract farming and other mechanisms

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such as farmer groups and joint liability groups need to be aggressively initiated in Tamil Nadu to increase the penetration of modern agricultural technologies and improve output.

The current productivity of the crops needs to be augmented manifold to match evolving international standards by universal adoption of scientific agriculture methods such as better soil health management, emphasis on high quality and high yield seeds and improved deployment of agricultural machines.

Agriculture is highly dependent on specific climatic conditions. The effects of climate change should be considered along with other developments in agricultural production. Climate change may sometimes increase productivity of some crops but decrease their quality. In developing countries like India the effects of climate change on agriculture and food supply is more as options in crop management and irrigation are limited. The area under cultivation has reduced. It is high time for both the people and government to understand the intensity of the problem and come out with right measures to mitigate the problem. So government should take appropriate steps.

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