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TRENDS IN GROUNDNUT CULTIVATION IN ANANTHAPURAMU DISTRICT OF ANDHRA PRADESH

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ABSTRACT

Despite the agro-ecologically marginal conditions for rainfed groundnut production and the consequent poor performance of the crop from year to year in terms of final yield, the area and production in the region have shown an increasing trend over the years. This region, as such, does not provide optimal conditions for a sustained production of groundnuts. Nevertheless, the farmers of the region continue to adopt groundnut-based cropping systems. Thus, the reasons for an increasing trend, unfortunately, appear to be related more to the lack of awareness of the farmer on the availability of better performing, more profitable, alternate cropping systems suitable for the region than to the motivation a sustained production would otherwise offer. Despite its shortcomings, this region represents a potential area for concerted efforts of interdisciplinary research for improving groundnut productivity.

INTRODUCTION

Ananthapuramu district in Andhra Pradesh is the second most drought-affected district of India. It receives around 500 mm rainfall annually. The distribution of rainfall varies considerably from year to year and season to season. The district receives a mean annual rainfall of 536 mm of which 310 mm is received during south west monsoon and 146 mm during north east monsoon. The dominant soil types in the district are red gravelly soils. The district has an area of 814000 ha under rainfed situation (73% of net sown area). The major rainfed crops cultivated in the district are groundnut, chickpea, pigeon pea, sunflower, rice and sorghum. Two or three ploughings with a country plough followed by working of a blade harrow to level the field was the common practice. Only one farmer ploughed with tractor. The most common method of sowing was with country seed drill with a separate hopper loosely attached or hopper attached to the types itself. The spacing adopted was 30-40 cm between rows while the plant to plant spacing was not constant.



Prior to the 1960s, rain-fed farming in this region was primarily for meeting home consumption requirements of the farmer and demands of the local market for food and fodder. Minor millets were grown as the main crop in most areas. In small patches either pigeon-pea, castor, sorghum or groundnut were grown as the main crops; whereas groundnut was used primarily as a condiment, oil was also produced using traditional bullock powered mills.

This complex cropping system had evolved over a long period and hence was presumably tailored to the climate variability of the region. The last three decades witnessed major changes in the cropping pattern as well as in the technological options. The variety of groundnut cultivated in the 1960s and early 1970s was a traditional runner variety, which required about 150 days for maturity. The variety TMV-2 was introduced in the region during the early 1970s. Gradually by the late 1970s, the bunch type had replaced the runner type completely. At present, groundnut (variety TMV-2) is the major crop cultivated in the rain-fed regions of the Ananthapuramu District.

The farmer in Ananthapuramu treats groundnut more like a lottery, as every four or five years, he gets a bumper yield which makes up his losses. When there are major losses there is also some compensation from government. The livelihood of people in the semi arid zones, is spread across different economic activities like sheep rearing, trees, kitchen garden, handicraft, wage labour including NREGA, foraging etc. Thus ground nut farmers in Ananthapuramu can afford risk, as the basis of poor people's livelihood security comes from other sources.

AREA UNDER GROUNDNUT IN ANANTHAPURAMU DISTRICT

The season wise area under groundnut in Ananthapuramu district is presented in table: 1.

Table-1
Season Wise Area under groundnut in Ananthapuramu District

(Area in hectares)

Year	Year	Kharif	Growth Rate	Rabi	Growth Rate	Total	Growth Rate
1	2001-02	758700	-	18773		777473	-
2	2002-03	732262	-3.48	17529	-6.63	749791	-3.56
3	2003-04	670935	-8.38	15060	-14.09	685995	-8.51
4	2004-05	857823	27.85	14500	-3.72	872323	27.16
5	2005-06	877029	2.24	22006	51.77	899035	3.06
6	2006-07	644007	-26.57	18104	-17.73	662111	-26.35
7	2007-08	876000	36.02	21000	16.00	897000	35.48
8	2008-09	853577	-2.56	16879	-19.62	870456	-2.96
9	2009-10	510874	-40.15	19507	15.57	530381	-39.07
10	2010-11	814077	59.35	19993	2.49	834070	57.26
11	2011-12	733960	-9.84	19876	-0.59	753836	-9.62
12	2012-13	708708	-3.44	20987	5.59	729695	-3.20
13	2013-14	711145	0.34	17303	-17.55	728448	-0.17

Source: Directorate of Economics and Statistics, Government of Andhra Pradesh, Hyderabad.

The data in table 1 shows that the area under groundnut in Ananthapuramu district during Kharif as well as Rabi seasons is not evenly distributed. The highest hectares 8.77 lakh hectares and 22 thousand hectares are registered in 2005-2006 during Kharif and Rabi seasons respectively. During Kharif season lowest area of 5.11 hectares is registered in 2009-2010. In Rabi season lowest area of 14.5 thousand hectares is registered in 2004-2005. Negative growth rate in area during Kharif as well as Rabi seasons is registered during 7 out of 13 years of

study. The total area under groundnut in the district is also erratically distributed the highest and lowest area under groundnut in the district is registered in 2005-2006 and 2009-2010 respectively. In the total area under groundnut in the district registered negative growth rate during 8 out of 13 years of study. it can be concluded that the variation in the area in groundnut cultivation can be attributed to the factors like commencement of south-west monsoons, rainfall, timely supply of seeds by government etc.

PRODUCTION OF GROUNDNUT IN ANANTHAPURAMU DISTRICT

The production of groundnut in the district largely depends upon the spread of rainfall to different Mandals of the district. As the groundnut in the district is largely rainfed production depends on rainfall. The plant diseases like leaf webber, leaf miner, red hairy caterpillar and root grub were the important insect pests noticed in this district, which also influences the production of groundnut. Tikka leaf spot, root rot and rosette were observed. Tikka leaf spot was more on spreading type of groundnut and since the disease appeared late, it might cause in the lowering of production of groundnut in the district. The production details of groundnut in Ananthapuramu district is presented in table 2.

Table-2
Production of Groundnut in Ananthapuramu District

Year	Year	Production(In Tonnes)	Growth Rate
1	2001-02	363020	
2	2002-03	278604	-23.25
3	2003-04	207681	-25.46
4	2004-05	706279	240.08
5	2005-06	391965	-44.50
6	2006-07	62139	-84.15
7	2007-08	113000	81.85
8	2008-09	100012	-11.49
9	2009-10	141976	41.96
10	2010-11	480996	238.79
11	2011-12	207378	-56.89
12	2012-13	329950	59.11
13	2013-14	312926	-5.16

Source: Directorate of Economics and Statistics, Government of Andhra Pradesh, Hyderabad.

It is clear from table 2 that the production of groundnut in the district is gradually declining after 2004-2005 except with two exceptions. It is in 2004-05 the district produced 7 lakh tonnes of groundnut, which is

highest during 13 years of study. The groundnut production in the district touched the lowest ebb of 62 thousand tonnes in 2006-2007. Positive growth trends in the production of groundnut in the district are registered during 5 out of 13 years of study.

SEASON WISE GROUNDNUT YIELD IN ANANTHAPURAMU DISTRICT

Visual symptoms of deficiency of phosphorus and zinc were observed in 50 per cent of groundnut growing soils in the district. About 5 to 10 percent of the groundnut growing soils in the district showed these deficiency symptoms. These symptoms were pronounced in Kadiri and Hindupur areas of the district. Chemical analysis of soil samples showed that 35 per cent of the soil samples were low in available P and 95 per cent of the soil samples low in available zinc. Chemical analysis of groundnut growing soils in the district has shown low in P content and 87 per cent low in Zn content. These are affecting the yield of the groundnut in the district. Improper seed treatment with fungicide by farmers in the district was also influencing the yield of groundnut in the district. Table 3 gives the particulars of season wise yield of groundnut in Ananthapuramu district.

Table-3
Season Wise Yield of Groundnut in Ananthapuramu District

(Tonnes/Hect.)

Year	Kharif	Growth Rate	Rabi	Growth Rate	Total	Growth Rate
2001-02	0.44		1.55		0.47	
2002-03	0.35	-20.45	1.06	-31.61	0.37	-21.28
2003-04	0.28	-20	1.32	24.528	0.3	-18.92
2004-05	0.8	185.71	1.5	13.636	0.81	170
2005-06	0.41	-48.75	1.35	-10	0.44	-45.68
2006-07	0.07	-82.93	1.05	-22.22	0.09	-79.55
2007-08	1.26	1700	1.33	26.667	1.26	1300
2008-09	0.09	-92.86	1.48	11.278	0.11	-91.27
2009-10	0.22	144.44	1.44	-2.703	0.27	145.45
2010-11	0.55	150	1.7	18.056	0.58	114.81
2011-12	0.24	-56.36	1.64	-3.529	0.28	-51.72
2012-13	0.42	75	1.64	0	0.45	60.714
2013-14	0.4	-4.762	1.52	-7.317	0.43	-4.444

Source: Directorate of Economics and Statistics, Government of Andhra Pradesh, Hyderabad.

It is evident from table 3 that the yield rate of groundnut in the district is higher in Rabi season than Kharif season in the district. Positive growth rate during Kharif season is registered during 5 years out of 13 years of study. On the other hand, during Rabi season negative growth rate is registered during 6 out of 13 years of study. the negative growth rate in total yield of groundnut in the district is registered 7 out of 13 years of study. During Kharif season highest and lowest yield per hectare is registered in 2007-2008 (1.22 tonnes per hectare) and 2008-2009 (0.09 tonnes per hectare) respectively. . During Rabi season highest and lowest yield per hectare is registered in two consecutive years i.e. 2011-12& 2012-13(1.64 tonnes per hectare) and 2006-2007 (1.05 tonnes per hectare) respectively.

CONCLUSION

There is considerable scope for increasing the yield by using improved varieties, seed selection, increasing seed rate, seed treatment with fungicide, application of fertilizers and zinc and adopting proper plant protection measures. The major insect pests were leaf webber, leaf miner, red hairy caterpillar and root grub. The incidence of red hairy caterpillar was on the increase. Plant protection measures were not usually adopted. The major diseases were Tikka leaf spot and rust.. Visual symptoms of nutrient deficiencies of phosphorus and zinc were noticed extensively. Chemical analysis of soil samples has shown that 35% of the samples were low in available P and 95% low in available Zn. Chemical analysis of plant samples has shown that 85% of the samples were low in P content and 87% low in zinc content.

The groundnut productivity in the Ananthapuramu region is low when compared to the state and national levels. This is due to various constraints to production. During certain severely constrained years, the farmers fail to recover even the minimal cost incurred on production. The following constraints to production were identified based on a socioeconomic survey of the groundnut farmers from the region during the 1998 cropping season.

In general, the yield levels in the Ananthapuramu region are lower by 10 per cent when compared to the state and national yields under the best case scenario. Under the worst case scenario, the yields are lower by 25 per cent of the state and national yields. The situation is much worse when compared to the yield levels of some of the leading groundnut producers in the world, e.g., China and USA where the yield levels are five-fold high. Such low yields in the Ananthapuramu region are attributed to severe production constraints posed by the natural resources as well as the socioeconomic conditions of the farming community.

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