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A STUDY ON THE TREND OF AREA, PRODUCTION AND PRODUCTIVITY OF GINGER IN ASSAM WITH SPECIAL REFERENCE TO KARBI ANGLONG DISTRICT, AN IMPORTANT GINGER POCKET IN ASSAM

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ABSTRACT

Ginger cultivation is undertaken as a cash crop mostly in *jhum* (shifting cultivation) fields spread over hills and plains of tribal dominated areas of the entire region. The north eastern region comprising of eight states namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura has tremendous potential for production of spice crops. Among the constituent states of North Eastern Region(NER), Meghalaya, Manipur, Mizoram and Assam account for about 90 percent of the total production of ginger in the region. The predominant areas of the region are Nongpoh and Nayabanglow areas of Khasi hills and Rongram-Jengjal area of Garo hills in Meghalaya, Aizawl-Kolsib, Steek and Lunglei areas in Mizoram, Churachandpur and Singhat areas in Manipur, Karbi Anglong and North Cachar hills Districts in Assam, Workhar and Ghaspani areas in Nagaland and Jumpui hills areas in Tripura.

KEYWORDS: cash crop, spices, ginger, agro-climate, cultivation,

1.1 GINGER IN NORTHEAST OR INTRODUCTION

There are various spices are grown in North eastern region like ginger, chillies, large cardamom, black pepper, turmeric etc. Among all spices, ginger is the main cash crop supporting the livelihood of many farmers of North Eastern region. The agro-climate of North-East India is characterized by warm humid summer with abundant rainfall and a cool winter is particularly suitable for ginger cultivation, and as a result, a wide array of genetic diversity in this spice crop is encountered in the region. Ginger cultivation is undertaken as a cash crop mostly in *jhum* (shifting cultivation) fields spread over hills and plains of tribal dominated areas of the entire region. The north eastern region comprising of eight states namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura has

tremendous potential for production of spice crops. Among the constituent states of North Eastern Region(NER), Meghalaya, Manipur, Mizoram and Assam account for about 90 percent of the total production of ginger in the region. The predominant areas of the region are Nongpoh and Nayabanglow areas of Khasi hills and Rongram-Jengjal area of Garo hills in Meghalaya, Aizawl-Kolsib, Steek and Lunglei areas in Mizoram, Churachandpur and Singhat areas in Manipur, Karbi Anglong and North Cachar hills Districts in Assam, Workhar and Ghaspani areas in Nagaland and Jumpui hills areas in Tripura.

1.2 GINGER PRODUCTION IN ASSAM

Ginger is grown in almost all the districts of Assam. Dima Hassao is the leading producer of ginger both in terms area and production followed by Karbi Anglong, Tinsukia, Darrang etc. The different varieties of ginger grown in Assam are Rio-de-Janeiro,

Nadia, Karkai, Bardwan, Moran, Jorhat, China etc.
District wise area, production and productivity of

ginger in Assam during the period 2009-2010 to 2011-
2012 is shown in Table No.-1

Table No.-1: District wise area, production and productivity of ginger in Assam

District	2009-2010			2010-2011			2011-2012		
	A	P	AY	A	P	AY	A	P	AY
Cachar	210	1458	6941	232	1610	6941	238	1662	6985
Hailakandi	215	1085	5046	185	934	5046	205	1058	5161
Karimganj	115	854	7429	126	936	7429	138	1046	7583
Goalpara	410	2920	7122	450	3205	7122	450	3264	7255
Dhubri	101	854	8452	95	803	8452	118	1011	8573
Kokrajhar	351	2249	6406	586	3754	6406	373	2444	6555
Bongaigaon	171	1053	6158	175	1077	6158	170	1067	6282
Kamrup(R)	384	2849	7419	314	2329	7419	320	2419	7560
Nalbari	166	1154	6954	195	1356	6954	230	1833	7970
Barpeta	518	3378	6520	734	4786	6520	725	4813	6639
Darrang	402	2663	6625	390	2584	6625	392	2643	6744
Sonitpur	961	6226	6478	974	6310	6478	1124	8412	7484
Nagoan	511	4925	9640	491	4734	9640	554	5462	9862
Morigoan	223	1953	8759	229	2006	8759	271	2403	8868
Baksa	461	3192	6923	465	3219	6923	440	3075	6988
Chirang	213	1483	6962	391	2722	6962	302	1510	5000
Kamrup(M)	104	606	5827	107	623	5827	110	1085	9865
Udalguri	949	6101	6429	928	5966	6429	823	7302	8872
Jorhat	191	1300	6807	286	1947	6807	168	1318	7845
Golaghat	1206	7869	6525	1222	7974	6525	1190	10637	8940
Sivasagar	196	1109	5656	182	1030	5656	147	981	6680
Lakhimpur	420	3211	7645	366	2798	7645	441	3393	7696
Dhemaji	380	3302	8690	425	3693	8690	433	3788	8749
Dibrugarh	123	684	5557	145	806	5557	148	1144	7735
Tinsukia	893	6106	6838	985	6735	6838	759	5301	6985
Karbi Anglong	2481	17448	7033	2498	17569	7033	2343	17021	7265
Dima Hasao	3335	21861	6555	3210	21042	6555	3726	25277	6784
Assam	15690	107893	6877	1638	112548	6868	16338	12136	7429
				6				9	

Source: Department of Horticulture, Guwahati

1.2.1 Varietal Characteristics of Assam

Ginger:-

- ↺ Size of the Rhizome: Medium
- ↺ Colour of the Skin: Buff (Yellow)
- ↺ Pungency: High
- ↺ Flavour (Aroma): High
- ↺ Fibre: Fibrous
- ↺ Self-Life (Months): 9

Source: (North Eastern Region Agri-Entrepreneur Group)

1.2.2 Growth trend of ginger in Assam:-

Statistical analysis of the area, production and yield of ginger in Assam during the period 2002-2003 to 2011-2012 is shown in Table No.-2 and Fig No.-1

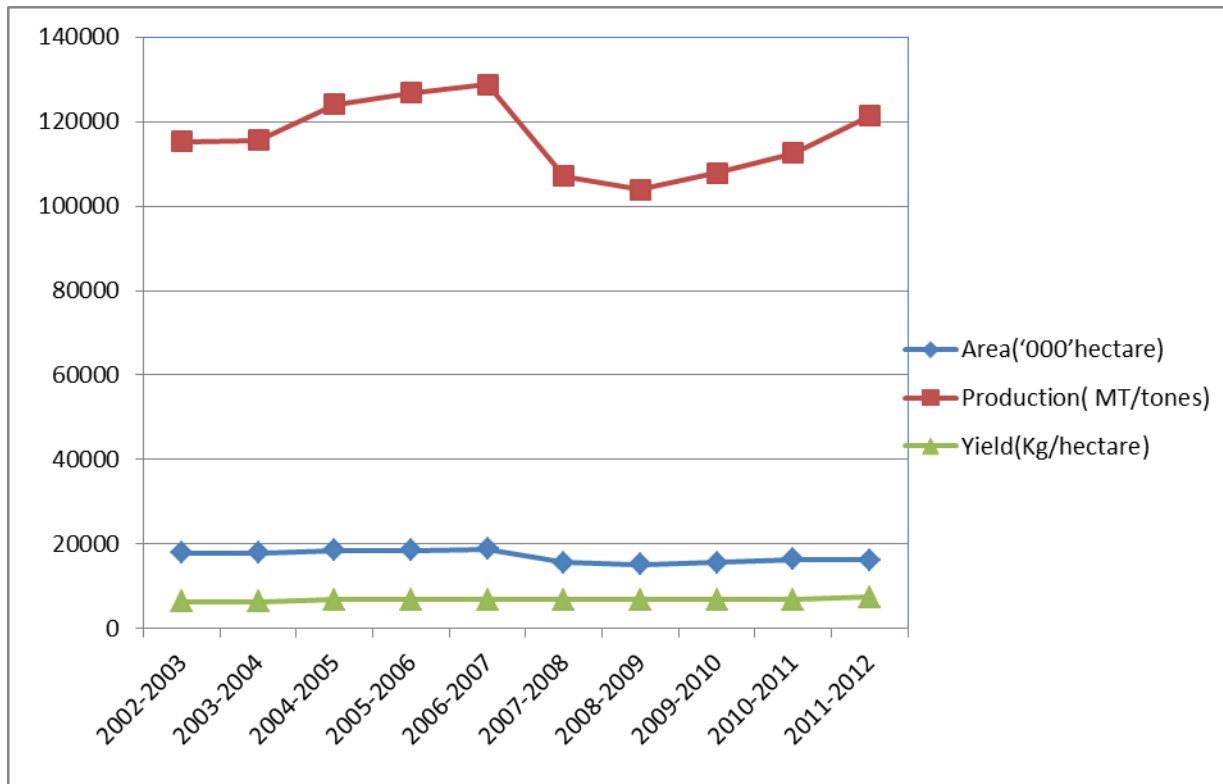
Table No. -2: Area, Production and Productivity of Ginger in Assam during the period 2002-2003 to 2011-2012

Year	Area('000'hectare)	Production (MT/tones)	Yield(Kg/hectare)
2002-2003	17970	115229	6412
2003-2004	17980	115549	6420
2004-2005	18480	123987	6820
2005-2006	18565	126789	6830
2006-2007	18855	128817	6832
2007-2008	15624	107076	6853
2008-2009	15210	103915	6832
2009-2010	15690	107893	6877
2010-2011	16386	112548	6868
2011-2012	16338	121369	7429
Mean	17109.80	116317.20	6817.30
SD	1394.04	8669.31	279.74
CV	8.15%	7.45%	4.10%
Decadal GR %	-1.05%	0.58%	1.65%

Table No.-2 clearly shows that there is decrease in area with the decadal growth rate of negative 1.05 percent. The average (mean) land use over the decade was 17109.80 while standard deviation was 1394.04. The coefficient of variation (CV= SD/Mean) for agricultural area was 8.15 percent. In terms of production there was a meagre increase in

agricultural production over the decade with 0.58 percent increment. The coefficient of variation for production was 7.45 percent which is somehow more consistent and uniform than the series of area of agricultural land use. Among the three series yield per hectare was most consistent, uniform and stable with coefficient of variation 4.10 percent.

Fig No.-1 Area, production and yield of ginger in Assam during the period 2002-2003 to 2011-2012



1.3 GINGER PRODUCTION IN KARBI ANGLONG DISTRICT

Karbi Anglong district is one of the ginger-producing belts of Assam which can play a major role in the fast expanding organic ginger market not only within the country but also abroad the country. It has three geographical tracts, plains, hills with gentle slopes and hills with steep slopes. About 85 percent of the district is covered by hills. The district covering some 10434 sq. km is the largest in Assam, which is about 13 percent of the state's total area. About 30 percent of the district's area is forest covering with dense tropical forest on hills and flat plains. The total cropped area is 18 percent out of which 68 percent is net sown. About 32 percent of the net sown area is sown more than once. The rest is barren and uncultivable.

The district is predominant by different tribes like Karbi, Dimasa, Kuki, Boro, Garo etc. Along with these tribes some non tribal peoples also live together in the district. The indigenous tribes traditionally practice jhum cultivation in the hilly area while sedentary or wet cultivation is widely practised in the plains. The major crops under jhum cultivation include maize, cotton, rice, ginger, turmeric, tapioca, wheat, oil seeds, sugarcane, fruits and vegetables are the main crops in the plains.

Ginger is grown as an important cash crop in the hills. The traditional system of ginger cultivation in the district is jhum system and tila system. The raw ginger of Karbi Anglong are supplied to different parts of India like Delhi, Siliguri, Kolkata etc. which are exported to middle East and far West countries. Prospective buyers like ITC Ltd., STACON,

New Delhi, Rayfam, New Delhi, Sresta Natural Bio Products Ltd., Hyderabad, NERAMAC, NAFED etc. are showing immense interest on Karbi Anglong ginger (GIN-FED report 2007). Hence, there is immense scope for increasing the area and production of ginger by utilizing the available barrens land of the hill slopes which have favourable soil and climatic condition for the same. Ginger can play a major role in improving the income or economy of the farmer in the district. Because ginger grown in the district has the potentiality to become an organic ginger (by default) since farmers are not using any modern inputs for its cultivation

1.3.1 Varieties of ginger grown in Karbi Anglong District:-

- ♦ Nadia
- ♦ Aizol
- ♦ Rio-de-Janeiro

There are mainly two types of ginger grown in Karbi Anglong district. They are Nadia and Aizol (Bhola). Aizol ginger has less fibre which is produced for the purpose of export to almost all part of the country and outside the country and Nadia ginger has high fibre which is normally used for the domestic purpose. Its marketing area is within the state and neighbouring state like West Bengal. Small amount of Rio-de-jeneroi type of ginger is also grown in the district.

1.3.2 Growth trend of ginger in Karbi Anglong District of Assam:-

Statistical analysis of area, production and productivity of ginger in Karbi Anglong district is shown in Table No.-3 and Fig No.-2

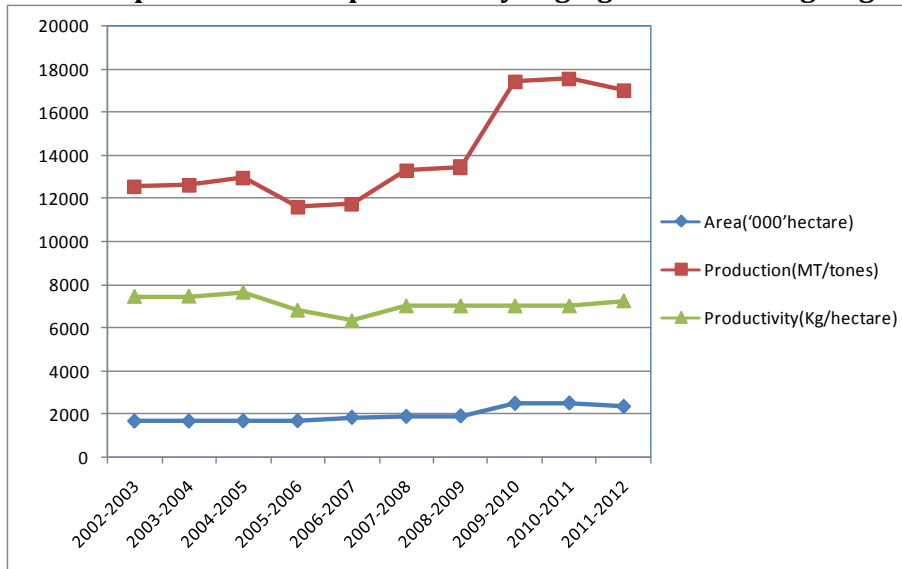
TableNo.-3: Area, Production and Productivity of Ginger in Karbi Anglong District during the period 2002-2003 to 2011-2012

Year	Area ('000'hectare)	Production (MT/tones)	Productivity (Kg/hectare)
2002-2003	1684	12580	7470
2003-2004	1685	12612	7480
2004-2005	1693	12979	7660
2005-2006	1700	11619	6835
2006-2007	1849	11741	6350
2007-2008	1894	13321	7033
2008-2009	1916	13475	7033
2009-2010	2481	17448	7033
2010-2011	2498	17569	7033
2011-2012	2343	17021	7265
Mean	1974.30	14036.50	7119.20
SD	335.80	2362.53	375.52
CV	17.01%	16.83%	5.27%
Decadal GR%	3.74%	3.4%	-0.31%

TableNo.-3 shows relationship of land use in terms of area, production and productivity during 2002-2012 in Karbi Anglong district of Assam. The area under cultivation had increased in this area in terms decadal growth rate with 3.74 percent increase over the decade but with less uniform, less stable and variability compared to production and productivity. The decadal growth rate for production was 3.4

percent which is less than decadal growth rate of area under cultivation but there is a slight consistency when observed from coefficient of variation. Productivity has shown a negative decadal growth rate of - 0.31 percent but the coefficient of variation is least which shows it is most consistent, stable and uniform.

Fig oN-2: Area production and productivity of ginger in Karbi Anglong District



CONCLUSION

Assam is contributing a considerable chunk of India’s total ginger production and Karbi Anglong district has been an important ginger producing district in Assam till now. Assam amongst other North Eastern states has immense potentiality in terms of ginger production. But farmers are using primitive method of cultivation to grow ginger. Scientific and modern methods of cultivation is rarely used. Hence production is not reaching the highest level. However one unique quality of ginger produced here is that it is produced in organic manner.

In Karbi Anglong even though Ginger is grown on bigger scale, fluctuating nature of Ginger price have made the farmers vulnerable in their livelihood as a ginger grower. Again they are subject to the exploitation of middleman and wholesalers. Factors like farmer’s lack of awareness about the market value proposition of different processed ginger products, lack of orientation on organic ginger, lack of collective strength are landing them with loss or very less profit in ginger cultivation. Still they are clinging to it as soil here is suitable to ginger cultivation. But there is enormous scope to change the entire scenario. Ginger could prove to be the biggest revenue earner not only for the district but for the state itself. With abundance of natural resources

conducive weather and soil condition for ginger cultivation, other things required to enhance production would comprise of good post harvest management system, a strong value chain management system, a strong infrastructure for processing, a good marketing policy favouring farmers etc. Once these facilities are provided more and more farmers from these areas would start doing he ginger cultivation and thus boost the State’s economy.

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