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NUTRITIONAL STATUS AND HOUSEHOLD FOOD SECURITY AMONG TRIBALS OF ANDHRA PRADESH A.P. TRIBAL DEVELOPMENT PROJECT AREA.



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#### **EXECUTIVE SUMMARY**

A base line survery was conducted in 23 villages situated in four International Fund for Agriculture Development (IFAD) activity areas belonging to four Integrated Tribal Development Agency (ITDA) areas in the State of Andhra Pradesh in India. The study was conducted in 3 different seasons by the same group of Investigators during 1993 & 1994 in the same villages. The objectives of the study were (i) to assess the dietary intakes of various tribal population and to compare with the Recommended Dietary Allowances (RDAs) prescribed by the Indian Council of Medical Research in order to identify the adequacy or otherwise of the intakes of different dietary components, (ii) to evaluate the nutritional status of different age group populations, (iii) to obtain information from households on people's perception about foods to be avoided and the reasons thereof, (iv) to obtain information on food security in the tribal households and (v) to study traditional food habits and subsequent changes in diets, if any.

The baseline survey findings were perceived as reference points to evaluate the impact of Andhra Pradesh Tribal Development Project (APTDP) aided by IFAD, Rome. One of the important issues having a bearing on the morbidity status of tribal population which needs attention is their nutritional status. The various components of International Fund for Agriculture Development Project either directly or indirectly are likely to influence the food and nutrition situation within the beneficiary communities.

A total of 14 tribes were covered in the study. In general, dietary intakes were inadequate among all tribal communities compared to RDA. In this study, it was not possible to evaluate individual dietary intakes age-wise and discuss the findings in relation to respective age specific RDA. Instead, intakes per Consumption Unit (CU) were calculated and compared with RDA per moderate adult male worker, since the tribal population were not engaged in heavy manual labour at the time of survery or at the time of analysis. The adequacy or otherwise were thus between per CU versus RDA as described above. Nutritional status of the children was assessed based on anthropometric indices. For standard "Weights for Age", the recommendation of Indian Association of Paediatrics (IAP) was used. For classification of grades of under nutrition, the "Harward" classification was used.

An earlier Rapid Appraisal Report submitted by the same investigators indicated that the major health issue in the tribal areas was malnutrition including micro-nutrient deficiency. Therefore, the present study emphasised only on nutrition studies.

### **POPULATION STUDIED:**

A total of 625 households in 23 villages were included in the study sample. The population studied was 2994 with 1510 males and 1484 females. The 14 tribal groups

investigated include Bagatha, Gadaba, Jatapu, Kammara, Khond, Konda Dora, Konda Reddy, Kotia, Koya, Mali, Mukha Dora, Porja, Savara and Valmiki. These tribals lived as individual groups in each village even though more than one group lived in one village. Some of the social and food customs were region specific while a few food related issues were specific to the tribal group. The average family size overall was 4.79 while it varied from 3.89 for kammara to 6-10 for Khonds.

Information was generated on the breast feeding practices, marital status, occupation particulars, live stock ownership, land holding particulars, literacy levels, cropping patterns, minor forest produce collection, dietary taboos and dietary information.

In order to obtain the nutritional status of children under 15 years age, hight was measured with standard Anthropometric rod and weight was measured with standard bath room balance and length of infants was taken using infantometer.

The significant observations in the study was that severe malnutrition of grades III & IV were very common. In males, the overall prevalence of grade IV malnutrition was observed to the extent of 2.12%. Individual tribal communities like Gadaba, Bagatha, Jatapu and Valmiki has grade IV malnutrition figures (All age groups together) of 16.7%, 4.8%, 3.3% and 3.2% respectively. This is an alarming proportion. Grade III malnutrition overall was 9.2% and in different tribes, it varied from 7.14% to 22.58%. The grade I & II malnutrition prevalence in all the age groups in all tribes together worked out to be 27.9% & 19.1% respectively.

In females, the overall figures for grade III & IV malnutrition across all age groups and all tribes were 4.76% & 3.37% respectively. For some reasons, grade III malnutrition was more among the males compared to females. On the other hand, grade IV malnutrition was more among the females than males. In Mali community highest grade IV malnutrition was observed among females.

### **SEASONAL VARIATION:**

obtained. As a result, an opportunity was provided to identify seasonal variation in the dietary intakes. Seasonal variation was obvious in cereal intake, pulse intake, intake of roots and tubers, intake of vegetables & fruits and leafy vegetables. The seasonal variation was very obivous in cereal intake as evidenced by the fact that in all the 14 tribes cereal intake was highest in winter season and lowest in summer season. This is an evidence that there is no household food security among the tribes and their intakes are determined by nature. The figures for seasonal difference for cereal intake varied as evidenced by the fact that in all the 14 tribes, the consumption was highest in winter and lowest in rainy season. The seasonal differences ranged from 57 gms in Gadabas to 126 gms in Kammaras. Consumption of pulses also showed variation, the highest consumption being

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in winter followed by summer and rainy seasons. Roots and tubers were maximally consumed in summer. Milk and meat products and oils and fats did not show any variation, while leafy vegetables were consumed maximum in rainy season by all the tribals. This seasonal variation has relevance to seasonal variation of the nutritional deficiency signs. This has great relevance to the IFAD programme.

ii) Nutrient Intake: Nutritional intake which was computed based on the dietary intakes therefore, also showed seasonal variation. Vitamin-A consumption was minimal in all tribal populations in winter season. Unlike in the plain areas, the tribal populations are endowed with rich minor forest produce including fruit bearing trees. These fruits like mango which they eat in raw or ripe form, yield considerable amount of Vit-A consumption was highest in summer. There is also a possibility that the fish which is consumed in summer as the water sources dry up, may also have contributed to Vit-A content of the tribals. Anaemia is a health problem but the present study indicated enormous variation in the Iron intake between the seasons. Interestingly, intake of iron among all tribals was highest in summer season being more than two or three times compared to intake in winter or rainy season. This is obviously attributable to the high intake of tamarind and certain foods rich with iron such as Jack fruit in summer season. The local brew consumed more in summer, also contains jaggery rich in iron.

### **BREAST FEEDING:**

Breast feeding was common among tribal mothers. It is a good practice that the tribal mothers are following this traditional prolonged breast feeding which is recommended in the modern times as a means of birth spacing since it is known that prolonged breast feeding causes lactational amenorrhoea which is protective against pregnancy. It was observed that more than 92 per cent mothers in 23 villages were breast feeding.

### MARRIAGE AS A SOCIAL COMPONENT:

The tribes of Andhra Pradesh studied have clear concept of marriage as a social custom and lead married life with their spouses for a long time. Occasionally or rather rarely, they divorce. In the study, out of 1519 married people interrogated, it was observed that 1361 married women and men were living with spouses. More number of widows were observed than widowers. The reason for higher widows rather than widowers can be attributed to early death of men. It is known that malnutrition coupled with alcoholism contributes to higher mortality. This social issue needs further investigation.

### **OCCUPATION PARTICULARS:**

Earlier the tribal people lived as hunter - gatherers but at the time of this study, it was observed that out of 1651, 1436 people were agriculturists and out of the remaining, 197 were agricultural labourers. Only 18 people were working in the society, in some jobs or

the other. This shows the highly agricultural based social dependency of tribal populations. As a subsidiary occupation, most of them were engaged in the collection of minor forest produce. The tribals still earn their day to day requirements through barter system.

### **LIVE STOCK PARTICULARS:**

I.T.D.A's and other agencies had attempted to settle the tribal people on agricultural land as a permanent abode. While shifting cultivation is still in vogue, agriculture has been taken up by the tribal residents. As a result, they own a variety of live stock. In this study, it was observed that the 625 families owned atleast 6 varieties of animals, some of them milch cattle and the others meat yielding species. 611 goats, 524 bullocks, 441 cows and 94 buffaloes in addition to poultry pigs and other animals were possessed by the tribals. This is an indication of shifting from the "food gatherers" state to "settled farming" stage.

### **LAND HOLDING PARTICULARS:**

Within the sample studied, it was observed that the population of 23 villages held 1200 acres of dry land, 750 acres of podu cultivated land and 217 acres of wet cultivated land. The average land holding was 1.92, 1.20 and 0.35 acres of dry, podu and wet land respectively per family.

### **CROPPING PATTERN:**

A variety of crops were grown by tribals including paddy, jowar, ragi, nuts and seeds and a variety of minor millets, pulses, turmeric, ginger, pippal (piper species), chillias, vegetables and tobacco. Thus the tribals have now the access to the knowhow of modern agricultural practices including use of stored water for agricultural and pesticide usage. These details are extensively presented in tables enclosed with the text. Basically, the disparity in relation to paddy cultivation between tribes like Bagatha and Gadaba seems, to be in the availability of water sources for paddy cultivation rather than any specific attribute of the tribe. It was observed that more than 400 acres of paddy, 165 acres of jowar, 271 acres of ragi and 135 acres of red gram was cultivated by the study subjects. This is a fairly high agricultural practice. In addition to staple crops, a variety of cash crops were grown including ginger, coffee, turmeric, pippal, tobacco and mirchi.

The study offered a possibility to understand the dietary intakes of each tribal group and also the agricultural practices and produces which each tribe has been able to achieve.

### **NUTRITIONAL DISORDERS IN TRIBALS:**

The common nutritional problems among the tribals studied were protein - calorie malnutrition, iron deficiency anaemia, Vit-A deficiency and goitre. Although frank cases of clinical kwashiorkar were not seen, malnutrition of varying grades were very common.

The nutritional assessment through anthropometric evaluation as discussed earlier in the report was corroborated with the percentage deficiency of energy intake among population in the 14 tribes. There was seasonal variation in the degree of energy inadequacy. In Bagathas for example, 30% of deficiency was observed in rainy season. In the same season, Gadabas had 40% deficiency, Jatapus had 34%, Kammaras 25%, Khonds 37%, Konda Doras 39%, Kotias 31%, Valmikis 36%, Savaras 36% and porjas 32%. The only communities who did not exhibit much energy deficiency were Mali, Mukha Dora and Konda Reddy. These differential responses for seasonal energy intakes need to be investigated.

Anaemia is a common problem in all age groups and the present study corroborated this observation. The intake of iron was always below the RDA and the observed dietary deficiency of iron nutrient varied among the different tribal groups and with the season. In rainy season, except konda reddy, all the tribal groups had iron nutritional deficiency which ranged from 58% in Valmiki of the RDA to 12% in Gadaba. The other groups also had 30 to 55% of deficiency in summer. Only a few tribes such as Koya, Konda Reddy, Khond and Kammara had varying degrees of deficiency while the other groups consumed more than RDA. In the winter season too, the intake was deficient except among Konda Dora. Interestingly, Konda dora had deficient intake in summer.

Vit-A deficiency is very common in tribal areas. The intakes were always below the RDA in rainy season in all the tribal groups except in Konda reddis. In winter, including Konda reddis all tribals had low intakes much below the RDA. In summer also except Kammara, all tribals had low Vit-A intake.

#### **HOUSEHOLD FOOD SECURITY:**

Food security can be defined as "Physical and economic access to food for all the people at all times". The household food security is mainly based on availability, accessibility and adaptability.

The team while conducting the survey looked into the kitchens of the tribal households and observed that most of them had no facilities for storage of food grains. Due to this, majority of them were selling away their agricultural produce immediately for lower prices. In times of scarcity, they were purchasing the same food items by paying higher prices. Even though the D.R. Depots are existing in the nook and corner of the tribal villages, the timings were not convenient to the tribals to purchase the food commodities as most of the tribals used to go to the fields for agricultural practices early in the morning and returned to the houses late in the evening. It was also commonly observed that there was a mis-match between the availability of the stocks in the D.R. Depots and the availability of money with the tribals.

The above information generated by the study indicates several inadequacies in the dietary and nutritional situation of the tribals studied. One of the main reasons for strong tendency for seasonal deficiency observed in the study is due to the fact that no food security exists among the tribals.



#### BACKGROUND

Andhra Pradesh is situated on the Eastern Coast of Indian Peninsula. It is bounded in the North by Maharashtra, Madhya Pradesh and Orissa, South by Tamilnadu, West by Karnataka and Maharashtra and East by Bay of Bengal. The total geographical area is 2,75,068 Sq. Kms and it covers 8.75% of the country's land with a population of over 64 millions.

Andhra Pradesh has relatively high concentration of tribal population i.e., 41.99 lakhs with about 33 scheduled Tribes. They constitute 6.31% to the total population of Andhra Pradesh which stands 7th position in India and First in Sourthern peninsula with regard to Scheduled Tribe population.

### STUDY AREA:

The area selected for the study is a part of APTDP area which is funded by IFAD, Rome. The study area spreads over 4 contiguous ITDAs with a high concentration of families engaged in podu cultivation viz., Seethampeta, (Srikakulam Dist.)\_ Parvathipuram (Vizianagaram Dist.), Paderu (Visakhapatnam Dist.), and Rampachodavaram (East Godavari District). The project would be implemented in 16 out of 32 watershed areas in the four ITDAs because the tribal families inhabiting the areas are paractising podu cultivation.

### TRIBAL COMMUNITIES:

The major tribal groups inhabiting the study area are 1) Primitive tribal groups and 2) Other tribal groups. The primitive tribal groups are Konda Savara, Gadaba, Khond, Porja and Konda Reddy. The other tribal groups inhabiting are Konda Dora, Bagatha, Valmiki, Jatapu, Mali, Konda Kammara, Mukha Dora, Kotia, Koya etc.,

Majority of tribal groups are habitating in the remote and mountainous areas. Most of the tribal villages have been inhabited by only one tribe and in multi-ethnic villages, various tribes live together but in separate areas in the same village. The clan system is common, but there is some social stratification within the communities. All the tribes in Andhra Pradesh are characterised by partrilineal descent, patrilocal residence and patriarchial authority. The village is the basic unit of social and political organisation. The status of women is generally higher than in non-tribal societies.

In general, nuclear family type is predominent and joint families are small in number. The house types vary from rectangular huts of the tribals living in Visakhapatnam district to the linear huts of the tribals of Srikakulam district. These huts are constructed with locally available timber and bamboo with wattle and mud plastered walls and thatched roofs of palm leaves and other wild grass. The houses are generally small in size with single or double room. Stress, hard working conditions environmental situations and

nutritional inadequacy lead to Vulnerability to infections and incidence of Malaria, T.B., gastroenteritis, Bronchitis, Meningitis, Fever and Scabies which have debilitating effect.

The food and dietary intakes are based on their social, religious and cultural customs. They would not consume the foods without performing the respective festivals. For example, observance of a festival called Korra Kotha Panduga, necessitates that they should not eat Korralu (Italian Millet) without offering to the God or Goddess. Like wise, they connot eat the mangoes even if they fall on the ground from the tree. There is a distinct connection between food consumption and rituals. Until and unless they perform ceremony (Pooja), they will not consume mango or even smaller millets. Due to this tradition, sometimes, they leave the fruits unconsumed before performing poojas and in this process, they are losing many valuable fruits and roots, perhaps leading to nutrient deficiency disorders. The main emphasis of this study was to assess the nutritional status and food security of the tribals living in the APTDP area, prior to the implementation of the IFAD Project. Reduction of malnourishment and provision of food security through sustainable agricultural practices is one of the three major mandates putforth by this project. A similar study taken up after completion of the project (1997-98) should give a clear picture as to how far this project had benefitted these tribals, particularly with regard to nutritional status and food security.

Keeping all these socio-cultural and economic implications in mind, a baseline survey was conducted with a view to follow the effects of IFAD project perhaps after 10 years ie., atleast 3 years after completion of the project. It is also likely that mid-term evaluation review would be done. Therefore, the present study will be used for both the purpose.

The tribals observe certain foods as taboo. During pregnancy and lactating periods, certain foods are avoided by them.

### **FOOD TABOOS**

The women among the tribal communities in the study area avoid eating of certain foods, especially during pregnancy and lactation as well as before introduction of supplementary foods in the first year (Wearing) of childs life. The avoidance of certain foods is related to certain assumptions on diseases and their causation as well as fear that the consumption of such foods may invite the wrath of evil spirits on the women as well as on the new born children. The tribal communities provided a list of such foods, consumption of which is thought to be harmful in different physiological conditions such as pregnancy, lactation etc. The messages in the said list are traditionally passed on from one generation to another orally as nutrition education. The avoidance of foods and the ideas associated with such avoidance among tribals in the study area varied from one village to another village. The avoided or omitted foods from their diet in the study area can be grouped as:

1) Foods thought to be unsuitable for pregnant women and

2) Foods thought to be unsuitable for lactating mothers.

The lists of foods as avoided by the pregnant women and lactating mothers among the tribal communities and the reasons for their avoidance as perceived by them, although not exhaustive are presented in the Annexure-I & II. Although certain foods were avoided, the reasons for not consuming such foods could not be explained by the tribal communities.

### INTRODUCTION

Field based survey among the tribal population of four districts namely Srikakulam, Vizianagaram, Visakhapatnam and East Godavari was conducted during 1993. The study was conducted in 23 villages of 16 mandals.

The study was aimed at obtaining family level information of the dietary consumption patterns of 2994 people belonging to 14 different tribes. For dietary survey purposes, "24 hour recall method" was used with the help of diet kits standardised by National Institute of Nutrition, Hyderabad. Age of the children upto 5 years could be obtained accurately to the extent of  $\pm$  3 months. In the case of adults, age could be assesseed to the extent of ± 5 years. The data obtained was analysed in terms of quantity of the cooked material converted into raw form from which the actual nutrient consumption was assessed by using ICMR book "Nutritive value of Indian Foods (1993)".

In addition to the dietary survey, demographic information was obtained and also information on cattle wealth, primary occupation of the family members and secondary occupation of the family members also obtained.

Height was measured with Anthropometric rod and weight was taken using the weighing scale (Bath Room Balance). Length was measured using Infantometer.

The nutrient intake in the 3 seasons ie., rainy, winter and summer per Consumption Unit was calculated and presented in the report. Data is presented in the following formats

- Food consumption in relation to family and per CU in each tribal community. 1)
- Nutrient intake in relation to the districts irrespective of the tribes, and 2)
- Nutrient intakes in relation to different families, different seasons and different 3) tribes.

The distribution of children into varying grades of malnutrition was based on weight for age expressed as percentage of standard (Harvard Classification). Accordingly, children who figured in more than 80% category were considered as normal; 71-80% as moderately malnourished (Grade-I); 61-70% as Grade-II malnourished; 51-60% as Grade-III malnourised, while less than 50% as Grade-IV malnourished.

## VILLAGE-WISE DISTRIBUTION OF AGE STRUCTURE IN RELATION TO DIFFERENT TRIBES IN 4 DISTRICTS:-

Information on age and Sex of all persons studied in 23 tribal villages was collected in 625 households through interview techniques in 4 ITDA districts. Demographic information on various tribes is lacking in the report which is possibly essential in view of its relation to tribal health. It was however possible to obtain age structure, type of family, marital status, physiological status of women, occupational particulars, educational status and live stock possession particulars. A brief information was also obtained regarding land holding and cropping patterns in a preliminary manner since information on this important variable is not fully available.

#### **OBJECTIVES OF THE STUDY**

The following are the objectives of the study:

- To assess Health and Nutritional awareness and status of tribals in the APTDP area and establish their determinants through anthropometric measurements and clinical examination.
- 2. To establish linkage between food production and nutrition.
- To study the food security situation viz., Food Produced, Food Purchased and Food Collected.
- 4. To identify the dietary habits and seasonal variation in diets especially phytogenic sources of food and to assess their nutritional values.
- To study social organisation of tribals and associated food taboos if any and cultural life such as ceremonies connected with food production and consumption.
- 6. Traditional foods and changes in dietary pattern in the dynamics of food systems.

#### SAMPLING DESIGN

In order to achieve the objectives of the study, it was decided to include 4 contiguous districts in the northern coastal area of Andhra Pradesh where the tribal population lives in considerable number. The 4 districts, that are participating in the IFAD (APTDP) are:

- i) Visakhapatnam district represented hilly and elevated tribal area with forest,
- ii) Vizianagaram district mainly represented the plain and non-hilly area, iii) East Godavari district represented relatively inaccessible and difficult terrain and iv) Srikakulam district represented remote and hilly area adjoining to the Koraput district of Orissa state.

Having decided on the districts, it was proposed to identify atleast one village per mandal on random basis in consultation with the concerned Project Officers of the ITDA at that time. Therefore, based on watershed area distribution (macro and Micro), 3 villages in Srikakulam, 4 villages in Vizianagaram, 13 villages in Visakhapatnam district and 3 villages in East Godavari district were selected. Having selected the village, the investigating team visited all the households. The residents of the households who were present at the time of the survey were included for interrogation and questionnaire administration. The head of the family was questioned for the occupation details while the female head of the household was interrogated for dietary survey purpose.

A pre-drawn household proforma (Schedules) for obtaining the following information was used :

- 1. Age and Sex of all the family members of the household,
- 2. Dietary intake proforma in standard format,
- 3. Anthropometric survey proforma in standard format,
- 4. Occupational details as per standard proforma,
- 5. Information on the land holding,
- 6. Information about the crops grown as per the area of cropping during the period of the study,
- 7. Information on the possession of live stock as per categories specified,
- 8. Information on various components of families annual income and annual expenditure,
- 9. Information about the foods avoided during pregnancy and lactation and the reasons thereof,

### METHODOLOGY

A survey was conducted on Nutritional status and food Security among tribals

- Administering and Canvassing of Household Schedules, 1.
- Weighment of food intake, 2.
- Anthropometric measurements. 3.

The study was conducted in 1993 & 1994 in the Andhra Pradesh Tribal Development Project (APTDP) area assisted by International Fund for Agriculture

The diet and dietary habits of tribals is likely to be liable for seasonal variations. The diet and dietary mapites of statements of the survey was conducted in 3 seasons Viz., Rainy, Winter and Summer.

- Time of Study: The study was conducted in rainy and Winter seasons of 1993 1.
- Duration of the Study: One year and two months in three field visits. 2. 3.
- Selection of Villages: The study villages were selected out of the villages covered Selection of Villages: The study villages to solve the villages covered by APTDP by random sampling procedure in macro and micro watershed areas. 4.

### **OBSERVATIONS AND RESULTS**

The number of people covered tribe-wise, is presented in Table-1. The age structure in respect of the 14 tribes among the investigated population is presented in Fig-1.

It was observed that there was variation in the average family size among the tribes. The average family size in respect of each tribe is given in Tab-2. It is observed that the average family size ranged from 3.89 in Kammara to 6.10 in Khonds. The family size of Konda Reddis is 5.15.

### **FAMILY TYPES**

Out of 625 households studied in 4 districts, 542 were nuclear (86.72%) and the remaining 13.28% were joint families (Tab-3). In Visakhapatnam district, 85.81% were nuclear while others were joint families. In the districts of East Godavari, Vizianagaram and Srikakulam, respective figures for reuclear families were 96.42%, 80.92% and 89.02%. Thus, in contrast to the plains (non-tribal population), "Nuclear families" is the type of family followed among the tribes which has greater relevance to their cultural and traditional practices. However, joint family system was more in vogue among Gadaba, valmiki, Jatapu, Savara and Porja.

### PHYSIOLOGICAL STATUS OF WOMEN STUDIED:

Out of 1484 women studied, 22 were pregnant and 242 were lactating mothers. Thus at the time of interrogation, only 1.49% were obviously pregnant (Tab-4). It is however, accepted that early stages of pregnancy might have been missed in the survey since efforts could not be made to assess the early pregnancy status. The high proportion of lactating mothers compared to pregnant women clearly indicates that the period of breast feeding is very much prolonged in tribal areas. Observations made by the team on other occasions also indicated that in tribal areas lactation can extend into the 3rd year of life of the child. This is a good practice and is likely to contribute towards natural birth control. Scientifically, it has been confirmed that lactational amenorrhoea is a protective factor against conception. Thus prolonged breast feeding is beneficial both for the mother and the breast-fed child and would result in natural birth spacing.

### **MARITAL STATUS**

Of the total population, 1510 were males and 1484 were females. Among males, 46.89% were married, while 53.11% were unmarried. Among 1484 females, 54.65% were married, 45.35% were unmarried. In most of the tribes, widows are permitted to remarry. Polygamy is also permitted (Tab - 5).

## OCCUPATION PARTICULARS

Out of 1651 individuals (work force) interrogated, 1436 (86.98%) reported agriculture as their main occupation, 11.93% were agriculture labourers. This high agricultural occupation in the sample is due to the fact that sample population of 4 districts was studied in the watershed areas of IFAD (International Fund for Agriculture Development) which is an agriculture land based programme (Tab-6).

## SUBSIDIARY OCCUPATION

Out of 1466 individuals, as high as 43.32% has reported collection of MFP (Minor Forest Produce) as the secondary occupation. Among Gadabas, 36.37% were agricultural labourers in contrast to most of Savaras, Jatapus, Konda Doras and Bagathas who were owning agriculture lands. Among Khonds 27.34% were agricultural labourers. Similarly in Valmikis, 22.13% were agricultural labourers.

## EDUCATIONAL PARTICULARS

Information on educational particulars was obtained on 2480 individuals belonging to 23 villages from 4 districts, out of whom 2001 were illiterates amounting to 80.68%. to 23 villages from a disconsistency of the second of the Only 11 (0.44%) persons many education and 358 (14.43%) had primary level education 58(2.33%) had upper primary schools. 3 upper primary schools 3. 58(2.33%) nad upper primary schools, 3 upper primary schools, 3 single teacher schools in 23 villages studied, 9 primary schools, 3 upper primary schools, 3 single teacher schools In 23 villages studied, 5 printing of the type of tribe. the tribals is irrespective of the type of tribe.

## GENERAL ECONOMIC STATUS

Tribal population tend a variety of animals mostly for agriculture purpose. In som Tribal population terms at the purpose of religious tribes, smaller animals are reared for providing food and also for the purpose of religious tribes, smaller animals are reared for providing food and also for the purpose of religious tribes, smaller animals are reared for providing food and also for the purpose of religious tribes, smaller animals are reared for providing food and also for the purpose of religious tribes, smaller animals are reared for providing food and also for the purpose of religious tribes. offering. On interrogation of the head of the household in 625 households the following offering. On interrogation of the following of the following on live stock particulars was obtained which is summarised in Tab - 7.

## LAND HOLDING PARTICULARS

The land holding particulars in relation to various agricultural crops grown villages is presented in Tab.-8. A total of 217 (10.01%) acres was The land holding particulars.

The land holding particulars. wise for 23 villages is presented in villages was under was under was cultivation out of 2167 acres. Podu cultivation accounted for 34.61% of total land. The force was dry which accounted burning the force was under the force was dry which accounted burning the force was under th cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres. Four values of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of total land. The cultivation out of 2167 acres of 2167 remaining land was dry which accounts and burning the forest trees and the tribal are podu cultivation is practised after cutting and burning the forest trees and the tribal are podu cultivation is practised after cutting and burning the forest trees and the tribal are podu cultivation is practised affer cutting podu cultivation is practised affer cutting podu cultivation is practised affer cutting podu cultivation is practised affer and Joseph Gram and Korra etc.. The dry cultivation is practive preferable for Paddy, Sama and Korra etc.. The dry cultivation is practive preferable for Paddy, Sama and Korra etc.. The dry cultivation is practised affer achieve podu cultivation is practised affer and are podu cultivation is practised affer achieve podu cultivation is practised affer cutting and are podu cultivation is practised affer achieve podu cultivation is practically preferable for Paddy, Sama and Korra etc.. The dry cultivation is practised affer achieve podu cultivation is practised ach land is used to grow crops such as Jovan, Sama and Korra etc.. The dry cultivation etc.. V cultivation is mostly preferable for Paddy, Sama and Korra etc.. The dry cultivation included the crops such as Coffe for 23 with the contract of the crops such as Coffe for 23 with the crops cultivation is mostly preferable for Paddy, Sand use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop for 23 village, Jowar, Maize, Vudhalu etc.. The average land use under each crop etc.. The average aize, Vudhalu etc.. The average cash crops such as Coffee, Tobacco

Turmeric etc., were grown.

Out of the total land of 2168 acres owned by the 14 tribal groups in the study area, only 1625 acres of land was under cultivation constituting 74.95% of the total land existing. In all the 23 villages together 1625 acres were being cultivated. Of these, rice (paddy) was grown in larger proportion of the total land available for agriculture. 428 acres were utilised for paddy cultivation. By and large rice constituted the main staple. Jowar was cultivated in 165 acres and paddy in 271 acres. Sama was grown in 215 acres. Bajra was raised in 60 acres. Cash crops were grown in 175 acres which amounts to more than 10% of the total average. Oil seeds were grown in 5.4% of land cultivated. (Tab.-9).

The tribe-wise analysis of crop pattern is presented in Tab.-10. Malis generally grow vegetables; Porjas usually stay on hill tops while Kotias are numerically small population. This may explain why the wet cultivation is not being practised by them in the sample studied.

### **HEALTH AND NUTRITION STATUS**

Focus groups dicussions were held with a view to assess the reasons for deaths which occurred during the previous year in 23 villages :

In each focus group, 5 to 15 members, both male and female joined the discussion. The following information emerged.

They were not able to recollect the details regarding deaths, which occurred among infants and small children. Even among deaths which occurred in the adults, the cause of the deaths was known only to very few people. In 23 villages studied, a total of 46 deaths were reported. Out of them, in 13 cases "Cause was not known" while in the remaining, the cause of death was due to Fever (6), Diarrhoea (6), Tuberculosis (5) and others (16).

This small interrogative study gave the following impressions:

- 1. No proper mortality information was forthcoming,
- 2. There was no system in the health care delivery which would help to get information on mortality and morbidity,
- 3. Diarrhoea was a common cause of death, while T.B. was also a mojor cause of death in adults.
- 4. Malnutrition contributed to some adult deaths,
- 5. The survey did not include clinical examination and hence the morbidity details

were not included in the report. This part of the study focusses attention on the need to carry out systematic morbidity surveys on sample population selected statistically.

#### **ANTHROPOMETRIC STUDIES:**

Anthropometric studies were undertaken in 366 children under the age of (6) years. Table below shows the number of children and adults examined.

SI.No.	Age Group	Males	Females	Total
1.	< 1 year	32	35	67
2.	1-3 years	47	44	91
3.	3-6 years	105	103	208
4.	6-14 years	71	88	159
5.	14-18 years	4	9	13
6.	> 18 years	24	225	249
	Total	283	504	787
			- MIT	

A total of 787 individuals belonging to 23 villages (13 villages from Visakhaptanam, 4 from Vizianagaram, 3 from East Godavari and 3 from Srikakulam) were examined for height and weight. Percentage of malnutrition in relation to age groups is presented in Tab.-11.

A total of 67 infants were included in the study. Among the male infants 40.62% had more than 80% of weight for age compared to standard population and were therefore regarded as normal. Grade I malnutrition was observed in 15.62%, Grade II malnutrition in 2.5%. Grade III malnutrition in 9.37% and severe malnutrition in 9.37%.

In contrast, among the female infants, 48.57% were normal, 14.28% had Grade | In contrast, among the remain maintenance, malnutrition, 22.86% has Grade II malnutrition and 14.28% had Grade-IV malnutrition. This small study tells us that Grade III malnutrition. There was nobody in Grade III malnutrition. This small study tells us that Grade IV There was nobody in Grade III manually... malnutrition was more in females than males, reasons for this needs to be ascertained.

In the age group 1-3 years, 34% of boys were normal, Grade I malnutrition was In the age group 1-3 years, 34% or boys were seen in 23.4%, Grade II in 17.02% Grade III in 21.28% and Grade IV in 4.25%. In girls seen in 23.4%, Grade II in 17.02% Grade III III 21.40% and Grade II mainutrition, 15.9% had Grade II mainutrition, 15.9% had Grade IV malnutrition. Thus, in this age group I and 4.5% had Grade IV malnutrition. 40.9% were normal, 25% had Grade I mainumon, 10.0.1

13.6% had Grade III and 4.5% had Grade IV malnutrition. Thus, in this age group, both

boys and girls were equally suffering from Grade-IV malnutrition.

In 3-6 years age group, 48.6% were normal, 25.7% had Grade I, 20.9% had Grade II, while Grade III and Grade IV malnutrition were less being 3.8% and 1.0% respectively. In the same age group, 38.0% of girls were normal, 37% in Grade I malnutrition, 15.5% had Grade II malnutrition, while 7.8% and 1.9% had Grade III and Grade IV malnutrition respectively. Thus in this age group, females had almost 10% of severe malnutrition while the boys had only 4.7% severe malnutrition.

In the age group of 6-14 year (school age group), out of 71 boys, 35% has normal nutrition and nobody had Grade IV malnutrition. Grade I, II and III malnutrition were present in 35%, 18.3% and 11% respectively. In 159 girls examined, 47.7% were normal while 6.8% had Grade-IV malnutrition; 20.4%, 14.7% and 10.2% had Grade I, II and III malnutrition respectively.

For all age groups combined, severe malnutrition of Grade III & IV was present in 11.3% of males and 8.1% of females respectively.

Table - 12 shows nutritional status of all age groups from all the districts pooled but tribe-wise.

It was observed that by anthropometric criteria percentage of males nutritionally normal, were 43, 33, 20, 50, 31, 42, 75, 50, 80, 71, 53, 43 and 33 among Bagatha, Gadaba, Jatapu, Kammara, Khond, Konda Dora, Konda Reddy, Kotia, Koya, Mali, Mukha Dora, Porja, Savara and Valmiki respectively. The corresponding percentage figures for females who were nutritionally normal in the above tribal categories were 55, 54, 42, 10, 68, 52, 56, 75, 49, 82, 53, 65, 42 and 62 respectively.

When the percentage normalcy was arranged in descending order, males in the mali tribes had highest nutritional normal population, while Jatapu males had lowest figures for nutritional normalcy. When females were taken into consideration too, Mali tribes had highest percentage of normalcy while Kammara had lowest percentage of normalcy.

Highest Grade IV malnutrition was seen in Gadaba males followed by Bagatha, Jatapu and Valmiki. Among females, highest Grade IV malnutrition was seen among Gadaba and Mali followed by Mukhadora, Valmiki and others.

### **DIET SURVEY RESULTS**

The survey was conducted by the same team during 3 seasons i.e., winter (Dec-Jan), Summer (April-May) and Rainy season (Aug-Sept). A total of 625 households were surveyed in 23 villages, thereby covering 14 tribes. More than one tribe lived in some of the villages. Diet survey was conducted early in the day (7-9 AM) using 24 hours recall method. The staple diet varied from season to season. "Cereals" included Rice, Ragi, Maize and Jowar

etc., A detailed information on the cereal intake was obtained from the adult women of the household. When more than one cereal was consumed on a day, the total raw quantity derived by calculation of all the cereals consumed by the family was recorded. CU was calculated per each household by standard connotation. The total quantity consumed by the family when divided by the total CU for the household gave the raw quantity (gms)

In a similar manner, intake of pulses (Red gram, Green gram etc) was calculated per CU. The food items included in the study in addition to cereals are pulses, milk & meat products, oils & fats, Vegetables & fruits, roots & tubers, sugar & jaggery, leafy

Using the original household data, information on consumption of various dietary items per each CU was generated for each household for 23 villages studied. From this information, it was possible to generate the following detailed analysis i.e,.

- Intake of various dietary items per CU in each of the four districts, irrespective of 2.
- Intake of various dietary items per CU in respect of each tribal group from all 23

The details of average consumption of 9 broad food items by 14 tribal groups in winter, summer and rainy seasons are presented in tables 13, 14 & 15. The data is presented per CU per day for each item. It was observed that the consumption of cereals was highest in winter season for all tribal groups. The minimum consumption of cerears season. The difference between the minimum and maximum consumption was in rainy

As an example, the pattern of intake per cereals. given in the text. As an example, the pattern of intake per cereals by each tribe is depicted below. For other items, information is given in the running text.

This seasonal variations was observed to a lesser extent in case of pulses and This seasonal variations was roots and tubers. With regard to vegetables and fruits, the highest intake of pulses and followed by winter and very low intake in rainy season. In the in summer followed by winter and very low intake in rainy season. In the was observed essentially there was no seasonal variation. As a rule, oils meat products essentially there was no seasonal variation. As a rule, oils and fats were meat products essentially triefe was ...

consumed very less not more than 25 gms per CU per day in any season by any tribe. The least consumption was in rainy season, sugar and jaggery was consumed more or in summer and winter season compared to rainy season in the more or The least consumption was in rainy season compared to rainy season in which it was less equally in summer and winter season in which it was lesser extent in summer and winter. Thus the calorie intake lower. Leafy vegetables in contrast to the season and to a lesser extent in summer and winter. Thus the calorie intake which is season and to a lesser extent in summer and mostly derived from cereals was obviously subjected to great seasonal variation. Tables The dietary intake pattern in 3 seasons in relation to RDA for each tribe is presented in

Tables 20 to 30.

Table 34 presents the summary of per CU per day intake of 8 food items and the condiments for 3 seasons by all tribes combined for 4 dirstricts. This presents in a nutshell the dietary situation of the tribals studied. The mean cereal consumption was far below the RDA among the tribals. A similar statement can be made for pulses. Fortunetely, the tribal environment still have lots of fruit bearing trees in nature and the tribals are able to grow vegetables. Because of these two reasons except in rainy season, the intake of fruits and vegetables is quite adequate. Obviously this would help adequate intake of Vit.-B complex group. Clinical nutritional survey perhaps will throw more light on this issue. Traditionally, and food items. Even roots and tubers are consumed less in rainy season.

Traditionally, tribal people do not milch cows and their milk intake is expected to be low. Although they are meat eaters, the rapid deforestation has made the availability of amall game meat less. This explains the observed very low intake of meat products compared to crossing the RDA. In all the districts combined, leafy vegetable consumption was better in rainy season present a ciritical comparative data on intakes among the tribals living in the 4 districts. It district, while Srikakulam district had highest intake of all food items are least in Vizianagaram selected in Srikakulam district were all located on hill tops in natural environment and they of the hills to reach the population studied.

In winter, Srikakulam has the highest intake of cereals, vegetables & fruits and leafy vegetables and least consumption of pulses, roots & tubers and milk and meat products. Since they stay on the hill tops, the milch cattle cannot be taken up the hills and this explains the low intake of milk products by the tribals of this district. Vizianagarm district tribal people had better intake in winter than in the rainy season.

In summer season again Srikakulam district had highest intake of cereals and vegetables and fruits. In contrast for other items, Srikakulam has least intakes. A very interesting observation was made that in all seasons, roots and tubers were maximally consumed by the tribals of East Godavari district. Milk and meat products in all the seasons were maximed by consumed by the tribals of Visakhapatnam district, while cereals and vegetables and fruits were maximally consumed in all the seasons by the tribals of Srikakulam district. It was observed that tribals of Vizianagaram district ranked last in intakes of a majority of items all seasons. The Vizianagarm district tribals surveyed did not have access to natural forest wealth and water resources. Like the plains people, the tribals of this district have to buy and need further confirmatory studies (Special Table - 1).

SPECIAL TABLE: 1

# RANKING OF DISTRICTS ACCORDING TO INTAKE OF VARIOUS FOOD ITEMS (GMS) IN THREE SEASONS, RANK ON BEING HIGHEST AND SO ON

SI. No	. Food I	tem Srika	ıkulam	Vizianagaram	Visakhapatnam	East Godavar
1.	Cereals					
		Rainy	1	3	2	4
		Winter	1	4	3	2
		Summer	1	4	2	3
2.	Pulses					
		Rainy	1	4	2	3
. 6		Winter	4	3	2	1
		Summer	3	4	1	2
3.	Vegeta	bles & Fruits	3			
		Rainy	1	4	2	3
		Winter	1	3	2	4
		Summer	1	3	2	4
4.	Roots	and Tubes				
		Rainy	2	4	3	1
		Winter	4	2	3	1
		Summer	4	2	3	1
5.	Milk a	nd Meat				*
	*	Rainy	2	4	1	3
		Winter	4	2	1	3
		Summer	4	3	1	2
6.	Leafy	Vegetables				
		Rainy	1	4	2	3
		Winter	1	4	2	3
		Summer	4	3	1	2

### **NUTRIENT INTAKE:**

The purpose of studying the dietary intakes by a planned house to house recall method was to compute the intake of various nutrients out of the foods consumed. The computed intakes of the various tribes consisted of Calorie intake (Energy), Protein, Calcium, Iron, Vitamin-A, Thiamine, Riboflavin and Vitamin-C. The energy intakes were mostly coming from the cereals since the fat consumption was very low. Tables 39-41 depict the aforesaid nutrients intake tribe-wise for winter, summer and rainy seasons respectively. Obviously, for the reasons explained earlier, energy intake was highest for all the tribals in winter season and lowest in rainy season. Interestingly, none of the groups ever met the RDA in any season, which is an indication for the need to increase the quantity of food intake of the tribals. The calorie gap observed in diet survey was also reflected in the anthropometric survey as mentioned earlier.

In constrast, RDA for protein was met by 11 out of 14 tribes in winter, 9 out of them in summer and only 5 in rainy season. This once again emphasises that in rainy season there is protein and calorie inadequacy.

Calcium is required for bone growth. The dietary calcium was very high in all the 3 seasons and was found to be higher than the RDA for all the groups except in one instant (one tribe) in summer season. It is a practical observation that the tribals have firm bones which offers strength to the body for tasks like climbing the hills. The observation corroborates the general knowledge on their bone growth.

In spite of good calcium intake, the intake of Iron is relatively poor particularly during the rainy and winter seasons. The higher intakes of Iron in summer which is uniformly observed for all the tribes in all the districts, is an important finding since it has physiological relevance. This high intake in summer months may be related to the consumption of certain fruit species rich in iron such as jack fruit (Artocarpus heterophyllus) and to the consumption of local brew to which jaggery rich in iron is added. This preliminary study also indicates inadequacy of Vit.-A intake in all seasons by all the tribes except Konda Reddis in rainy season and Kammaras in summer seasons. The explanation for this is not seasons. Interestingly, Vit.-C intake was more than RDA except Porjas in rainy and winter seasons.

In view of the inadequacies observed in various tribal groups in comparison with RDA in respect of nutrients such as calories (energy), Vit.-A and iron, a detailed analysis of the tribe-wise percentage deficiency in 3 seasons have been worked out and results are presented in Tables 42 to 44, which are self explanatory. Study of this nature will help in planning in identifying the high risk tribal groups in respective places which will be help in in introducing specific action programmes where necessary. The inadequacy of vit.-A intake compared to the RDA indicates that as a whole the tribal population are not vit.-A to meet the dietary requirements of Vit.-A. The study however, has not focussed on able specific percent deficiencies of Vit.-A intakes (Taking age specific RDA into consideration) which would be more precise. On the other hand, the strength of the observations made.

is that the problems of Vit.-A deficiency does exist in tribal areas studied which requires further attention.

For ready reference, nutrient intakes of each of the 14 tribes separately for 3 seasons are presented in Tables 45 to 58. These tables critically focus on the deficiencies for each tribal group.

In order to identify the distinct characters which may have influence on the nutrient intakes irrespective of the tribes, a separate analysis was conducted.

### **DISTRICT-WISE INFORMATION ON NUTRIENT INTAKES:**

Table 59 represents the summary of nutrient intakes for all tribes for 4 districts for 3 seasons. If the information presented here is to be interpreted, by and large, there is no protein deficiency in tribal populations studied. There is gross calorie inadequacy to the magnitude of 33.33% in rainy season for all the tribes put together. The energy inadequacy for winter and summer months is 16.54% and 17.77% respectively. Calcium intake is more than adequate. Iron deficiency is predominent. Vit.-A intakes are grossly inadequate with percentage deficiency of 37.50, 67.03 and 36.60 for rainy, winter and summer months respectively. Thiamine intakes are adequate. Riboflavin deficiency does exist and Vit.-C intakes are generally more than adequate.

An attempt was made to rank the 4 districts irrespective of the tribal groups regarding the intakes of various nutrients based on the Tables 60-63. This qualitative classification indicates that the tribals of Srikakulam district has the highest consumption of protein, thiamine and riboflavin for all the 3 seasons among the 4 districts. vit.-A intake was highest in East Godavari in all the seasons, Tribals of Vizianagaram district were having the least intakes of nutrients mostly in all seasons. Visakhapatnam district tribals had lowest intake of iron in all the seasons. As far as energy intakes are concerned, Srikakulam district had highest values for 2 seasons i.e., winter and summer while Visakhapatnam district was second in ranking for all the 3 seasons (Special Table 2).

SPECIAL TABLE - 2

RANKING OF DISTRICTS ACCORDING TO INTAKE OF VARIOUS NUTRIENTS

IN THREE SEASONS, RANK ONE BEING HIGHEST AND SO ON SI. No. Food Item Srikakulam East Godavari Vizianagaram Visakhapatnam 1. Energy (K. Cals) Rainy 3 2 1 Winter 2 Summer 1 2 3 2. Protein (Gms) Rainy 1 3 2 Winter 1 2 4 Summer 1 2 3 3. Calcium (mg) Rainy 4 3 1 2 Winter 4 2 1 Summer 3 3 2 4. Iron (mg) 1 Rainy 2 3 Winter 2 3 1 Summer 3 1 1 5. Vitamin-A (ug) 2 Rainy 2 3 Winter 2 4 1 Summer 4 3 1 6. Thiamine (mg) 1 Rainy 1 4 3 Winter 1 3 2 2 Summer 1 2 4 7. Riboflavin (mg) 3 Rainy 1 2 Winter 2 2 Summer 1 4 3 8. Vitamin-C (mg) 2. Rainy 1 2 Winter 1 3 3

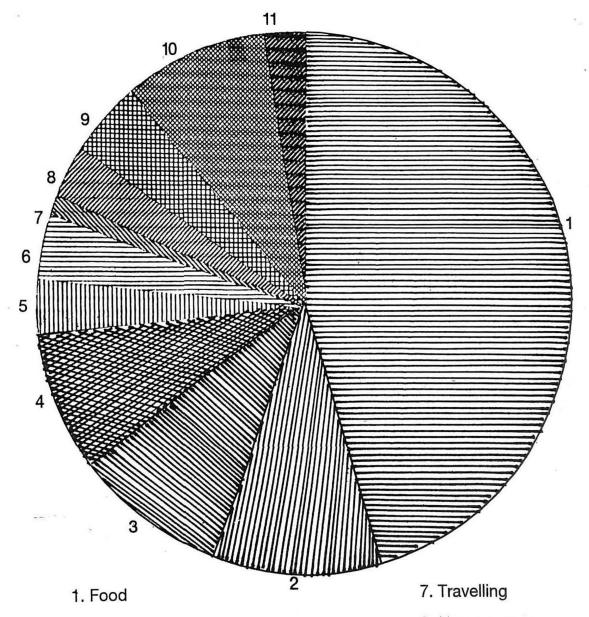
Summer

2

3

# ITEM-WISE PERCENTAGE OF AVERAGE ANNUAL **EXPENDITURE PATTERN PER FAMILY**

(ALL TRIBES POOLED)

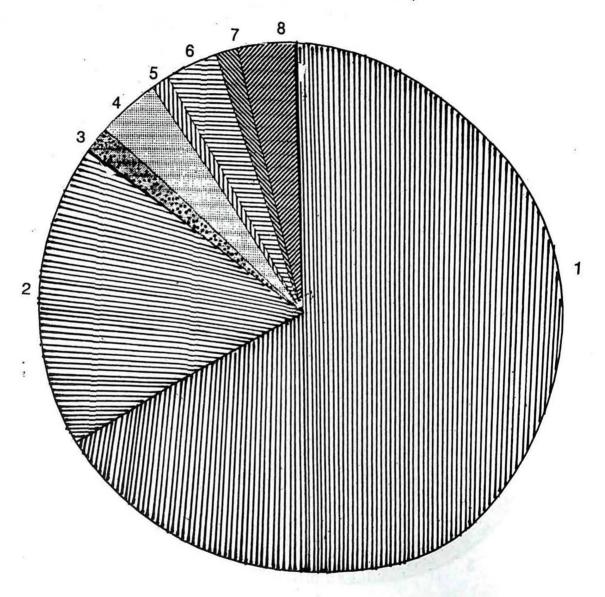


- 2. Clothes
- 3. Cosmetics
- 4. Festivals & Rituals
- 5. Household Utensils & Usables
- 6. Fuel & Lighting.

- 8. House repairs
- 9. Country Liquor
- 10. Agricultural Inputs
- 11. Others

# ITEM-WISE PERCENTAGE OF AVERAGE ANNUAL

INCOME PATTERN PER FAMILY
(ALL TRIBES POOLED)



- 1. Agriculture Produce
- 2. Agriculture Labour
- 3. Household Industries
- 4. M.F.P. sale

- 5. Forest Labour
- 6. Live Stock
- 7. Employment
- 8. Others.

#### **EXPENDITURE AND INCOME PATTERNS**

#### **EXPENDITURE PATTERN:**

This brief evaluation of expenditure pattern obtained through interrogation of 625 household gives the following base line information. The details are given in Table - 64.

- 1. The rough estimates of perceived average annual income per family was around Rs. 4500/- (The average family size was 4.79).
- 2. The present study indicates that 45.0% of expenditure was attributable to food & food related expenses of the family. In a recently published information by National Institute of Nutrition, Hyderabad (1993), it was mentioned that in urban families 64.0% of the annual expenditure was attributed to food & food items. Similarly, according to the same report, 57.0% of the family expenditure in rural families was for food & food items.
- 3. It may be pertinent to state that due to various Governmental programmes, primary and secondary education is offered at free of cost in tribal areas which explains low expenditure on educational purposes.
- 4. In tribal areas, locally made liquor was common and consumed regularly. The local country liquor consumption practised by both men and women contributes to 5.0% of the expenditure.
- 5. The cooking is solely done with local fuel partly obtained from the market and partly gathered from the forests. Cooking gas did not enter the tribal areas.
- 6. It was observed that 10.0% of the family income was spent on cosmetics which is a reflection of social interaction between the tribal population and external communities.

#### **INCOME PATTERN:**

It was obtained from the tribal groups of study area. The details of income pattern is given in Table - 65.

- 1. At the time of the survey, tribal communities studied had become agriculture based which is the reason why 85.0% of the income was obtained through agriculture and related activities,
- 2. Industrial income was negligible,
- 3. Soft loans are provided by Government, in particular, the Girijan Co-operative Corporation (G.C.C) and Banks which contribute to about 3.0% of the annual income.

## REFLECTIONS OF THE STUDY FINDINGS IN RELATION TO OBJECTIVES:

SEASTRAIL DECOME OF

- 1. As contemplated, the nutritional status of tribal population was evaluated using anthropometric measurements. Since, nutritional inadequacies constitute major health problems of chronic nature, focus was on nutrition and health. The study produced data on the magnitude of prevalence of varying degrees of malnutrition status.
- 2. Regarding food security, since the tribals produced and consumed various agricultural products season-wise, information on season-wise availability of various food items was obtained (Annexure-V).
- 3. Although household level information on linkage between food consumption and nutritional status could not be collected, information has been gathered on overall expenditure pattern for various household items in 625 households which indicated that only 45.0% of the average family income was spent on food which explains why the malnutrition is widely prevalent to a greater extent than in urban and rural areas. The study shows low food items expenditure and high childhood malnourishment. Also, the study focussed attention on the food prohibitions (taboos) during the important physiological status of pregnancy and lactation which has direct relevance to maternal malnourishment, which is known to adversely affect nutrition of the new born.
- 4. The nutritional contents of the diets during 3 seasons namely rainy, winter and summer, were obtained and also a comparison was made between the values for consumption units (CU) in a given family in comparison with RDA for that food item. Thus nutritional value of the foods in 3 seasons was presented in the report.
- 5. At the time of baseline survey, the populations studied were no longer huntergatherers and had already established themselves as agriculure producing populations, cultivating traditional foods like ragi, rice, jowar, red gram etc. However, since there was no invasion of external cultural influences of serious magnitude, the family members still practised traditional methods of cooking and food culture. The only change in the food dynamic comparative to early 1970's was that fair price shops (D.R. depots) were introduced in the tribal areas and this offered the opportunity and necessity to buy food from the market either to augment the agriculture produce or to replace the latter. The full impact of this dynamics of food systems was not evident on the dietary patterns.

#### RECOMMENDATIONS

- 1. Multiple strategies must be developed (through IFAD support or otherwise), to create situattion which will help to augment the calorie intake of tribal population and provide household food security,
- 2. Intensification of health education of the tribals through appropriate I.E.C. material focussing attention on Vit.-A deficiency, Iron deficiency and advocate the usage of vegetables like Pumpkin and Papaya and other sources of Vit.-A.
- 3. Since free education is being offered to the tribal children through ashram and residential schools, nutrition and health topics must be incorporated into the curriculam,
- 4. Identification of at risk tribal groups in terms of health and nutrition and introduce high risk approach for their improvement,
- 5. Educate tribal population on the importance of MFP and improve efforts to restore MFP.
- 6. Identify the areas where convergence of services rendered is achievable,
- 7. Encourage good food habits and health education against wrong notions.

# NONE OF THE TRIBAL GROUPS STUDIED EVER MET THE CALORIE REQUIREMENTS IN ANY OF THE THREE SEASONS STUDIED IN ANY OF THE FOUR DISTRICTS. THE SITUTATION IS WORST IN RAINY SEASON

Remarks: TRIBAL POPULATION NEED MORE FOOD (ENERGY) AND HOUSE HOLD FOOD SECURITY

Measures: Increase their agricultural production and purchasing power

#### INTAKE OF VIT-A IS INADEQUATE IN ALL SEASONS IN ALL TRIBALS STUDIED

Remedy: Tribal Population need more Vit-A intake

Measures: Horticultural inputs and Health Education

SRIKAKULAM DISTRICT TRIBALS HAD LEAST INTAKE OF SEVERAL DIETARY
ITEMS

TRIBALS OF EAST GODAVARI DISTRICT CONSUMED MAXIMUM QUANTITY OF ROOTS AND TUBERS

SEASONAL VARIATION OF FOOD INTAKE WAS OBVIOUS IN ALL TRIBAL GROUPS

LOWEST INTAKE OF CALORIES WAS SEEN IN GADABA IN WHOM GRADE IV
MALNUTRITION WAS MAXIMUM WHILE HIGHEST INTAKE WAS OBSERVED
AMONG MALIS IN WHOM MAXIMUM NORMAL NUTRITIONAL STATUS WAS SEEN

NUCLEAR FAMILY PATTERN IS IN VOGUE. AVERAGE FAMILY SIZE VARIED FROM 3.89% TO 6.10% IN 14 TRIBES STUDIED

PROLONGED BREAST FEEDING IS PRACTICED BY ALL TRIBAL WOMEN.

THIS MUST BE ENCOURAGED

MARRIAGE AS A SOCIAL CUSTOM IS IN VOGUE WHICH IS STRONG BINDING FORCE

PADDY IS THE MAIN CROP GROWN

RECOMMENDATION TO DEVELOP STRATEGY FOR IMPROVING OIL SEEDS CULTIVATION

CONSUMPTION OF TRADITIONAL FOODS LIKE MEAT AND MEAT PRODUCTS,
ROOTS AND TUBERS ARE DECREASING DUE TO RAPID DWINDLING OF
FORESTS.

### **ADDENDUM**

Subsequent to the preparation of the report, expert comments of the Scientists of the National Institute of Nutrition, Hyderabad were invited. The comments and the responses are given in detail in the tabular form below:

#### **RESPONSE TO EXPERTS COMMENTS**

Response of Authors to the comments made by National Institute of Nutrition - Poin-by-Point

SI.No	o. NIN Comment	Response
1.	Sample not uniform with regard to districts	Sample was drawn from IFAD area and not district.
2.	Sample not uniform with regard to tribes	The sampling was not aimed to give tribal smapling, but to give IFAD area sampling. The tribes in IFAD area naturally varied from district to district.
3.	Inter-district comparison	The comparison was made not between district and district but between IFAD area of one district and IFAD area of other districts. Accordingly we will give a note to this effect.
4.	Sample covered is unequal in male & female and age groups	This is not correct. The Table No. 1 clearly shows that in each age group male & female are more or less euqally covered. Overall male: female = 1510: 1486
	Distribution of 800 Children into different groups. Sample size not adequate	The data presented in a table on page: 21 (Running text) show that each sub group has a minimum of 25 Nos. Persons above 18 years were not discussed. The reason

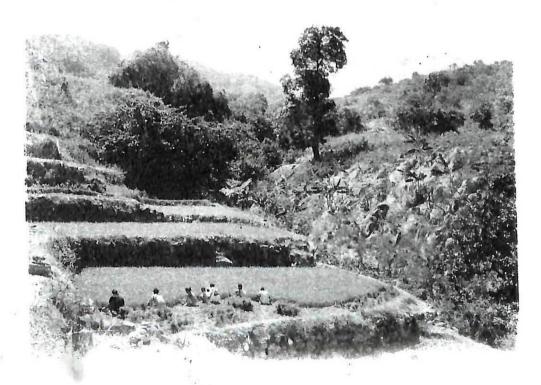
houses. Above 18 years age groups were not considered as children. There is no other information on tribals 6. Conclusion on prevalence with regard to anthropometric grading. of under nutrition -In each sub-group, there are atleast 32 sample size issue members upto the age of 14 years. 7. Usage of Beam Balance It was wrongly typed. It should be read as Bath Room Balance. 8. NCHS standards to be used In subsequent studies, we may us NCHS instead of HARVARD standards. We followed the old pattern. 9. Food consumption. Sample Since the sample was based on IFA() area, this happened because some tribes are size small in some tribal small in number in IFAD areas selected. groups. 10. Seasonal variation. whether the Yes. The same households from the same villages were studied in all 3 seasons. the same household or the same villages were covered in different seasons? 11. Food grouping. Milk and This was done according to NIN Book of "Nutritive Value of India Foods", Page.4 Meat products are pooled. Table No.1 (Five Food Group System) It is not usually done. We did not make any such statement. Infact 12. Consumption of Fat per C.U. is we never mentioned about fat intake in around 15 to 20 gms in summer grams. We are mentioning only about oil intake.

 Vit.-A & Iron consumption figures do not go hand in hand with the quantity of foods especially GLV. We verified our data again. We do not find any discrepancy

being more females were available in the



# **TABLES**



AGE GROUP	BAG	АТНА	МИКНА	DORA	KOND	A DORA	кн	OND	VAL	MIKI	коті	А	KAMM	ARA
(In Years)	М	F	М	F	м	F	М	F	м	F	м	F	м	F
0-4	26.97	18.77	27.50	18,18	10.83	19.13	23.49	22.58	15.33	11.47	20.00	12.50	8.87	25.55
5-9	15.73	17.98	12.50	15.15	21.87	14.78	21.69	12.03	15.33	8.20	20.00	37.50	13.33	5.0
10-14	7.86	8.98	7.50	6.06	14.17	7.83	3.01	7.52	7.30	4.92	20.00	6.87	5.00	5.26
15-19	3.93	8.98	2.50	12.12	10.00	8.09	7.83	17.30	10.35	15.57	10.0	12.50	0.0	10.0
20-24	5.62	12.57	10.00	13.18	5.83	8.70	10.34	9.77	12.41	11.47	0.0	0.0	13.33	10.0
25-29	12.38	9.98	15.00	12.12	8.33	12.17	7.23	11.28	10.95	13.11	10.0	0.0	20.0	15.55
30-34	8.99	5.99	7.50	3.03	10.83	10.43	9.64	8.01	3.78	7.38	0.0	12.50	20.22	0.0
35-39	6.18	5.93	5.00	3.10	6.87	5.22	3.01	5.28	2.32	5.50	10.0	12.50	6.67	0.0
40-44	3.93	2.40	5.00	0.00	5.87	1.74	8.83	3.01	8.57	4.10	10.0	0.0	8.87	10.0
45-49	2.25	2.99	2.50	0.00	0.0	5.22	2.41	1.50	2.92	4.10	_0.0	0.0	0.0	0.0
50-54	2.25	2.99	2.50	3.03	1.57	5.22	1.81	0.75	1.45	3.28	0.0	0.0	0.0	0.0
55-59	1.12	1.30	2.50	3.03	2.50	2.01	0.0	2.26	1.48	2.48	0.0	0.0	0.0	15.55
60	2.81	3.60	0.00	0.83	0.37	2.41	0.75	3.85	7.38	0.0	0.0	5.57	5.0	5.28
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Number	178	137	40	33	120	115	168	133	137	122	10	3	15	20

Table No.1

AGE STRUCTURE OF TRIBALS COVERED UNDER THE STUDY AS PERCENTAGE DISTRIBUTION

A ge Group	м	ALI		PORJA	KON	DA REDDY	ко	YA DORA		JATAPU		SAVARA		GADABA		TOTAL
(In Yrs.	) м	F	М	F	М	F	м	É	М	F	_м	F	N	1 F	М	ı
0-4	15.79	22.73	17.02	14.66	19.79	15.45	18.88	18.39	13.53	15.05	15.77	23.35	13.42	18.42	18.21	18.13
5-9	10.53	4.55	21.28	22.87	20.88	20.00	12.69	18.03	15.29	12.90	12.31	12.17	5.26	8.95	15.39	14.22
10-14	4.55	8.51	8.87	3.79	10.91	9.70	9.70	8.20	8.32	7.53	8.15	4.90	7.38	7.48	7.88	7.07
15-19	15.79	4.55	7.45	5.33	4.39	10.91	5.97	7.38	7.06	8.45	5.38	5.92	3.95	5.97	6.62	3.82
20-24	0.0	13.64	3.19	3.00	8.79	7.27	9.21	4.10	4.70	10.21	9.81	14.47	8.58	11.34	7.31	10.71
25-29	15.79	18.18	8.51	10.87	5.49	10.91	8.95	8.20	11.70	10.21	15.77	11.13	11.84	13.43	11.06	10.38
30-34	15.73	13.64	9.57	14.87	9.89	10.00	5.97	10.85	4.12	9.14	8.35	8.58	11.34	5.97	8.97	3.09
35-39	5.25	4.55	9.57	5.33	10.99	2.73	11.19	10.85	10.59	3.08	8.92	8.58	7.39	5.97	7.32	5.40
40-44	10.53	4.55	3.19	2.87	7.89	3.84	4.48	4.10	7.08	5.38	8.54	3.95	2.83	5.97	5 83	3.71
45-49	0.0	0.0	3.19	3.00	1.10	2.73	5.97	4.10	7.85	4.34	5.77	2.98	3.95	13.43	3.71	3.97
50-54	0.0	0.0	7.45	1.33	1.10	2.73	3.73	4.10	3.53	2.89	1.92	4.28	11.34	1.49	2.98	3.03
55-59	0.0	4.55	1.06	0.0	1.10	1.32	1.49	0.32	1.76	2.69	0.77	1.97	3.95	0.0	1.32	2.69
50	5.55	0.0	0.00	-	0.91	2.98	3.28	4.12	4.34	4.23	1.97	3.95	2.93	2.78	2.78	
otal	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
lumber	19	22	94	75	91	110	134	122	170	136	250	304	7.8	87	1510	1434

Table No. 2

#### TOTAL POPULATION AND AVERAGE FAMILY SIZE OF THE TRIBES

	ALE OF THE TOUR	TOTAL NO. OF	F	POPULATIO	NC	AVERAGE SIZE OF
NAI	ME OF THE TRIBE	HOUSE HOLDS	М	F	Т	THE FAMILY
	1					
1.	Bagatha	68	178	167	345	5.07
2.	Gadaba	30	76	67	143	4.77
3.	Jatapu	79	170	186	356	4.50
4.	Kammara	9	15	20	35	3.89
5.	Khond	49	166	133	299	6.10
6.	Konda Dora	49	120	115	235	4.80
7.	Konda Reddy	39	91	110	201	5.15
8.	Kotia	4	10	8	18	4.50
9.	Koya	53	134	122	256	4.83
10.	Mali	9	19	22	41	4.56
11.	Mookha Dora	17	40	33	73	4.29
12.	Porja	38	94	75	169	4.44
13.	Savara	121	260	304	564	4.66
14.	Valmiki	60	137	122	259	4.32

N.B.: Serial number should be of Tribal names

- 1. Sl. Nos: 1, 4, 5, 6, 8, 10, 11, 12, 14 inhabiting in Paderu ITDA Area
- 2. Sl. Nos: 2, 3, 6, inhabiting in Parvathipuram ITDA area
- 3. Sl. No. 13 inhabiting in Seethampet ITDA area
- 4. Sl. Nos.: 4, 7, 9, 14 inhabiting in R.C. Varam ITDA area.

Table No: 3

#### **FAMILY TYPE PARTICULARS OF THE TRIBES**

		Family	Туре		Average Family
SI. No.	and Tribe	Nuclear	Joint	Total	Size
1.	Bagatha	57	11	68	5.07
2.	Gadaba	23	7	30	4.77
3.	Jatapu	67	12	79	4.50
4.	Kammara	8	1	9	3.89
5.	Khond	33	16	49	6.10
6.	Konda Dora	47	2	49	4.80
7.	Konda Reddy	38	1	39	5.15
8.	Kotia	4	=	4	4.50
9.	Koya	51	2	53	4.83
10.	Mali	8	1	9	4.56
11.	Mookha Dora	.16	1	17	4.29
12.	Porja	35	3	38	4.44
13.	Savara	102	19	121	4.66
14.	. <sup>·</sup> Valmiki	53	7	60	4.32
	Total	542	83	625	4.79

Table: 4

#### VILLAGE-WISE PHYSIOLOGICAL STATUS PARTICULARS OF THE TRIBAL WOMEN

s	I. No Dist	rict	Mandal	Village	L.M.	P.M.	Breast Feeders	Whether ICDS Centre Exists
1.	Visakha	oatnam	Paderu	Kummmari Thomu	9	-	9	Yes
2.	Visakhar	oatnam	Paderu	D. Solamulu	12	-	12	Yes
3,	Visakhar	oatnam	Chintapalli	Somavaram	12	4	13	Yes
4.	Visakhap	atnam	G. Madugula	Kullupadu	5	4	5	Yes
5.	Visakhap	atnam	G. Madugula	Palamamidi	5	-	5	Yes
6.	Visakhap	atnam	Ananthagiri	Maradaguda	5	-	5	Yes
7.	Visakhap	atnam	G.K. Veedhi	G. Pathaveedhi	10	i <del>-</del>	10	Yes
8.	Visakhap	atnam	G. K. Veedhi	Korapalli	14	4	14	Yes
9.	Visakhap		Munchingput	Vanabasingi	2	1	2	Yes
10.	Visakhapa	atnam	Munchingput	Sujanapet	7	-	7	Yes
11,	Visakhapa	atnam	Dumbriguda	Laigonda	8	-	8	Yes
12.	Visakhapa	atnam	Hukumpet	Merakachinta	6		6	Yes
13.	Visakhapa	atnam	Araku	Gannela	32	2	32	Yes
				Sub total	117	8	128	13
14.	East Goda	avari	Maredumilli	P.M. Kota	7	-	7	Yes
15.	East Goda	avari	Maredumilli	Vokkuluru	7	-	7	Yes
16.	East Goda	ıvari	Deipatnam	Pamugandi	22	3	23	Yes
				Sub Total	36	3	37	3
17.	Vizianagar	am	G.L. Puram	Boddidi	10	-	10	Yes
18.	Vizianagara	am	Kurupam	Dhulikuppa	22	1	22	Yes
19.	Vizianagara	am	Pachipenta	Bobbilivalasa	11	3	12	Yes
20.	Vizianagara	am	G.M. Valasa	Pallapusiripi	14		14	No
				Sub Total	57	4	58	3/1
21.	Srikakulam		Seethampet	Benrai	17	1-	20	No
22.	Srikakulam		Seethampet	Eswarai	6	2	6	No
23.	Srikakulam		Seethampet	Neligandi	9	5	11	No
				Sub Total	32	7	37	0/3
				Grand Total	242	22	260	19/4

Table No:5

# **VILLAGE-WISE MARITAL STATUS PARTICULARS OF THE TRIBES**

		1	Male			Fer	nale		To	otal	
District	Mandal	Village	U.M. M W	id U.M Ower		M Wid-	U.M Owe		M		Ower Vidov
1. Visakhapatnam	Paderu	Kummarithumu	39	23	9	20	33	10	56	66	10
2. Visakhapatnam	Paderu	D. Solamulu	30	26	3	21	25	- *	51	54	3
3. Visakhapatnam	Chintapally	Somavaram	46	30	3	28	31	2	74	61	5
4. Visakhapatnam	G.Madugula	Kullupadu	44	40	3	28	31	2	74	61	5
5. Visakhapatnam	G.Madugula	Palamamidi	33	27	-	18	29	1	51	56	1
6. Visakhapatnam	Ananthagiri	Maradaguda	. 15	11	-	10	12	1	25	23	1
7. Visakhapatnam	G.K. Veedhi	G. Pathaveedhi	23	15	1	22	16	4	45	31	5
8. Visakhapatnam	G.K. Veedhi	Korapalli	63	48	2	43	48	1	106	96	3
9. Visakhapatnam	Munchingput	Vanabasingi	8	9	ē	5	12	2	13	21	2
10.Visakhapatnam	Munchingpu	t Sujanakota	33	28	3	20	26	5	53	54	8
11.Visakhapatnam	n Dumbriguda	Laigonda	17	11	1	16	11	1	33	22	2
12. Visakhapatnam	Visakhapatnam Hukumpet Meral		14	15	2	13	15	2	27	30	4
13. Visakhapatnan	.Visakhapatnam Aruku		48	43	-	45	47	2	93	90	2
	-	Sub Total	413	326	18	289	347	44	702	673	62
14. East Godavari	Maredumilli	P.M. Kota	33	18	1	25	21	9	58	39	10
15.East Godavari	Maredimilli	Vokkuluru	23	13	1	27	13	3	50	26	4
16.East Godavari	Denipatnam	Pamugandi	75	64	4	71	60	9	146	3 124	13
	_	Sub Total	131	95	6	123	94	21	25	4 189	27
17.Vizianagaram	G.L. Puram	Biddidi	30	28	2	27	29	8	57	57	10
18. Vizianagaram	Kurupam	Dhulikuppa	56	54	2	63	58	12	119	9 112	14
19. Vizianagaram	Pachipenta	Bobbiilivalala	46	39	3	32	38	4	78	77	7
20. Vizianagaram	G.M. Valasa	Pallapusiripi	41	45	2	32	50	8	73	95	10
		Sub Total	173	166	9	154	175	32	32	7 341	41
21.Srikakulam	Seethampet	Benari	42	43	7	57	41	12	99	84	19
22.Srikakulam	Seethampe	t Eswarai	15	20	1	14	23	3	29	43	4
23.Srikakulam	Seethampe	t Neligandi	28	17	-	36	14	5	64	31	5
		Sub Total	85	80	8	107	78	20	19	2 158	3 28
		Grand Total	802	667	4	1 673	694	11	7 147	'5 13 <sub>0</sub>	61 158

# **VILLAGE-WISE OCCUPATION PARTICULARS AMONG WORK FORCE**

			Mair	1 Oc	cupa	5	Subs	idiary C	ccup	ation		
Sl.No. Distri	ct Village -	Ag A	Agl	FL	Serv		Other Workers	Agl	FI	Hfp	Serv	
					lces						1003	VVUIN
1. Visakhapatnam	Kummarithoomu	62	•	-	1	-	-	20	-	23	-	
2. Visakhapatnam	D.Solamulu	56	2	-	-	-	-	20	-	-	-	1
3. Visakhapatnam	Somavaram	24	56	8	-	-	-	26	-	25	-	
4. Visakhapatnam	Kullupadu	87	12	-	2	-	-	74	-	15	-	1
5. Visakhapatnam	Palamamidi	56	-	-	-	-	-	39	-	24	*	
6. Visakhapatnam	Maradaguda	25	-	-	1	-	-	17	-	-	-	
7. Visakhapatnam	G. Pathaveedhi	37	-	-	2	-		4	20	-	-	1.
8. Visakhapatnam	Korapalli	97	-	-	-		-	56	6	-	-	1
9. Visakhapatnam	Vanabasingi	18	3	-		-	1	7	-	_	-	٠,
10. Visakhapatnam	Sujanapeta	43	20	_	1	-	2	30	-	19	-	1
11.Visakhapatnam	Laigonda	22	15	-	1	-		15	<u> </u>	10	12	
12. Visakhapatnam	Merakachinta	28	-	-	-	-	-	11	-	6	-	-
13.Visakhapatnam	Gannela	59	17	-	_	, · _	1	32		30	-	
14.East Godavari	P.M. Kota	55	=	-	-	-	-	20	-	42	-	
15.East Godavari	Vokkuluru	39	-	-	-	-	-	35	-	20	-	
16.East Godavari	Pamugandi	159	2	-	2	-	=	87	_	127	-	-
17.Vizianagaram	Boddidi	55	5	-	1	-	-	37	-	6	-	-
18. Vizianagaram	Dhulikuppa	135	12	-	1	-	_	33	+	81	-	-
19. Vizianagaram	Bobbilivalasa	62	40	-	-	-	-	62	-	_	-	
20.Vizianagaram	Pallapusiripi	102	8	=	1	-	-	60	-	75	=	-
21.Srikakulam	Benrai	117	5	-	-	-	-	45	÷	-	Ψ.	
22.Srikakulam	Eswarai	49	-	-	-	-	-	25	-	39	-	-
23.Srikakulam	Neligandi	49	-	-	-	-	-	47	-	34	-	-
		-										_
	Total	1436	197	7 -	1.	4 -	4	802	26	635	-	3

<sup>\*</sup> Remaining population are non-workers

# **VILLAGE-WISE LIVE STOCK PARTICULARS OF THE TRIBES**

S.No. District	Mandal	Village	Cows	Buff- alos	Bull- ocks		Sheep	Goats	Poul- try	Pig	s Oth- ers
1. Visakhapatnam	Paderu	Kummarithoomu	21	9	17	2	6	24	36	-	-
2. Visakhapatnam	Paderu	D. Solamulu	41	3	21	-	-	28	44	5	2Minas
3. Visakhapatnam	Chintapally	ySomavaram	38	-	34	3	4	23	7	1	-
4.Visakhapatnam	G.Madugu	ıla Kullupadu	21	2	13	10	-		20	-7	-
5. Visakhapatnam	G.Madugu	ıla Palamamidi	12	0	16	-	4	8	-	3	-
6. Visakhapatnam	Ananthagi	ri Maradaguda	28	-	12	0	0	24	30	-	
7. Visakhapatnam	G.K. Veed	lhi G. Pathaveedh	i 19	-	25	5	-	22	38	-	-
8. Visakhapatnam	G.K. Veec	lhi Korapalli	63	-	62	4	16	73	107	-	2duck
9. Visakhapatnam	Munching	put Vanabasingi	4	1	6	~	-	6	7	2	2duck
10.Visakhapatnam	Munching	put Sujanapeta	7	-	16	2	-	8	8	4	
11.Visakhapatnam	Dumbrigu	ida Laigonda	-	-	-	-	-	54	( <del>-</del>	-	-
12.Visakhapatnam	Hukumpe	t Merakachinta	6	11	13	3	i <del>-</del>	3	24	-	-
13.Visakhapatnam	3.Visakhapatnam Aruku Gannela					3	5	23	24	174	-
	Sub Total				265	32	31	242	345	15	6
14.East Godavari	Maredum	nilli P.M. Kota	15	2	8	9	-	36	38	-	-
15.East Godavari	Maredimi	illi Vokkuluru	6	-	2	-	1	23	28	-	-
16.East Godavari	Denipatn	am Pamugandi	53	12	52	25	2	124	72	2	-
		Sub Total	74	14	62	34	2	183	138	2	-
17.Vizianagaram	G.L. Pura	am Boddidi	15	8	32	0	2	18	13	-	-
18.Vizianagaram	Kurupam	Dhulikuppa	20	22	40	4	6	15	20	-	-
19.Vizianagaram	Pachiper	nta Bobbilivalasa	10	-	4	2	2	9	8	-	-
20.Vizianagaram	G.M. Val	asa Pallapusiripi	15	7	60	7	5	61	76	1	4 -
		Sub Total	60	37	136	13	15	103	117	1	4 -
21.Srikakulam	Seetham	pet Benrai	11	12	31	-	11	49	94	-	-
22.Srikakulam	Seetham	pet Eswarai	5	-	8	-	8	12	24	-	. :-
23.Srikakulam	Seetham	npet Neligandi	14	-	22	8	-	22	25	_	-
		Sub Total	30	12	61	8	19	83	143	-	-
		Grand Total	441	94	524	87	67	611	743	3	1 6

# VILLAGE-WISE LAND PARTICULARS OF THE TRIBES (In Acres)

	5	L.No. DISTRICT	VILLAGE		YPE OF LA	ND
				WET	DRY	PODU
1	1	. Visakhapatna	m Kummarithoomu		31.0	25.0
	2.	Visakhapatnar	m D.Solamulu	2.0	41.0	37.0
1	3.	Visakhapatnar	m Somavaram	3.5	81.0	36.5
1	4.	Visakhapatnan	n Kullupadu	9.0	77.0	42.5
	5.	Visakhapatnam	n Palamamidi	2.0	78.0	20.0
	6.	Visakhapatnam	n Maradaguda	-	50.0	29.0
1	7.	Visakhapatnam	G. Pathaveedhi	5.0	51.0	23.5
	8.	Visakhapatnam	Korapalli	3.0	155.0	19.5
	9.	Visakhapatnam	Vanabasingi	-	10.0	4.0
	10.	Visakhapatnam	Sujanapeta	-	37.5	38.75
	11.	Visakhapatnam	Laigonda	5.0	17.5	12.5
	12.	Visakhapatnam	Merakachinta	-	33.0	17.0
	13.	Visakhapatnam	Gannela	6.0	105.75	12.0
	14.	East Godavari	P.M. Kota	40.0	86.5	35.5
	15.	East Godavari	Vokkuluru	18.0	29.0	25.0
	16.	East Godavari	Pamugandi	38.0	98.0	76.5
	17.	Vizianagaram	Boddidi	8.0	29.0	19.05
	18.	Vizianagaram	Dhulikuppa	21.0	77.0	45.0
	19.	Vizianagaram	Bobbilivalasa	0.5	18.5	10.5
	20.	Vizianagaram	Pallapusiripi	16.75	28.0	54.25
	21.	Srikakulam	Benrai	33.75	37.85	87.5
2	22.	Srikakulam	Eswarai	•	24.5	50.5
2	23.	Srikakulam	Neligandi	5.5	4.75	29.0
			Total	217.0	1200.85	750.05
F	er fam	nily Average Land Hold	dings	0.35	1.92	1.20
*						

Table No.9

VILLAGE - WISE CROPPING PATTERNS OF THE TRIBES (In Acres)

SI.No.	. Village	Paddy	Jower	r Ragi	Nuts & i Oils	Sama	Red Gram	Turm eric	Maize	Bajra	Voodhelu	J Cowpe	ea Green Gram	Italian High	Ginger	Pipal	Miahi	Coffe	Veg.	.Tobacco
1.	Kummarithumu	u 18.75.	5. 1.5	15.25	2.50	9.50	0.50		0.5			0.25	0.25	1.0		(4)				
2.	D. Solamulu	26.60		21.0	-	20.50		1.0	3.0			٠								
3.	Somavaram	42.50	7.0	26.25	12.5	4.0	2.0	4.0				1.0				•				1.
4.	Kullupadu	31.50		16.50	10.0	8.0	1.0	20.25	•	•					0.50	6.25		•		
5.	Palam am idi	12.0	2.0	21.50	10.25	11.0	1.75	4.25			•	3.0		•	-			•		
6.	Maradaguda	21.50		20.50	1.0	11.50	1.					•			•					
7.	G. Pathaveedhi	i 17.0	1.0	1.50	1.0	2.0	1.25	0.75						1.0	2.0		1.0	36.0		
8.	Korapally	47.50	6.5	28.50	5.75	11.75	21.25	191		-	•	1.50	•		2.75		3.75			•
9. '	Vanabasingi	2.25	•	, 3.0	1.25	1.50												*	10.0	
10.	Sujanakota	14.0	1.0	11.25	10.0	7.25	1.0	4.75	1.25	0.25			-		•	3.50		•		
11. 1	Laigonda						•			-	•									
12. M	Merakachinta	23.95		10.5	0.50	8.25			1.25	-	-	٠	-		•		0.25	٠		
13. G	G A nnela	26.50		27.0	7.25	16.75	÷.	٠			•				-					•
14. P.	P.M. Kota	32.50	24.5	2.0	-	28.50	12.25		-			0.25	0.50	4.50		3				141
15. V	/ okkuluru		11.0	6.50	0.5	14.0	5.0					•		740		•			•	•
16. P	Pamugandi	26.0 3	33.25	17.50	7.25	25.0	28.5	•				9.75	3.75	0.75		(2)		•		•
17. 80	oddidi	17.05	•	2.50	7.40	1.50	7.0			2.50	•	3.0	1.0	3.50		٠		•	•	
18. DI	hulikuppa	22.0 1	12.25	22.5	8.50	15.0	7.50			3.25	4.0			5.0			•		•	
19. Bc	obbilivalasa	1.0	9.0	2.25	1.0					10.0	1.0				••	-		4 .	- ,.	
10. Pa	allapubiripi 2	23.50 1	0.25	9.0	0.50	1.75	29.0	1.50	٠	6.25	0.25	1.0		8.50		٠			•	
21. Ber	nrai 2	21.25 2	1.75	2.0	1	16.25	7.25 2	29.50		18.0	2.50	2.25	•	21.0	٠		-	-	•	•
22. Esv	warai	- 1	19.50	3.0	4	2.0	6.25	4.0		13.0	1.50			14.0			-	•		
23. Nel	ligandi	1.50	5.0		- '	1.0	3.5		. :	3.25	. (	0.25		6.0						

Table No 10

TRIBE-WESE CROPPING PATTERNS (In Acres)

					TR	IBE-WE	SECR	OPPIN	G PAT	TERN	S (In	Acres								
I.No.	Village	Paddy	Jower	Ragi	Nuts & Oils	Sama	Red Gram	Turm eric				Cowpea		Italian High	Ginger	Pippal	Mirchi	Coffe	Veg.	obac
1.	Bagatha	90.50	3.25	50.00	14.00	27.25	9.00	5.25	0.50			1.00			4.00		1.50	21.00		
2.	Gadaba	1.00	9.00	11.25						9.50	0.50								-	
3.	Jatapu	48.05	11.25	14.50	7.90	6.75	37.00	1.50		8.75	1.25	4.00	1.00	13.50					-	
4.	Kammara	7.00	2.25	3.00	2.50	2.25	0.25	2.50				0.25				1.00		6.00	-	
5.	Khond	52.00	6.00	50.50	14.25	38.00	3.25	6.25	3.00		-	4.00								
6.	Konda Dora	53.25	7.75	45.75	8.25	31.50	1.50		0.75	0.50	0.50	0.25	0.25	2.50			٠			
7.	Konda Reddy	32.50	31.00	10.50	0.50	33.50	20.25		•		-	0.75	0.50	4.50	-		-		-	
8.	Kotia	7.00	1.00	4.00	2.00	1.00		0.50	•		-	-	-	-			٠		-	
9.	Коув	26.00	31.00	15.00	7.25	22.75	24.75	-		3.50	-	9.00	3.25	0.75	1-1					
0.	Mali	2.25	D ZI	3.00	1.25	1.50		-	-		-				0.75	٠	-		10.00	
1.	Mukha Dora	15.75	3.25	7.00	0.50	1.00	5.50		0.50	-	-					-	1.00			
2.	Porja	21.50	3.00	19.75	6.25	10.00	6.50	2.75	1.25	0.25	19			-		3.50	2.50			
3.	Savara	35.25	56.75	56.75	8.50	31.50	23.50	33.50		37.50	7.00	2.50		43.00						0.
١.	V alm iki	36.50	•	22.50	13.50	8.00	2.00	17.75				0.50			0.50	5.25		9.00		
_	Total 4	28.55	165.50	271.75	87.15	215.00	135.50	70.00	6.00	60.00	9.25	22.25	5.00	64.25	5.25	9.75	5.00	36.00	10.00	<u></u>

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Table No.11

# PERCENTAGE OF MALNUTRITION IN RELATION TO AGE GROUPS AMONG TRIBALS IN STUDY AREA (HARVARD CLASSIFICATION)

AGE GROUP			Males					Females		
AGE GHOOT	Normal > 80	Grade-I 71-89	Grade-II 61-70	Grade-III 51-60	Grade-IV < 50	Normal ≯80	Grade-I 71-80	Grade-II 61-70	Grade-III 51-60	Grade-IV < 50
< 1 year	40.10	15.62	25.00	9.37	9.37	48.57	14.29	22.86	E	14.25
1-3 year	34.04	23.40	17.00	21.28	4.25	40.91	25.00	15.91	13.64	4.54
3-6 year	48.57	25.71	20.95	3.81	0.95	37.56	36.86	15.53	7.77	1.94
6-14 year	35.21	35.21	18.31	11.27	-	47.72	20.45	14.77	10.23	6.82
14-18 year	50.00	-	25.00	25.00	-	55.56	11.11	22.22	-	11.11
> 18years	45.83	45.83	8.33	-	-	60.44	29.78	8.89	0.44	0.44
Total	41.61	27.91	19.08	9.19	2.21	50.99	27.78	13.09	4.76	3.37

Table No.12

TRIBE-WISE PERCENTAGE OF MALNUTRITION TO ALL AGE GROUPS IN THE STUDY AREA

ACROSS THE DISTRICTS

AGE GROUP			Males					Females		
	Normal > 80	Grade-I 71-80	Grade-II 61-70	Grade-III 51-60	Grade-IV < 50	Normal > 80	Grade-I 71-80	Grade-II 61-70	Grade-III 51-60	Grade-IV < 50
1. Bagatha	42.86	23.81	21.43	7.14	4.76	54.55	27.27	13.64	4.54	-
2. Gadaba	33.33	8.33	25.00	16.67	16.67	54.17	33.33	4.17	-	8.33
3. Jatapu	20.00	40.00	20.00	16.67	3.33	41.67	31.25	18.75	2.08	6.25
4. Kammara		40.00	20.00	20.00		10.00	20.00	50.00	20.00	
5. Khond	50.00	36.36	11.36	2.27	\$6. J	57.69	28.85	9.61	-	3.85
6. Konda Dora	30.77	53.85	15.38			51.51	21.21	12.12	9.09	6.06
7. Konda Reddy	42.10	31.58	26.31	- 1		56.00	24.00	8.00	8.00	4.00
8. Kotia	75.00		25.00	13 1,3		75.00	25.00	-		•
9. Koya	50.00	17.86	25.00	7.14		49.15	30.51	11.86	5.08	3.39
10. Mali	80.00	-	20.00			82.00		9.00	-	9.00
1. Mukha Dora	71.44	14.28	14.28	-	· .	53.86	15.38	7.69	15.38	7.69
12. Porja	53.34	13.33	20.00	13.33	tr tr	65.22	21.74	8.69	4.35	
13. Savara	42.86	32.14	14.28	10.72		42.06	35.51	15.89	5.61	0.93
14. Valmiki	32.26	25.81	16.13	22.58		62.08	17.24	10.34	3.45	6.89
Total	41.69	27.91	19.09	9.19	2.12	50.99	27.79	13.09	4.76	3.37

Table No.13

TRIBE-WISE ABSTRACT OF DIETARY INTAKES IN RAINY SEASON (In Grams)

A G	E GROUP	Cereals	Pulses	Veg. & Fruits	Roots & Tubers	Milk & Meat	Oils & Fats	Sugar & Jaggery	Leafy Veg.	Condiments
1.	Bagatha	506.67	28.11	59.81	22.61	37.98	1.88	3.83	37.99	11.62
2.	Gadaba	374.41	34.22	25.68	10.01	57.15	2.46	27.38	44.49	13.69
з.	Jatapu	476.33	24.81	26.91	25.62	24.31	2.43	0.01	49.29	16.36
4.	Kammara	460.88	45.92	43.37	33.16	50.77	8.51	17.69	80.78	20.41
5.	Khond	413.88	26.22	45.58	16.13	38.52	11.49	10.89	74.22	8.82
6.	Konda Dora	425.02	31.95	5.96	10.21	35.96	4.56	9.12	79.79	12.66
7.	Konda Reddy	492.92	34.24	22.73	41.32	16.24	10.03	4.13	61.39	17.41
8.	Kotia	426.91	32.16	32.16	23.59	84.79	11.69	1.7.54	90.64	17.54
9. ′	Koya	500.22	33.54	35.55	37.12	43.83	11.18	4.47	50.54	21.91
10.	Mali	580.05	53.07	81.01	41.91	55.86	12.57	11.17	67.04	12.57
-11.	Mukha Dora	506.55	38.65	39.06	24.67	55.09	9.87	9.87	67.43	11.51
12.	Porja	449.06	40.19	28.07	17.32	53.01	12.47	4.16	49.91	13.51
13.	Savara	466.42	30.12	80.28	27.06	26.25	2.69	4.78	60.85	12.51
14.	Valmiki	4.25.08	43.33	42.33	29.61	38.12	2.66	4.31	59.17	12.96
	R.D.A	520.00	50.00	70.00	60.00	200.00	45.00	35.00	40.00	-

Table No.14
TRIBE-WISE ABSTRACT OF DIETARY INTAKES IN WINTER SEASON (In Grams)

	GE GROUP	Cerea	ls Puls	ses Veg. Fruits			•	Sugar Jaggei		Condiment
1	. Bagatha	582.7	3 58.9	5 95.99	32.02	47.09	15.07	20.41	15.00	14.61
2	. Gadaba	437.7	1 45.1	7 73.57	54.76	39.35	11.98	10.27	13.17	14.37
3	. Jatapu	581.06	32.75	5 55.52	41,51	17.99	19.45	20.26	23.02	21.07
4	. Kammara	586.73	61.22	119.04	54.42	62.07	11.91	15.31	22.11	26.36
5	. Khond	485.85	34.89	90.91	25.82	47.10	10.08	10.08	32.27	11.09
6	. Konda Dora	510.38	42.55	92.71	16.21	47.11	15.19	14.94	30.91	30.91
7.	Konda Redd	y 572.31	48.11	45.74	60.21	50.17	10.33	10.03	28.92	19.48
8.	Kotia	549.79	46.78	89.17	38.04	105.26	17.54	20.47	32.16	20.47
9.	Koya	587.88	44.51	68.64	59.48	39.13	15.65	19.23	23.03	27.39
10	). Mali	645.25	70.53	157.12	68.43	57.26	19.55	25.14	25.14	22.35
1	I. Mukha Dora	610.21	51.39	78.54	39.47	61.51	12.33	19.74	34,54	141.39
1:	2. Porja	568.25	51.63	50.42	27.72	50.58	1.04	10.39	20.29	16.98
13.	Savara	576.21	34.59	141.99	44.57	28.08	15.06	25.03	30.01	15.25
14.	Valmiki	514.63	62.06	81.12	41.89	53.49	15.51	19.95	27.48	
	R.D.A	520	50.00	70.00	00.00	200.00	45.00	35.00	40.00	

Table No.15

TRIBE-WISE ABSTRACT OF DIETARY INTAKES IN SUMMER SEASON (In Grams).

AG	E GROUP	Cereals	Pulses	Veg. & Fruits	Roots & Tubers	Milk & Meat	Oils & Fats	Sugar & Jaggery		Condiment
1.	Bagatha	559.49	56.51	87.44	44.58	34.53	18.61	21.35	20.96	21.19
2.	Gadaba	428.47	36.28	71.52	67.08	40.04	14.71	8.21	14.21	17.11
3.	Jatapu	539.88	26.26	57.93	50.91	35,11	21.08	19.45	27.24	35.11
4.	Kammara	579.93	49.32	297.62	59.52	49.32	16.16	11.91	30.61	38.26
5.	Khond	465.11	30.86	83.31	31.66	47.41	20.98	11.29	41.04	18.45
6.	Konda Dora	488.05	44.33	70.16	19.76	48.13	21.28	13.17	42.55	42.31
7.	Konda Reddy	y 477.86	38.66	51.21	73.79	42.21	12.99	10.62	34.09	20.65
8.	Kotia	479.53	39,47	76.02	46.78	98.29	20.46	14.62	43.86	29.24
9.	Koya	543.88	35.79	70.54	71.45	39.13	19.01	18.78	27.73	40.25
10.	Mali	572.62	55.86	128.49	83.79	54.47	23.74	20.95	34.22	36.31
11.	Mukha Dora	582.24	41.12	67.43	48.52	67.02	16.45	24.67	37.42	16.86
12.	Porja	519.75	55.44	54.57	33.96	49.21	17.67	8.66	27.72	24.61
13.	Savara	550.06	31.95	121.98	53.41	29.31	17.29	26.25	31.54	25.99
14.	Valmiki	505.32	46.11	78.02	50.03	50.98	19.94	22.16	35.91	17.95
	R.D.A	520.00	50.00	70.00	60.00	200.00	45.00	35.00	40.00	-

# TRIBE-WISE DIETARY INTAKE OF CEREALS (Gms) PER CU/PER DAY

Name of the tribe	Rainy	Winter	Summer
1. Bagatha	506.67	582.73	559.49
2. Gadaba	374.40	437.71	428.47
3. Jatapu	476.33	581.06	
4. Kammara	460.88	586.73	539.88
5. Khond	413.88	485.88	579.93
6. Konda Dora	425.02	510.38	465.11
7. Konda Reddy	492.92	572.31	488.05
8. Kotia	426.90	549.71	477.86
9. Koya	500.22	587.88	479 53
10. Mali	560.05	645.25	534.88
11. Mookha Dora	506.59	610.20	572.62
12. Porja	449.66	568.26	582.24
13. Savara	466.42	576.21	519.75
14. Valmiki	425.98	514.63	550.06
			505.32

Table No.: 17

## TRIBE-WISE DIETARY INTAKE OF PULSES (Gms) PER CU/PER DAY

Na	me of the tribe	Rainy	Winter	Summer
1.	Bagatha .	28.10	58.95	56.51
2.	Gadaba	34.22	45.17	36.28
3.	Jatapu	45.92	61.22	49.32
4.	Kammara	26.22	34.89	30.86
5.	Khond	24.80	32.75	26.26
6.	Konda Dora	31.91	42.55	44.33
7.	Konda Reddy	34.24	48.11	38.66
8.	Kotia	32.16	46.78	39.47
9.	Koya	33.54	44.50	35.79
10	). Mali	53.07	70.53	55.86
11	I. Mookha Dora	38.65	51.39	41.12
12	2. Porja	40.19	51.63	55.44
13	3. Savara	30.12	34.59	31.95
1	4. Valmiki	43.33	62.06	46.10

# TRIBE-WISE DIETARY INTAKE OF CEREALS (Gms) PER CU/PER DAY

ame of the tribe	Rainy	Winter	Summer
Bagatha	506.67	582.73	559.49
Gadaba	374.40	437.71	428.47
Jatapu	476.33	581.06	539.88
Kammara	460.88	586.73	579.93
Khond	413.88	485.88	465.11
Konda Dora	425.02	510.38	488.05
Konda Reddy	492.92	572.31	477.86
Kotia	426.90	549.71	479 53
Koya	500.22	587.88	534.88
Mali	560.05	645.25	572.62
Mookha Dora	506.59	610.20	582.24
Porja	449.66	568.26	519.75
Savara	466.42	576.21	550.06
Valmiki ————	425.98	514.63	505.32
	Bagatha Gadaba Jatapu Kammara Khond Konda Dora Konda Reddy Kotia Koya Mali Mookha Dora Porja Savara	Bagatha       506.67         Gadaba       374.40         Jatapu       476.33         Kammara       460.88         Khond       413.88         Konda Dora       425.02         Konda Reddy       492.92         Kotia       426.90         Koya       500.22         Mali       560.05         Mookha Dora       506.59         Porja       449.66         Savara       466.42	Bagatha       506.67       582.73         Gadaba       374.40       437.71         Jatapu       476.33       581.06         Kammara       460.88       586.73         Khond       413.88       485.88         Konda Dora       425.02       510.38         Konda Reddy       492.92       572.31         Kotia       426.90       549.71         Koya       500.22       587.88         Mali       560.05       645.25         Mookha Dora       506.59       610.20         Porja       449.66       568.26         Savara       466.42       576.21

Table No.: 17

# TRIBE-WISE DIETARY INTAKE OF PULSES (Gms) PER CU/PER DAY

Na	me of the tribe	Rainy	Winter	Summer
1.	Bagatha	28.10	58.95	56.51
2.	Gadaba	34.22	45.17	36.28
3.	Jatapu	45.92	61.22	49.32
4.	Kammara	26.22	34.89	30.86
5.	Khond	24.80	32.75	26.26
6.	Konda Dora	31.91	42.55	44.33
7.	Konda Reddy	34.24	48.11	38.66
8.	Kotia	32.16	46.78	39.47
9.	Koya	33.54	44.50	35.79
10	. Mali	53.07	70.53	55.86
11	. Mookha Dora	38.65	51.39	41.12
12	2. Porja	40.19	51.63	55.44
13	3. Savara	30.12	34.59	31.95
14	I. Valmiki	43.33	62.06	46.10

Table No.: 18

# TRIBE-WISE DIETARY INTAKE OF ROOTS AND TUBERS (Gms)PER CU/PER DAY

Na	me of the tribe	Rainy	Winter	Summer	
1.	Bagatha	22.60	32.02	44.58	
2.	Gadaba	10.00	54.76	67.08	
3.	Jatapu	25.62	41.50	50.91	
4.	Kammara	33.16	54.52	59.52	
5.	Khond	16.13	25.82	31.66	
6.	Konda Dora	10.13	16.12	19.76	
7.	Konda Reddy	41.32	60.12	73.29	
8.	Kotia	23.59	38.01	46.78	
9.	Koya	37.12	59.48	72.45	
	Mali /	41.90	68.43		
	Mookha Dora	24.67	39.47	83.79	
	Porja	17.32	27.72	48.52	
	Savara	27.06	44.57	33.96	
14.	Valmiki	29.60	41.89	53.11 50.03	

Table No.: 19

# RIBE-WISE DIETARY INTAKE OF MILK AND MEATS (Gms) PER CU/PER DAY

Name of the tribe	Rainy	Winter	Summer
1. Bagatha	37.98	47.09	34.33
2. Gadaba	57.15	39.35	40.04
3. Jatapu	24.13	17.99	35.10
4. Kammara	80.77	62.07	49.32
5. Khond	38.52	47.19	47.40
6. Konda Dora	35.96	47.11	48.13
7. Konda Reddy	84.79	105.26	98.29
8. Kotia	16.24	50.17	42.20
9. Koya	43.83	39.13	39.13
10. Mali	. 55.86	57.26	54.47
11. Mookha Dora	55.09	62.50	67.02
12. Porja	53.01	50.58	49.20
13. Savara	26.25	28.08	29.31
14. Valmiki	38.12	53.41	50.98

Table: 20

	DIETARY	INTAI	KE OF BAG	ATHAS	(In Gms)
S.No	o. Food Item	R.D.A.	Rainy	Winter	Summer
1.	Cereals	520	506.67	582.73	559.49
2.	Pulses	50	28.1	58.95	56.51
3.	Vegetables & Fruits	70	59.81	95.99	87.44
4.	Roots & Tubers	60	22.6	32.02	44.58
5.	Milk & Meat Products	200	37.98	47.09	34.53
6.	Oils & Fats	45	1.88	15.07	18.6
7.	Sugar & Jaggery	35	3.83	20.41	21.35
8.	Leafy Vegetables	40	37.99	15.23	20.96

Table: 21

21.19

14.6

DIETARY	INTAKE OF	GADABAS
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11.62

Condiments

9.

(In Gms)

					(III allie)
1.2	No. Food Item	R.D.A.	Rainy	Winter	Summer
1.	Cereals	520	374.41	437.71	428.47
2.	Pulses	50	34.22	45.17	36.28
3.	Vegetables & Fruits	70	25.67	73.57	71.52
4.	Roots & Tubers	60	10.01	54.76	67.08
5.	Milk & Meat Products	200	57.15	39.35	40.04
6.	Oils & Fats	45	2.46	11.98	14.71
<b>7.</b>	Sugar & Jaggery	35 ໍ	27.38	10.27	. 8.21
	Leafy Vegetables	40	44.49	13.17	14.21
	Condiments	-	13.69	14.37	17.11

Table: 22

# **DIETARY INTAKE OF JATAPUS**

(In Gms)

S.No	o. Food Item	R.D.A.	Rainy	Winter	Summer
1.	Cereals	520	476.33	581.06	539.88
2.	Pulses	50	24.81	32.75	26.26
3.	Vegetables & Fruits	70	26.91	55.52	57.93
4.	Roots & Tubers	60	25.62	41.51	50.91
5.	Milk & Meat Products	200	24.31	17.99	35.11
6.	Oils & Fats	45	2.43	19.45	21.08
7.	Sugar & Jaggery	35	0.01	20.26	19.45
8.	Leafy Vegetables	40	49.29	23.02	27.24
9.	Condiments	-	16.86	21.07	35.11

Table: 23

### **DIETARY INTAKE OF KAMMARAS**

(In Gms)

					(
S.No.	. Food Item	R.D.A.	Rainy	Winter	Summer
1.	Cereals	520	460.88	586.73	579.93
2.	Pulses	50	45.92	61.22	49.32
3.	Vegetables & Fruits	70	43.37	119.04	297.62
4.	Roots & Tubers	60	33.16	54.42	59.52
5.	Milk & Meat Products	200	50.77	62.07	49.32
6.	Oils & Fats	45	8.5	11.9	16.16
7.	Sugar & Jaggery	35	17.69	15.31	11.9
8.	Leafy Vegetables	40	80.78	22.11	30.61
9.	Condiments	-	20.41	26.36	38.26

Table: 24

# **DIETARY INTAKE OF KHONDS**

(In Gms)

<ol> <li>P</li> <li>V</li> </ol>	ood Item	R.D.A.	Rainy	Winter	Summer
	Cereals Pulses	520 50	413.88 26.22	485.88 34.89	465.11 30.86
4. R	egetables & Fruits	70	45.58	90.15	83.3
	Roots & Tubers	60	16.13	25.82	31.66
5. N	Milk & Meat Products	200	38.52	47.19	47.4
6. C	Oils & Fats	45	11.49	10.08	20.98
7. S	Sugar & Jaggery	35	10.89	10.08	11.29
8. L	eafy Vegetables	40	74.22	32.27	41.04
9. C	Condiments	68704	8.82	11.09	18.45

Table No: 25

DIETARY	INTAKE	OF	KONDA	DORAS

In Gms

_	E. R. C. R. L.	. MOMP	MONDA DORAS		
S.	No. Food Item	R.D.A.	Rainy	Winter	Summer
1.	Cereals	520	425.02	510.38	488.05
2.	Pulses	50	31.91	42.55	44.33
3.	Vegetables & Fruits	70	5.96	92.7	70.16
4.	Roots & Tubers	60	10.21	16.21	19.76
5.	Milk & Meat Products	200	35.96	47.11	
6.	Oils & Fats	45	4.56	15.19	48.13
7.	Sugar & Jaggery	35	9.12	14.94	21.28
8.	Leafy Vegetables	40	79.79	30.9	13.17
9.	Condiments	-	12.66	30.9	42.55
₹h					42.3

Table No: 26

## **DIETARY INTAKE OF KONDA REDDIS**

(In Gms)

S.No	o. Food Item R	.D.A.	Rainy	Winter	Summer
1.	Cereals	520	492.92	572.31	477.86
2.	Pulses	50	34.24	48.11	38.66
3.	Vegetables & Fruits	70	22.73	45.74	51.21
4.	Roots & Tubers	60	41.32	60.21	73.79
5.	Milk & Meat Products	200	16.24	50.17	42.2
6.	Oils & Fats	45	10.03	10.3	12.99
7.	Sugar & Jaggery	35	4.13	10.03	10.62
8.	Leafy Vegetables	40	61.39	28.92	34.09
9.	Condiments	- 1	17.41	19.48	20.66

Table No: 27

#### **DIETARY INTAKE OF KOTIAS**

(In Gms)

			and the state of t	4 4 28 1 5 1	(in Gms)
S.No.	Food Item F	R.D.A.	Rainy	Winter	Summer
1.	Cereal.,	520	426.9	549.71	479.52
2.	Pulses	50	32.16	46.78	39.47
3.	Vegetables & Fruits	70	32.16	89.17	76.02
4.	Roots & Tubers	60	23.59	38.04	46.78
5.	Milk & Meat Products	200	84.79	105.26	98.29
6.	Oils & Fats	45	11.69	17.54	20.46
7.	Sugar & Jaggery	35 ·	17.54	20.47	14.62
8.	Leafy Vegetables	40	90.64	32.16	43.86
9.	Condiments	-,	17.54	20.47	29.24

#### **DIETARY INTAKE OF KOYAS**

(In Gms) Winter S.No. Food Item Rainy Summer R.D.A. 500.22 534.88 1. Cereals 520 587.88 2. Pulses 35.79 44.5 50 33.54 3. Vegetables & Fruits 70.54 70 35.55 68.64 4. **Roots & Tubers** 72.45 59.48 60 37.12 39.13 5. Milk & Meat Products 200 39.13 43.83 19 6. Oils & Fats 45 15.65 11.18 7. Sugar & Jaggery 18.78 35 19.23 4.47 8. Leafy Vegetables 27.73 40 23.03 50.54 9. Condiments 40.25 27.39 21.91

Table No: 29

# DIETARY INTAKE OF MALIS

(In Gms) S.No. Food Item R.D.A. Rainy Winter Summer 520 560.05 1. Cereals 645.25 572.62 50 2. Pulses 53.07 70.53 55.86 3. Vegetables & Fruits 70 80.01 157.12 128.49 4. **Roots & Tubers** 60 41.9 68,43 83.79 5. Milk & Meat Products 200 55.86 57.26 54.47 6. Oils & Fats 45 12.57 19.55 23.74 7. 35 Sugar & Jaggery 11.17 25.14 20.95 8. Leafy Vegetables 40 67.04 25.14 34.22 9. Condiments 12.57 22.36

36.31

#### **DIETARY INTAKE OF MUKHA DORAS**

(In Gms)

S.No	o. Food Item	R.D.A.	Rainy	Winter	Summer
1.	Cereals	520	506.55	610.2	582.24
2.	Pulses	50	38.65	51.39	41.12
3.	Vegetables & Fruits	70	39.06	78.54	67.43
4.	Roots & Tubers	60	24.67	39.47	48.52
5.	Milk & Meat Products	200	55.09	62.5	67.02
6.	Oils & Fats	45	9.87	12.33	16.45
7.	Sugar & Jaggery	35	9.87	19.74	24.67
8.	Leafy Vegetables	40	67.43	34.54	37.42
9.	Condiments	-	11.51	14.39	16.86

Table No: 31

#### **DIETARY INTAKE OF PORJAS**

(In Gms)

					(III CITIS)
S.No	S.No. Food Item		Rainy	Winter	Summer
1.	Cereals	520	449.06	568.26	519.75
2.	Pulses	50	40.19	51.63	55.44
3.	Vegetables & Fruits	70	28.07	50.42	54.57
4.	Roots & Tubers	60	17.32	27.72	33.96
5.	Milk & Meat Products	200	53.01	50.58	49.2
6.	Oils & Fats	45	12.47	10.39	17.67
7.	Sugar & Jaggery	35	4.16	10.39	8.66
8.	Leafy Vegetables	40	49.9	20.09	27.72
9.	Condiments	-	13.51	16.98	24.6

### DIETARY INTAKE OF SAVARAS

(In Gms)

S.No	. Food Item	R.D.A.	Rainy	Winter	Summer
1. :	Cereals	520	466.42	576.21	550.06
2.	Pulses	50	30.12	34.59	31.95
3.	Vegetables & Fruit	s 70	80.28	141.99	121.98
4.	Roots & Tubers	60	27.06	44.57	53.41
5.	Milk & Meat Produ	cts 200	26.25	28.08	29.31
6.	Oils & Fats	45	2.69	15.06	17.29
7.	Sugar & Jaggery	35	4.78	25.03	26.25
8.	Leafy Vegetables	40	60.85	30.01	31.54
9.	Condiments		12.51	15.26	25.99

Table No: 33

### **DIETARY INTAKE OF VALMIKIS**

(In Gms)

					(III CITIS)
S.No	. Food Item	R.D.A.	Rainy	Winter	Summer
1.	Cereals	520	425.98	514.63	505.32
2.	Pulses	50	43.33	62.06	46.11
3.	Vegetables & Fruits	70	42.33	81.12	78.01
4.	Roots & Tubers	60	29.61	41.89	50.03
5.	Milk & Meat Products	s 200	38.12	53.49	50.98
6.	Oils & Fats	45	2.66	15.51	19.94
7.	Sugar & Jaggery	35	4.31	19.95	22.16
8.	Leafy Vegetables	40	59.17	27.48	35.91
9.	Condiments		12.96	12.96	17.95

#### INTAKE OF VARIOUS DIETARY COMPONENTS FOR 4 ITDA DISTRICTS

(WATERSHED AREAS)

**ABSTRACT** 

(In Gms)

S.No. Food Item		R.D.A.	Rainy	Winter	Summer	
1.	Cereals	520	436.45	552.99	516.71	
2.	Pulses	50	32.21	46.18	54.25	
3.	Vegetables & Fruits	70	34.14	76.41	85.49	
4.	Roots & Tubers	60	23.84	40.64	53.21	
5.	Milk & Meat Products	200	38.41	41.31	61.25	
6.	Oils & Fats	45	5.69	14.45	18.63	
7.	Sugar & Jaggery	35	6.59	17.85	81.16	
8.	Leafy Vegetables	40	57.85	22.77	30.68	
9.	Condiments	-	13.96	17.98	26.63	

Table No: 35

# SRIKAKULAM DISTRICT (WATERSHED AREAS OF ITDA) (In Gms)

S.No. Food Item Winter Summer R.D.A. Rainy 1. Cereals 520 472.97 591.69 563.07 2. **Pulses** 50 34.19 22.13 32.41 Vegetables & Fruits 3. 70 127.25 145.28 122.82 4. **Roots & Tubers** 60 29.41 24.98 33.51 5. Milk & Meat Products 27.18 200 32.87 27,49 6. Oils & Fats 2.84 15.02 16.75 45 7. Sugar & Jaggery 26.24 26.24 35 5.06 8. Leafy Vegetables 40 59.43 24.51 25.29 Condiments 9. 9.17 15.65 24.58

# INTAKE OF VARIOUS DIETARY COMPONENTS OF TRIBALS LIVING IN VIZIANAGARAM DISTRICT (Watershed Areas of ITDA)

(In Gms)

S.No	. Food Item	R.D.A.	Rainy	Winter	Summer
1.	Cereals	520	442.86	536.91	496.98
2.	Pulses	50	26.72	46.81	30.54
3.	Vegetables & Fruits	70	25.64	82.93	77.71
4.	Roots & Tubers	60	19.15	54.36	63.97
5.	Milk & Meat Products	200	28.79	37.22	39.07
6.	Oils & Fats	45	2.37	16.61	18.92
7.	Sugar & Jaggery	35	9.14	18.84	18.53
8.	Leafy Vegetables	40	50.66	18.07	28.69
9.	Condiments	-	17.37	18.49	29.61

Table No:37

# INTAKE OF VARIOUS DIETARY COMPONENTS OF TRIBALS LIVING IN VISAKHAPATNAM DISTRICT (Watershed Areas of ITDA) (in Gms)

S.No. Food Item		R.D.A.	Rainy	Winter	Summer	
1.	Cereals	520	455.46	540.01	517.18	
2.	Pulses	50	34.11	50.09	46.41	
3.	Vegetables & Fruits	70	52.75	89.72	86.01	
4.	Roots & Tubers	60	20.15	31.24	39.09	
5.	Milk & Meat Products	200	46.42	49.91	49.43	
6.	Oils & Fats	45	6.56	13.51	19.66	
7.	Sugar & Jaggery	35	7.17	16.62	16.78	
8.	Leafy Vegetables	40	58.21	24.59	32.76	
9.	Condiments	-	11.65	16.28	23.87	

## INTAKE OF VARIOUS DIETARY COMPONENTS OF TRIBALS LIVING IN EAST GODAVARI DISTRICT (Watershed Areas of ITDA)

(In Gms)

S.No	S.No. Food Item		Rainy	Winter	Summer
1.	Cereals	520	407.77	588.58	510.53
2.	Pulses	50	33.57	51.97	37.78
3.	Vegetables & Fruits	70	34.38	63.31	67.64
4.	Roots & Tubers	60	38.41	59.96	75.57
5.	Milk & Meat Products	200	32.71	32.28	42.12
6.	Oils & Fats	45	10.49	13.51	16.41
7.	Sugar & Jaggery	35	4.34	15.36	15.48
8.	Leafy Vegetables	40	56.16	23.29	31.65
9.	Condiments	-	19.91	24.21	32.02

Table-39

INTAKE OF VARIOUS NUTRIENT COMPONENTS OF TRIBES IN RAINY SEASON

S.No.	Tribe	Energy (K.Cal)	Protein (Gms)	Calcium (Mg)	Iron (Mg)	Vit-A (Ug)		Riboflavin (Mg)	Vit-C (Mg)	CIMO
1.	Bagatha	2004.42	52.73	851.11	13.47	687.79	1.62	0.65	23.42	
2.	Gadaba	1984.87	28.27	418.21	7.84	2156.03	0.62	0.41	43.38	1,116
3.	Jatapu	1873.64	45.72	667.26	12.77	2069.21	1.42	0.62	51.69	
4.	Kammara	2148.91	66.46	980.97	14.96	1966.21	1.52	0.68	63.33	1,0
5.	Khond	1801.58	47.74	886.22	11.95	613.78	1.42	0.59	28.52	
6.	Konda Dora	1757.21	46.98	827.66	12.76	1846.23	1.44	0.7	60.26	
7.	Konda Reddy	2058.02	48.92	479.58	31.72	4991.96	1.61	0.67	28.57	<b>'</b>
8.	Kotia	1973.95	52.15	1818.92	12.99	2606.43	1.34	0.69	64.76	
9.	Koya	2162.11	60.51	699.01	19.18	2559.16	1.71	0.76	51.39	
10.	M ali	2454.82	67.97	960.46	17.25	1983.14	2.05	0.93	60.21	
11.	Mukha Dora	2288.24	63.17	1133.72	14.25	615.78	1.74	0.73	20.54	
12.	Porja	1939.85	54.13	991.21	12.04	447.23	1.51	0.59	14.52	
13.	Savara	1853.25	62.56	560.38	16.31	1960.99	2.13	0.75	43.16	
14.	Valmiki	1833.73	56.34	744.86	11.51	2215.89	1.35	0.59	42.08	
	R.D.A	2875	60	400	28	3000	1.4	1.6	40	

INTAKE OF VARIOUS NUTRIENT COMPONENTS OF TRIBES IN WINTER SEASON

	MIAKE	1 VAIIIOU	HOTHILIN	I COMPONENTS OF TRIBES IN			I WINTER SEASON			
S.No.	Tribe	Energy (K.Cal)	Protein (Gms)	Calcium (Mg)	fron (Mg)	Vit-A (Ug)	Thiamine (Mg)	Riboflavin (Mg)	Vit-C (Mg)	
1.	Bagatha	2579.45	65.77	987.89	16.77	407.95	2.02	0.82	57.13	
2.	Gadaba	2023.12	61.41	420.68	26.93	697.64	1.61	0.96	34.9.3	
3.	Jatapu	2524.63	57.72	789.59	15.41	764.47	1.97	0.67	35.55	
4.	Kammara	2726.62	77.99	992.71	19.86	931.47	2.18	0.87	48.32	
5.	Khond	2071.92	56.85	1000.26	13.71	1144.89	1.604	0.68	48.99	
6.	Konda Dora	2300,71	63.82	1342.22	18.05	1308.46	1.71	0.75	65.61	
7.	Konda Reddy	3438.02	82.95	1603.93	47.35	1492.87	3.01	1.22	35.39	
8.	Kotia	2568.89	65.98	1091.42	17.6	2177.23	1.84	0.86	46.02	
9.	Koya	2622.94	69.36	723.28	21.85	1007.86	2.02	0.76	39.21	
10.	Mali	2817.71	77.88	1195.65	20.67	1126.13	2.38	0.98	74.64	
11.	Mukha Dora	2652.68	69.03	997.68	16.31	1254.34	1.98	0.79	64.15	
12.	Porja	2402.42	60.77	911.92	15.44	545.14	1.86	0.71	17.88	
13.	Savara	2405.29	75.31	960.18	19.22	1007.24	2.92	0.82	54.24	
14.	Valmiki	2224.55	58.68	469.15	11.55	1114.98	1.45	0.55	48.72	
	R.D.A	2875	60	400	28	3000	1.4	1.6	40	

Table-41
INTAKE OF VARIOUS NUTRIENT COMPONENTS OF TRIBES IN SUMMER SEASON

S.No.	Tribe	Energy (K.Cal)	Protein (Gms)	Calcium (Mg)	Iron (Mg)	Vit-A 7	Thiamine (Mg)	Riboflavin (Mg)	Vit-C (Mg)
1.	Bagatha	2541.31	62.55	1167.31	33.19	1407.73	2.06	0.91	36.81
2.	Gadaba	1938.45	47.51	394.01	30.84	1142.67	1.63	0.71	30.72
3.	Jatapu	2413.75	62.22	1108.22	29.76	1785.68	2.17	0.86	44.69
4.	Kammara	2764.46	67.21	1260.93	73.73	3663.78	2.19	1.24	86.61
5.	Khond	2125.93	55.85	1179.28	22.75	2274.95	1.66	0.81	54.93
6.	Konda Dora	2313.86	62.19	1205.36	30.23	2442.96	1.75	0.87	63.65
7.	Konda Reddy	2132.33	56.07	1198.26	23.63	1947.87	1.79	0.83	45.98
8.	Kotia	2320.38	64.15	1449.66	54.68	2437.58	1.91	1.04	58.05
9.	Koya	2457.47	60.11	1299.09	24.99	2041.13	2.02	0.93	51.3
Ο.	Mali	2754.27	72.02	1341.57	42.94	2099.04			77.1
1.	Mukha Dora	2590.16	66.15	1521.36	39.27	2077.4			53.3
2.	Porja	2344.01	59.82	1229.51	21.65	1772.6			35.9
3.	Savara	2506.92	64.13	1209.72	42.83	1624.6			54.0
4.	V alm iki	2361.78	58.94	1211.04	45.19	2588.3			46.00
	R.D.A	2375	60	400	28	3000	) 1.4	1.6	4 (

2: ------10.28% **AHTADA8** 32 30 52 12 9 9 97 07 20 10 semmer Summer .ε 2. netwith -----4++++++++ .1 Tribe PERCENTAGE OF DEFICIENCY TRIBE-WISE NUTRIENT INTAKE OF ENERGY Table No: 42

=======================================		
KOTIA		
1.++++++++++++++++++++++++++++++++++++	,	
KOYA		
1. ++++++++++++++++++++++++++++++++++++		
MALI		
1. ++++++++++++++++++++++++++++++++++++		
MUKHA DORA		
1. ++++++++++++++++++++++++++++++++++++		
PORJA		
1.++++++++++++++++++++++++++++++++++++		1
SAVARA		
1. ++++++++++++++++++++++++++++++++++++		à
ALMIKI		
1.+++++++++++++++++++++++++++++++++++++		
**************************************		

5 10 15 20 25 30 35 40 45 50

Y 55 (0.11)

### TRIBE-WISE NUTRIENT INTAKE OF IRON-PERCENTAGE OF DIFFICIENCY

NI-		Delay	<b>VA/:</b>	0
-Na	me of the tribe	Rainy	Winter	Summer
٦.	Bagatha	-51.89	-40.11	+18.54
2.	Gadaba -	-12.25	-3.82	+10.14
3.	Jatapu	-54.39	-44.96	+6.29
4.	Kammara	-46.57	-29.07	-0.25
5.	Khond	-57.32	-51.07	-18.75
6.	Konda Dora	-54.43	-35.54	+7.96
7.	Konda Reddy	+13.28	+69.10	-15.61
8.	Kotia	-53.61	-36.92	+95.29
9.	Koya	-31.50	-21.96	-10.75
10	. Mali	-38.39	-26.18	+53.35
11	. Mookha Dora	-49.10	+48.78	-40.25
12	. Porja	-57.0	-44.86	+13.03
13	. Savara	-41.75	-31.35	+52.96
14	. Valmiki	-58.89	-58.75	+61.39

TRIBE-WISE NUTRIENT INTAKE OF VIT\_'A'
PERCENTAGE OF DIFFICIENCY

Name of the tribe	Rainy	Winter	Summer
1. Bagatha	-77.07	-86.40	-53.07
2. Gadaba	-28.13	-76.74	-61.91
3. Jatapu	-31.00	-74.52	-40.48
4. Kammara	-34.46	-68.95	+22.13
5. Khond	-79.54	-61.84	-24.17
6. Konda Dora	-38.46	-56.38	-18.57
7. Konda Reddy	+66.39	-50.24	-35.07
8. Kotia	-12.78	-28.42	-18.75
9. Koya	-14.69	-66.40	-31.96
10. Mali	-33.89	-62.46	-30.03
11. Mookha Dora	-79.47	-58.17	-30.75
12. Porja	-85.09	-81.83	-40.91
13. Savara	-34.63	-66.42	-45.84
14. Valmiki	-26.14	-62.83	-13.82

#### **NUTRIENT INTAKE OF BAGATHAS**

	and the same	17700	bereden and	-
S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	2004.42	2579.45	2541.31
2. Protein (Gms)	- 60	52.73	65.37	62.55
3. Calcium (mg)	400	851.1	987.89	1167.31
4. Iron (mg)	28	13.47	16.77	33.19
5. Vit_A (ug)	3000	689.79	407.95	1407.73
6. Thiamine (mg)	1.4	1.62	2.02	2.06
7. Riboflavin (mg)	1.6	0.65	0.82	0.91
8. Vit_C (mg)	40	23.42	57.13	36.81

Table No: 46

#### **NUTRIENT INTAKE OF GADABAS**

				×
S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	1984.87	2023.12	1938.45
2. Protein (Gms)	60	28.27	61.41	47.5
3. Calcium (mg)	400	418.21	420.68	394.01
4. Iron (mg)	28	24.56	26.93	30.84
5. Vit_A (ug)	3000	2156.03	697.64	1142.67
6. Thiamine (mg)	1.4	0.62	1.6	1.63
7. Riboflavin (mg)	1.6	0.41	0.96	0.71
8. Vit_C (mg)	40	43.38	34.93	30.71

#### **NUTRIENT INTAKE OF JATAPUS**

S.No.Nutrient Item		R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)		2875	1873.64	2524.63	2413.75
2. Protein (Gms)	•	60	45.72	57.72	62.22
3. Calcium (mg)		400	667.26	789.59	1108.22
4. Iron (mg)		28	12.77	15.41	29.76
5. Vit_A (ug)		3000	2069.81	764.47	1785.68
6. Thiamine (mg)		1.4	1.42	1.97	2.17
7. Riboflavin (mg)		1.6	0.62	0.67	0.86
8. Vit_C (mg)		40	51.69	35.55	44.69

Table No: 48

### **NUTRIENT INTAKE OF KAMMARAS**

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	2148.91	2726.62	2764.46
2. Protein (Gms)	60	66.46	77.99	67.2
3. Calcium (mg)	400	980.97	992.7	1260.93
4. Iron (mg)	28	14.96	19.86	73.73
5. Vit_A (ug)	3000	1966.21	931.47	3663.78
6. Thiamine (mg)	1.4	1.5	2.18	2.19
7. Riboflavin (mg)	1.6	0.68	0.87	1.24
8. Vit_C (mg)	40	63.32	48.32	86.6

#### **NUTRIENT INTAKE OF KHONDS**

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	1807.58	2071.92	2125.93
2. Protein (Gms)	60	47.74	56.85	55.85
3. Calcium (mg)	400	886.22	1000.26	1179.28
4. Iron (mg)	28	11.95	13.7	22.75
5. Vit_A (ug)	3000	613.78	1144.89	2274.95
6. Thiamine (mg)	1.4	1.4	1.64	1.66
7. Riboflavin (mg)	1.6	0.59	0.68	8.0
8. Vit_C (mg)	40	28.52	48.99	54.93

Table No: 50

#### NUTRIENT INTAKE OF KONDA DORAS

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	1757.21	2300.71	2313.86
2. Protein (Gms)	60	46.98	63.82	62.19
3. Calcium (mg)	400	• 827.66	1342.22	1205.36
4. Iron (mg)	28	12.76	18.05	30.23
5. Vit_A (ug)	3000	1846.23	1308.46	2442.96
6. Thiamine (mg)	1.4	1.44	1.7	1.75
7. Riboflavin (mg)	1.6	0.7	0.75	0.87
8. Vit_C (mg)	40	60.26	65.6	63.65

#### **NUTRIENT INTAKE OF KONDA REDDIS**

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	2058.02	3438.02	2132.3
2. Protein (Gms)	60	48.92	82.95	56.07
3. Calcium (mg)	400	479.58	1603.93	1198.26
4. Iron (mg)	28	31.72	47.35	23.63
5. Vit_A (ug)	3000	4991.96	1492.87	1947.87
6. Thiamine (mg)	1.4	1.61	3	1.79
7. Riboflavin (mg)	1.6	0.67	1.22	0.83
8. Vit_C (mg)	40	28.57	35.39	45.98

Table No: 52

#### **NUTRIENT INTAKE OF KOTIAS**

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	1973.95	2568.89	2320.38
2. Protein (Gms)	60	52.15	65.98	64.15
3. Calcium (mg)	400	818.92	1091.42	1449.66
4. Iron (mg)	28	12.99	17.66	54.68
5. Vit_A (ug)	3000	2606.43	2177.27	2437.58
6. Thiamine (mg)	1.4	1.34	1.84	1.9
7. Riboflavin (mg)	1.6	0.69	0.86	1.04
8. Vit_C (mg)	40	64.76	46.02	58.05

#### **NUTRIENT INTAKE OF KOYAS**

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	2162.11	2622.94	2457.47
2. Protein (Gms)	60	60.51	69.36	60.11
3. Calcium (mg)	400	699	723.28	1299.09
4. Iron (mg)	28	19.18	21.85	24.99
5. Vit_A (ug)	3000	2559.16	1007.86	2041.13
6. Thiamine (mg)	1.4	1.71	2.02	2
7. Riboflavin (mg)	1.6	0.76	0.76	0.93
8. Vit_C (mg)	40	51.39	39.2	51.39

Table No: 54

### NUTRIENT INTAKE OF MALIS

_	Na Nivisiani Itana	D D A	Painy	Winter	Summer
5.1	No.Nutrient Item	R.D.A.	Rainy	vviiitei	Summer
1.	Energy (K.Cal)	2875	2454.82	2817.7	2754.27
2.	Protein (Gms)	60	67.97	77.88	72.02
3.	Calcium (mg)	400	960.46	1195.65	1341.57
4.	Iron (mg)	28	17.25	20.67	42.94
<b>.</b> 5.	Vit_A (ug)	3000	1983.14	1126.13	2099.04
6.	Thiamine (mg)	1.4	2.05	2.38	2.21
7.	Riboflavin (mg)	1.6	0.93	0.98	1.05
8.	Vit_C (mg)	40	60.2	74.64	77.18

#### **NUTRIENT INTAKE OF MUKHA DORAS**

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	2288.24	2652.68	2590.16
2. Protein (Gms)	60	63.18	69.03	66.15
3. Calcium (mg)	400	1133.72	997.68	1512.36
4. Iron (mg)	28	14.25	16.31	39.27
5. Vit_A (ug)	3000	615.78	1254.34	2077.46
6. Thiamine (mg)	1.4	1.74	1.96	2.18
7. Riboflavin (mg)	1.6	0.73	0.79	1.01
8. Vit_C (mg)	40	20.54	64.15	53.39

Table No: 56

### NUTRIENT INTAKE OF PORJAS

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	1939.85	2404.42	2344.01
2. Protein (Gms)	60	54.12	60.77	59.82
3. Calcium (mg)	400	991.21	911.92	1229.51
4. Iron (mg)	28	12.04	15.44	31.65
5. Vit_A (ug)	3000	447.23	545.14	1772.65
6. Thiamine (mg)	1.4	1.51	1.86	1.97
7. Riboflavin (mg)	1.6	0.59	0.71	0.92
8. Vit_C (mg)	40	14.52	17.88	35.95

#### **NUTRIENT INTAKE OF SAVARAS**

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	1853.25	2405.29	2506.92
2. Protein (Gms)	60	62.56	75.31	64.13
3. Calcium (mg)	400	560.38	960.18	1209.72
4. Iron (mg)	28	16.31	19.22	42.83
5. Vit_A (ug)	3000	1960.99	1007.24	1624.63
6. Thiamine (mg)	1.4	2.13	2.92	2.02
7. Riboflavin (mg)	1.6	0.75	0.82	0.99
8. Vit_C (mg)	40	43.16	54.24	54.04

Table No: 58

#### **NUTRIENT INTAKE OF VALMIKIS**

R.D.A.	Rainy	Winter	Summer
2875	1833,73	2224.55	2361.78
60	56.34	58.68	58.94
400	744.86	469.15	1211.01
28	11.51	11.55	45.19
3000	2215.89	1114.98	2588.32
. 1.4	1.35	1.45	1.92
1.6	0.59	0.55	0.91
40	42.08	48.72	46.06
	2875 60 400 28 3000 1.4 1.6	2875 1833.73 60 56.34 400 744.86 28 11.51 3000 2215.89 1.4 1.35 1.6 0.59	2875 1833.73 2224.55 60 56.34 58.68 400 744.86 469.15 28 11.51 11.55 3000 2215.89 1114.98 1.4 1.35 1.45 1.6 0.59 0.55

# INTAKE OF VARIOUS NUTRENT COMPONENTS BY TRIBALS ABSTRACT FOR 4 DISTRICTS (Watershed areas of ITDAs)

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	1916.39	2399.32	2364.19
2. Protein (Gms)	60	54.31	63.91	60.11
3. Calcium (mg)	400	732.22	789.97	1187.01
4. Iron (mg)	28	15.75	18.43	32.87
5. Vit_A (ug)	3000	1875.05	989.14	1901.13
6. Thiamine (mg)	1.4	1.65	1.98	1.94
7. Riboflavin (mg)	1.6	0.68	0.75	0.89
8. Vit_C (mg)	40	39.29	64.72	48.67

Table No: 60

# INTAKE OF VARIOUS NUTRIENT COMPONENTS OF TRIBALS LIVING IN SRIKAKULAM DISTRICT (Watershed Areas of ITDA)

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	1895.56	2410.46	2520.48
2. Protein (Gms)	60	71.79	78.81	64.31
3. Calcium (mg)	400	571.61	506.97	1177.07
4. Iron (mg)	28	17.68	21.19	33.89
5. Vit_A (ug)	3000	2388.14	1058.21	1393.14
6. Thiamine (mg)	1.4	2.71	3.42	2.03
7. Riboflavin (mg)	1.6	0.82	0.81	1.01
8. Vit_C (mg)	40	53.92	52.69	50.23

Table No: 61

## INTAKE OF VARIOUS COMPONENTS BY TRIBALS LIVING IN VIZIANAGARAM DISTRICT (Watershed areas of ITDAs)

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	1803.35	2331.35	2277.59
2. Protein (Gms)	60	47.14	. 58.27	57.92
3. Calcium (mg)	400	599.99	659.92	1096.76
4. Iron (mg)	28	15.46	18.21	34.35
5. Vit_A (ug)	3000	1956.21	801.86	1716.11
6. Thiamine (mg)	1.4	1.44	1.72	1.95
7. Riboflavin (mg)	1.6	0.71	0.75	0.83
8. Vit_C (mg)	40	44.01	41.36	47.62

Table No: 62

# INTAKE OF VARIOUS NUTRIENT COMPONENTS OF TRIBALS LIVING IN VISAKHYAPATNAM DISTRICT (Watershed Areas of ITDA)

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	1916.48	2380.66	2378.24
2. Protein (Gms)	60	53.23	61.94	60.51
3. Calcium (mg)	400	881.81	977.51	1210.79
4. Iron (mg)	28	12.64	15.51	31.55
5. Vit_A (ug)	3000	1147.74	1004.89	2061.79
6. Thiamine (mg)	1.4	1.49	1.81	1.91
7. Riboflavin (mg)	1.6	0.63	0.75	0.89
8. Vit_C (mg)	40	33.36	46.91	48.21

Table No: 63

# INTAKE OF VARIOUS COMPONENTS BY TRIBALS LIVING IN EAST GODAVARI DISTRICT (Watershed areas of ITDAs)

S.No.Nutrient Item	R.D.A.	Rainy	Winter	Summer
1. Energy (K.Cal)	2875	2112.81	1582.27	2336.07
2. Protein (Gms)	60	55.41	49.93	59.13
3. Calcium (mg)	400	607.22	618.99	1265.41
4. Iron (mg)	28	24.34	23.71	33.96
5. Vit_A (ug)	3000	3591.69	1204.63	2098.14
6. Thiamine (mg)	1.4	1.63	1.38	1.93
7. Riboflavin (mg)	1.6	0.71	0.61	0.91
8. Vit_C (mg)	40	38.61	37.05	50.59

# AVERAGE ANNUAL EXPENDITURE PATTERN (ALL TRIBES POOLED)

1. Food : 45.44%

2. Clothes : • 10.14%

3. Cosmetics : 9.53%

4. Education : 0.05%

5. Festivals & Rituals : 9.05%

6. Households Utensils

and usables : 3.47%

7. Fuel & Lighting : 3.51% (Gas is not Vogue)

8. Travelling : 1.05%

9. House Repairs : 2.02%

10. Country Liquor : 4.69%

(Local Brew)

11. Agricultural Inputs : 8.65%

12. Others Including : 2.50% Medicines, Tobacco,

Loan Repayment, Saving Etc.,

Total 100.00

## AVERAGE ANNUAL INCOME (ALL TRIBES POOLED)

Avegage Annual Income Per Family: Rs. 4565/-

65.47% 1. Agriculture Produce : (Rs In Equivalent) 19.56% 2. Agriculture Labour 1.75% 3. Household Industries: M.F.P. Sale 4. 3.91% 5. Forest Labour 1.03% 6. Live Stock 3.29% 7. **Employment** 1.49% 8. Others 3.50%

Total : 100.00



# **ANNEXURES**



### FOODS AVOIDED DURING PREGNANCY

SI. No	Prohibited Food Item	R	easons for Prohibition	Village in which such information was collected	Tribes living in the villages
1.	Egg	i)	Fits in new born	Sujanakota	Valmiki, Porja and
			child (Epilepsy)		and Bagata
		ii)	The new born child	Gannela	Konda Dora, Kondh
			may become dumb		and Valmiki
		iii)	The new born child may	Kullupadu	Bagata, Valmiki,
			become dumb and		Kammara and Mali
		~	suffer from burns \		
		iv)	Child may appear	Pallapusiripi	Jatapu
			like egg		
		v)	The child may be born	Bobbilivalasa	Gadaba, Kondadora
			without hair on the head		
		vi)	No reasons ascribed	Merakachinta .	Bagata, Mooka Dora and Konda Dora
		vii)	No reasons ascribed	Korapalli	Bagata, Porja and valmik
	Egg (Duck)		Body may get cooled since	Pallapusiripi	Jatapu
			the duck prefers to live		
			more in the water		
2.	Coconut	i)	Child may be born without	Sujanakota	Valmiki, Porja and Bagat
			hair on the head	The state of the s	,
		ii)	Difficulty during delivery	Gannela	Konda Dora, Kondh
			1		and Valmiki
		iii)	Scaly Skin on the body	Kullupadu	Bagata, Valmiki,
					Kammara and Mali
		iv)	Lactation failure	Pallapusiripi	Jatapu
		v)	No reasons ascribed	Merakachinta	Bagata, Mooka Dora
					and Konda Dora
		vi)	No reasons ascribed	Bobbilivalasa	Gadaba and Konda Dora
3.	<b>Plantains</b>	i)	May be afflicted by the	Gannela	Konda Dora, Kondh and
			wrath of evil spirits		Valmiki tribes
		ii)	No reasons ascribed	Sujanakota	Valmiki, Porja and Bagar
		iii)	No reasons ascribed	Merakachinta	Bagata, Mooka Dora and Konda Dora
		iv)	No reasons ascribed	Bobbilivalasa	Gadaba and Konda Dora
4.	Meat of	i)	No reasons ascribed	Sujanakota	Valmiki, Porja and Baga
	Goat	ii)	No reasons ascribed	Merakachinta	Bagata, Mooka Dora an
		P		,	Konda Dora
5.	Mutton	i)	Heavy thirst, Itching at	Kullupadu	Bagata, Valmiki, Mali
			palm and the new born	1	and Kammara
			may be an albino		
		ii)	No reasons ascribed	Sujanakota	Valmiki, Porja and Bagat
		iii)	No reasons ascribed	Palamamidi	Kondh and Konda Dora

	1			THE PERSON NAMED OF THE PARTY OF			nice Dora
6.	Meat of	i)	The C	Child may born with ab- al size of teeth and ears	Merak	achinta	Bagata, mooka Dora and Konda Dora
	Rabbit	ii)	(Phys	sical deformity) be afflicted by the	Kullu	padu	Bagata, Valmiki, Mali and Kammara
	*	iii)	wrat	h of evil spirits reasons ascribed	Kora	palli	Bagata, Reddi Dora, Porja and Valimiki
	7. Pork	iv) v) i)	No No	reasons ascribed reasons ascribed	Pala Kull	bilivalasa amamidi upadu	Gadaba and Konda Dora Kondh and Konda Dora Bagata, Valmiki and Kammara
		ii)	ch	ild in the womb (Congen- Il malformation) o reasons ascribed	Во	bbilivalasa Ilupadu	Gadaba and Konda Dora Bagata, Valmiki,
1	8. Meat	of ·	A	rthritis		v.	Bagata, Valmiki,
1	Peac	ock			Kı	ullupadu	Kammara and Mali
1	9. The left of	over	E	pilepsy			
1	meat wil	nch was				u -adu	Bagata, Valmiki
1	licked b	y the fox		*	K	(ullupadu	Kammara and Mali
	10. The Le			Epilepsy			
.	over lic	kedb by			1	Kullupadu	Bagata, Valmiki,
	rat / Pa			May be afflicted by the			Kammara and Mali
- 1	11 Fis	h				Merakachinta	Bagata, Mooka Dora and Konda Dora
7	12. Ja	ck Fruit	.,	Mucus in motions			Kondh and konda Dora
1	12. 34	CK Fruit	i)			Palamamidi	
			ii)	Mucus in motions		Bobbilivalasa	Savara
- 1			iii)	Stomach Pall Ver ove	r	Eswarai	
.			iv)	The thorn may cause dar	nage		
	40 =			jack fruit (Ha) to stomach (Gastritis)	/	Palamamidi	Kondh and Konda Dora
-	13. F	umpkin	i)	The new born critical transfer from stomach ac suffer from stomach ac	ne bard	Bobbilivalasa	Gadaba and Konda Do
			***	suffer from stomach as Stomach may become	Haiu	Fswarai	Savara
		A	ii) iii)	Stomach may be No reasons ascribed		Merakachint	a Bagata Mooka Dora an and Konda Dora
	14. Co	olacacia A	Anti	Itchna		Merakachin	a Bagata, Mooka Dora a
	ou	roram(Ch	ema)	Stomach ache (Gastic	pain)	Merakaciini	Valmiki
	15	Beans		Stomach across		Gannela	Konda Dora, Kondh ar
	10	D: "-		-fflicted by the	Э	Galliola	Valmiki
	16.	Pindi Du	mpa	May be afflicted wrath of evil spirits		Palamamid	
	17.	Brinjal		Diarrohea		Kullupadu	Bagata, Valmiki.
	18.	Cow pe	а	Jaundice			Kammara and Mali
		w pc	u	ou.		Bobbilivala	sa Gadaba and Konda D
	19.	Green g	gram	Burn in the Stomach		ماني برين ر	sea Gadaha
				(Gastritis)		Bobbilivala Bobbilivala	sa Gadaba and Konda D sa Gadaba and Konda D
	20.	Maize		Burn in the stomach Stomach may become	ne hard	Eswarai	Savara
	21.	Water	gourd	Stomach pain		Eswarai	Savara
	22. 23.	Gante Jowar		Arthritis		Pamugan	
	24.	Papay	а	Abortion		, amag-	Tonda Ho
	27.	, apay	۵.				100

#### ANNEXURE - II

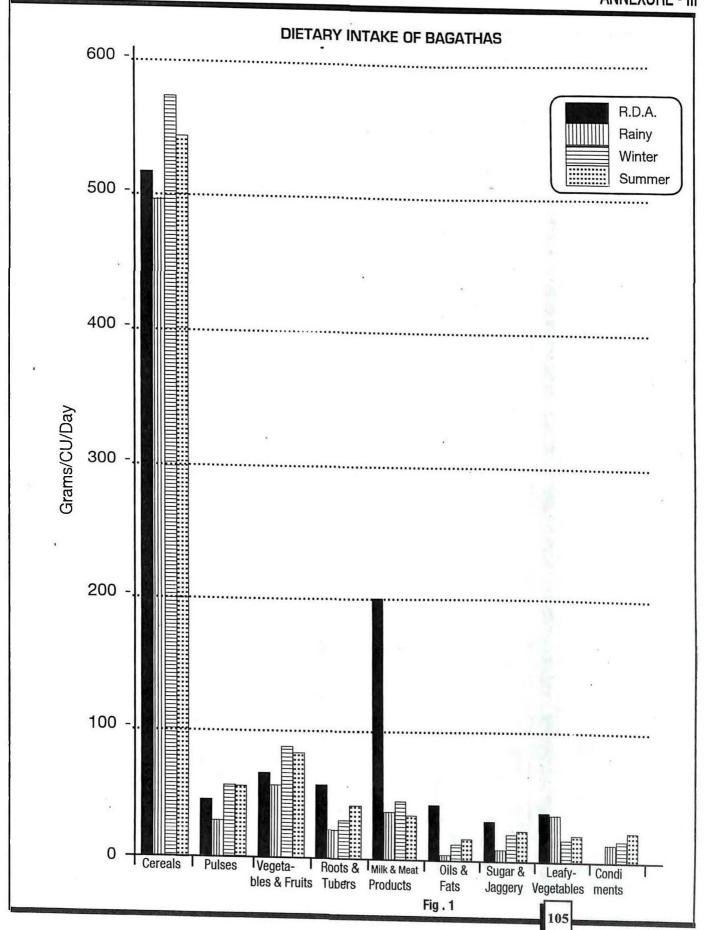
### FOODS AVOIDED DURING LACTATION

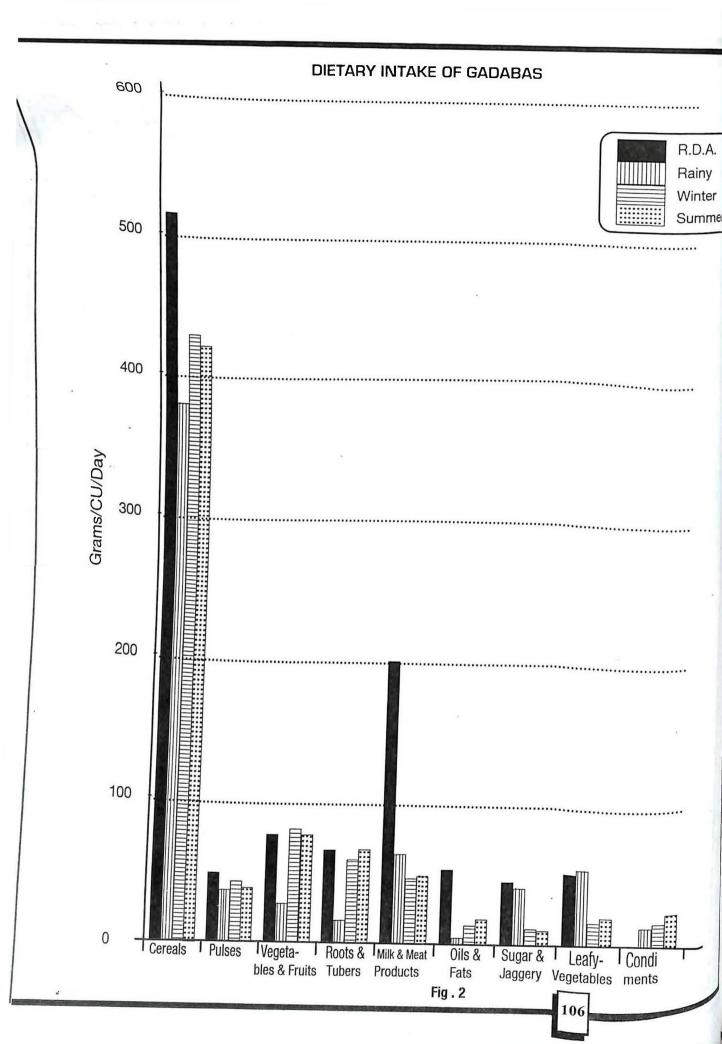
SI. No	Prohibited Food Item	Re	easons for Prohibition	Village in which such information was collected	Tribes living in the villages
1.	Egg	i)	Fits in new born	Sujanakota	Valmiki, Porja and
			child (Epilepsy)		and Bagata
		ii)	The new born child	Gannela	Konda Dora, Kondh
			may become dumb	•	and Valmiki
		iii)	Pains at Joints	Boddidi	Jatapu
		iv)	Child may suffer from	Dulikuppa .	Jatapu and Savara
			diseases since the		
			child is breast fed		
		v) -	Tardy growth of hair on the head of the child	Bobbilivalasa	Gadaba, Konda Dora
		vi)	The child may suffer	Benrai	Savara
		VI)	from diseases	Deriral	Savara
		vii)	May suffer from fatal	Pamugandi	Koya and konda Dora
		VIII	disease	Tamaganar	Noya and Konda Dora
		viii)	No reasons ascribed	Merakachinta	Bagata, Mooka Dora and Konda Dora
2.	Coconut	i)	Tardy hair growth on the	Sujanakota	Valmiķi, Mooka Dora
		::\	head of the child	Dames same di	Bagata
		ii)	Stomach ache	Pamugandi Merakachinta	Koya and Konda Reddy
		iii)	No reasons ascribed	Werakachinta	Bagata, Mooka Dora and Konda Dora
		iv)	No reasons ascribed	Somavaram	Kondh, Kotia, Valmiki and Bagata
		v)	No reasons ascribed	Bobbilivalasa	Gadaba and Konda Dora
3.	Plantains	i)	May be afflicted by the	Gannela	Konda Dora, Kondh
			wrath of evil spirits		and Valmiki
		ii)	Palpitation	Kummaritomu	Konda Dora, Kondh and Valmiki
		iii)	Stomach ache	Boddidi	Jatapu
		iv)	The Child may suffer from diseases	Benrai	Savara
				Pamugandi	Koya and Konda Reddy
		v)	Cough and Colds No reasons ascribed	Sujanakota	Valmiki, Porja and Bagata
		vi)	No reasons ascribed	Merakachinta	Bagata, Mooka Dora
		vii)	No reasons ascribed	Wierakachiina	and Konda Dora
		viii)	No reasons ascribed	Korapalli	Bagata, Mooka Dora, Porja and Valmiki
		ix)	No reasons ascribed	Bobbilivalasa	Gadaba and Konda Dora
4.	Mutton	i)	Child may get diseases	Pullapusippi	Jatapu
		ii)	May be afflicted by the	Nelagandi	Savara
			wrath of evil spirits		

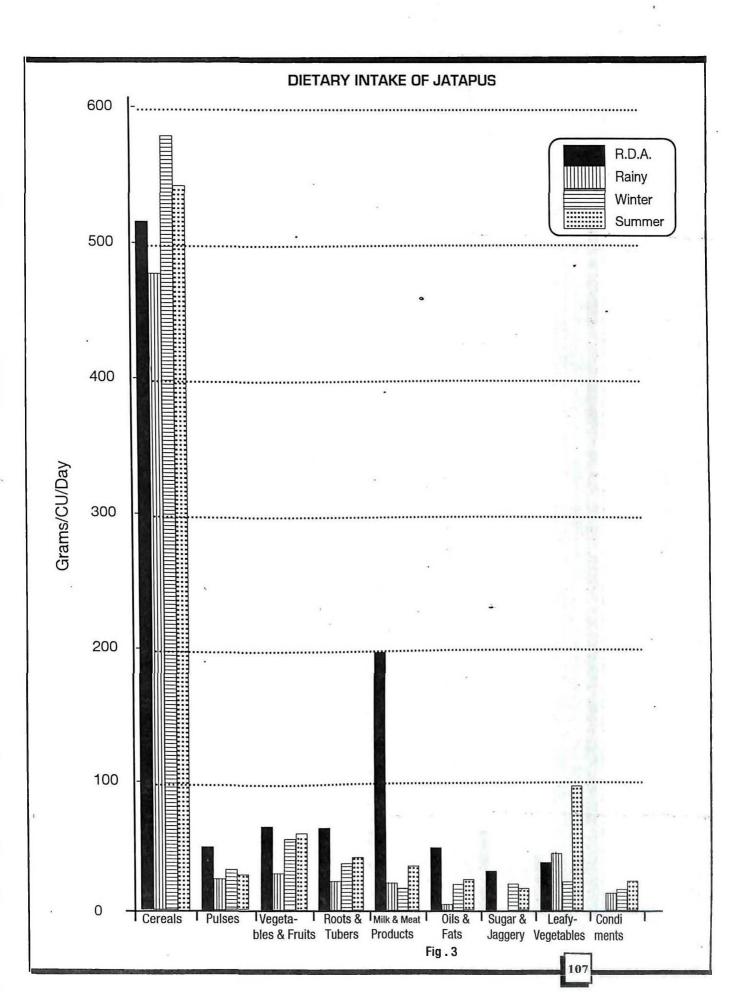
		iii)	No reasons ascribed	Sujankota	Valmiki, Porja and Bagata
		iv)	No reasons ascribed	Merakachinta	Bagata, Mooka Dora and Konda Dora
		v)	No reasons ascribed	Somavaram	Kondh, Kotia, Valmiki and Valmiki
		vi)	No reasons ascribed	Bobbilivalasa	Gadaba and Konda Dora
	٠.	vii)	Itching	Kummaritomu	Kondh, Konda Dora, . and Valmiki
		viii)	Epilepsy	Boddidi	Jatapu
		ix)	May be afflicted by the wrath of evil spirits	Neelagandi	Savara
		x)	No reasons ascribed	Sujanakota	Valmiki, Porja and Bagata
		xi)	NO reasons ascribed	Palamamidi	Kondh andKonda Dora
		xii)	No reasons ascribed	Somavaram	Kondh, Kotia, Valmiki and Bagata
5.	Meat of	i)	The child may develop ab-	Merakachinta	Bagata, Mooka Dora
	Rabbit	,	normal size of teeth and		and Konda Dora
			ears (Physical deformity)		
		ii)	Itching	Kummaritomu	Konda Dora,Kondh and Valmiki
			Frilandy	Boddidi	Jatapu
		iii)	Epilepsy The child may suffer from	Dulukuppa	Jatapu and Savara
		iv)	diseases since the child is breast fed		,
	•	v)	No reasons ascribed	Palamamidi	Kondh and Konda Dora
		vi)	No reasons ascribed	Somavaram	Kondh, Kotia, Valmiki and Bagata
		vii)	No reasons ascribed	Bobbilivalasa	Gadaba and Konda Dora
6.	Pork	i)	Parasthesia	Boddidi	Jatapu
٥.	PUIK	ii)	Arthritis	Pamugandi	Koya and Konda Reddy
		iii)	No reasons ascribed	Bobbilivalasa	Gadaba and Konda Dora
7.	Meat of		Neck of the child may become long like neck of Peacock	Boddidi	Jatapu
8.	Chicken	i)	May be afflicted by the wrath of evil spirits	Nelagandi	Savara
		ii)	Enlarge Stomach	Korapalli	Bagata, Mookha Dora
		iii)	No reasons ascribed	Pallamusippi	Porja and Valmiki Jatapu
9.	F: 1 0		Body may get cooled since	Pallapusirpi	Jatapu
Э.	Fish &	i)	fish live in water		P 4
	prawns	ii)	May cause death	pamugandi	Koya and Konda Reddy
10.	Jack Fruit		Mucus in motions	Merakachinta	Bagata, Mooka Dora and
		ii)	Mucus in motions	Palamamidi	and Konda Dora Kondh and Konda Do <sup>ra</sup>

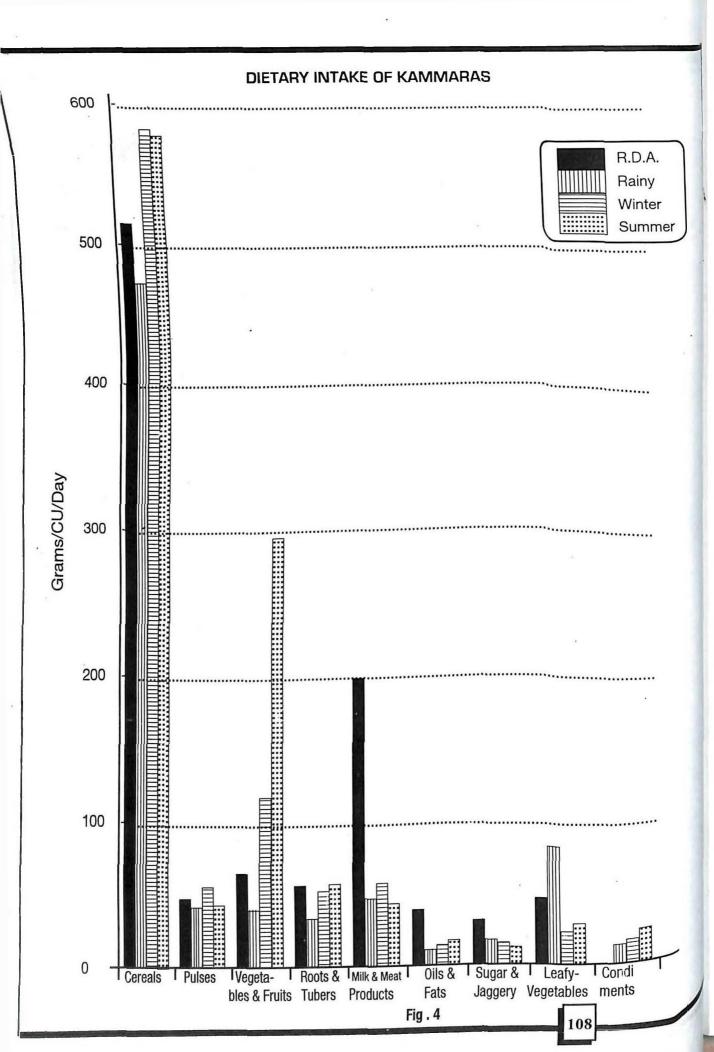
		iii)	Burns	Boddidi	Jatapu
		iv)	Stomach Pain	Bobbilivalasa	Gadaba and Konda Dora
		v)	The thorn like cover over jack	Eswarai	Savara
			fruit may cause damage to		
			stomach (Gastritis)		
		vi)	No reasons ascribed	Somavaram	Kondh, Kotia, Valmiki
			child (Epilepsy)		and Bagata
11.	Pupmpkin	i)	The New born child may	Palamamidi	Kondh and Konda Dora
			suffer from stomach ache		
		ii)	Stomach may become hard	Bobbilivalasa	Gadaba and Konda Dora
		iii)	Epilepsy	Pamugandi	Koya and Konda Reddy
		iv)	No reasons ascribed	Somavaram	Kondh, Kotia, Valmiki
		,			and Bagatha
		v)	No reasons ascribed	Eswarai	Savara
		vi)	fever off and on	Boddidi	Jatapu
12	Ariselu	i)	Itching	Kummaritomu	Konda Dora, Kondh
	A sweet made		Toming		Dora, Horian
://	ggery and rice				
Ju	iggory and not	ii)	white soots on the body of	Boddidi	Jatapu
		"",	the child		•
		iii)	Paralysis	Pallapusiripi	Jatapu
			No reasons ascribed	Korapalli	Bagata, Reddi Dora.
13.	Cowpoo	iv)	Loose motions to the child	Gannela	Konda Dora, Kondh
13.	Cow pea	i)	Loose Motions to the child	darmola	and Valmiki
		ii)	No reasons ascribed	Korapalli	Bagata, Mookha Dora
		11)	No reasons ascribed	Horapam	Porja and Valmiki
		iii)	No reasons ascribed	Somavaram	Khond, Kotia, Valmiki
		111)	No reasons ascribed		Bagata
4.1	Drinial	:\	Loose motions	Palamamidi	Kondh and Konda Dora
14.	Brinjal	i) ::\	Arthritis	Pamugandi	Koya and Konda Reddi
		ii) :::\		Somavaram	Kondh, Kotia, Valmiki
		iii)	No reasons ascribed	Comavaram	and Bagata
15.	Beans	:/	Stomach ache	Merakachinta	Bagata, Mooka Dora and
15.	Dearis	i)	Storrache	Wordnaormia	Konda Reddy
		ii)	No reasons ascribed	Konapalli	Bagata, Mookha Dora,
		11)	No reasons ascribed	11011253	Porja and Valmiki,
		::)	No reasons ascribed	Krapally	Bagata, Mookha Dora
		ii)	No reasons ascribed	rapany	Porja and Valmiki
		:::\	Umbilical cord may not	Pamugandi	Koya and Konda Reddy
		iii)		ramaganar	reday
		:	dry up No reasons ascribed	Korapalli	Bagata, Mookha Dora
		iv)	No reasons ascribed	Norapani	Porja and Valmiki
18.	Mango		Cough and Colds	Boddidi	Jatapu .
19.	_	o i)	Itching	Boddidi	Jatapu
19.	Green gran	ii)	Burns in the stomach	Bobbilivalasa	Gadaba and Konda Dora
		iii)	The motions of the child	Pamugandi	Koya and Konda Dora
		111)		ramaganar	Noya and Nonda Dora
			may be green in colour		103

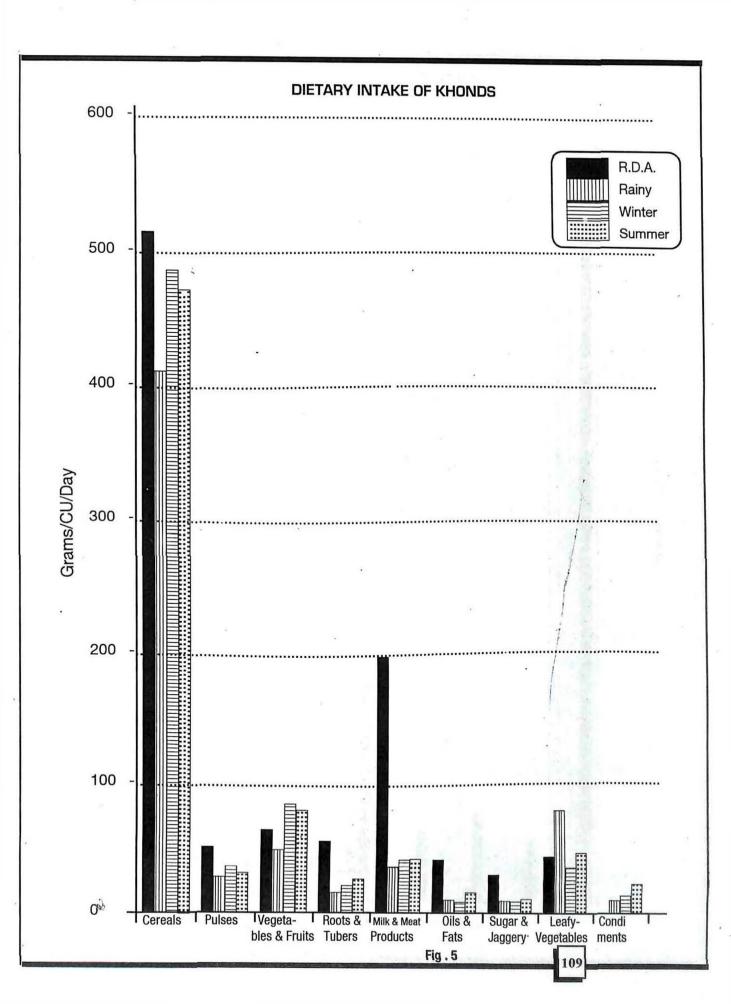
20.	Gingelli	i)	Fever	Boddidi	Jatapu
		ii)	White spots on the tongue	Pallapusiripi	Jatapu
2	1 Ro#1- 0		and burns in the mouth		
-	1. Bottle Gourd	(i b	Infection at intestine	Boddidi	Jatapu
		ii)	Stomach may become hard	Bobbilivalasa	Gadaba and Konda Dora
22 T		iii)	No reasons ascribed	Pallapusiripi	Jatapu
22. Tubers like i)		i)	Swelling on the legs	Pallapusiripi	Jatapu
Palleru Tanga Konda shara					
Konda sivva pendalan Tuber called ii)					
	Kapuseragadi	ii)	Burns on the head	Boddidi	Jatapu
2	23. Jowar	.,		D. II	
	oowar	i)	The neck of the child may	Pallapusiripi	Jatapu
		::\	get turned back	Eswarai	Savara
		ii) iii)	Arthritis	Benrai	Savara
		iv)	Itching + Itching	Nelagandi	Savara
	24. Mushroo	ms i)	The child may suffer from	Pallapusiripi	Jatapu
		.,	dangerous diseases		
		ii)	Mother or child may die	Benrai	Savara
		iii)	Stomach ache	Pamugandi	Koya and Konda Reddi
,	25. Ridge go		Stomach ache	Pallapusiripi	Jatapu Jatapu
		ii)	No reasons ascribed	Bobbilivalasa	Gadaba and Konda Dora
	26. Italian mi	llet i)	Body Pains	Nelagandi	Savara
	(Korra)				
,		ii)	The milk may not get	Pamugandi	Koya, Konda Reddi
			digested by the child		i loddi
	07	iii)	No reasons ascribed	Pallapusiripi	Jatapu
	27. Gante	i)	Stomach ache	Eswarai	Savara
	Ship.	ii)	Itching	Nelagandi	Savara
,	Sec.	ंः iii)	Lactation failure	Benrai	Savara
.77	28. Ground n	ut	Stomach pain	Pallapusiripi	Jatapu
4	29. Maize	i)	Burns in the stomach	Bobbilivalasa	Gadaba and Konda Dora
		ii)	The milk may not get	Pamugandi	Koya and konda reddy
2	0 5 .		digested by the child		
	0. Red gram		Loose motions	Nelagandi	Savara
3	1. Sama	i)	Mucus in motions	Nelagandi	Savara
0.	0 -	ii)	Back pain	Benrai	Savara
32			Epilepsy to both mother &	Benrai	Savara
-	shoots		child		
33	3. Guava	i)	Epilepsy	Benrai	Savara
120		ii)	Cough and colds	Pamugandi -	Koya and Konda Reddy
34			Epilepsy	Pamugandi	Koya and Konda Reddy
35	,		Epilepsy	Pamugandi	Koya and Konda Reddy
36	. Drum stick		Head ache	Pamugandi	Koya and Konda Reddy

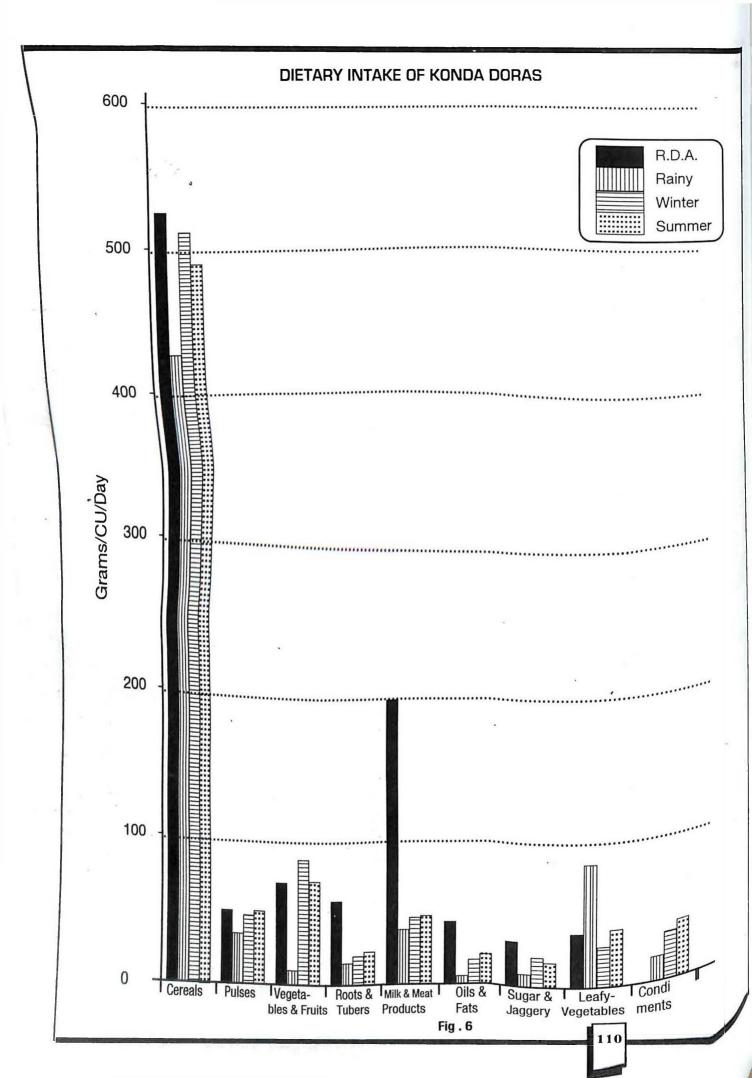


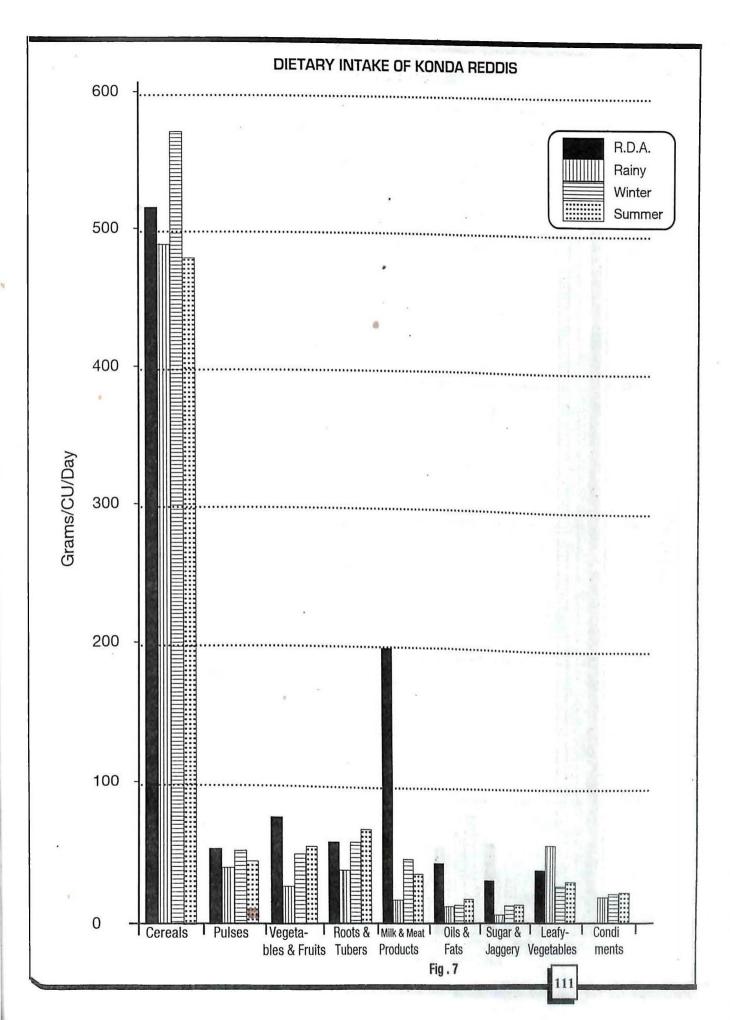


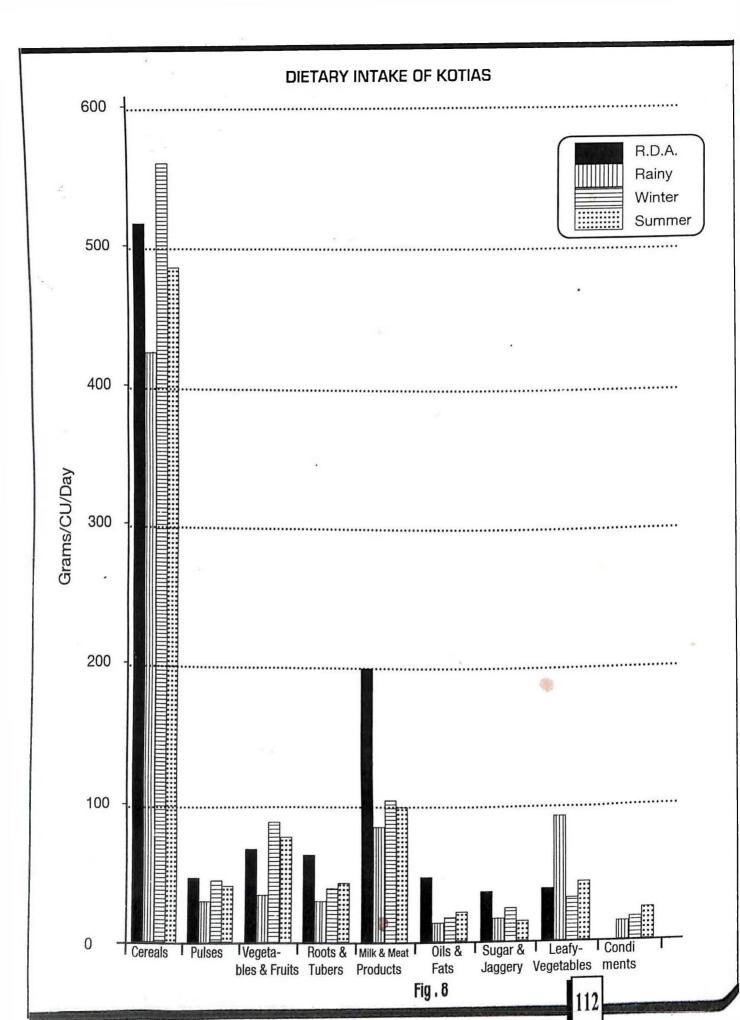


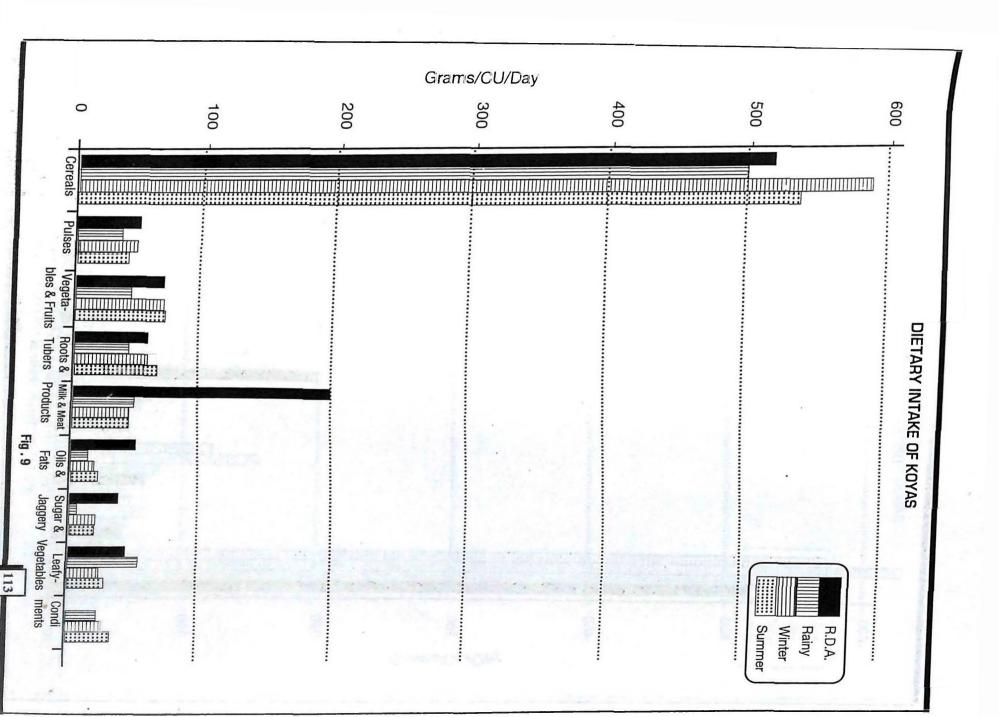


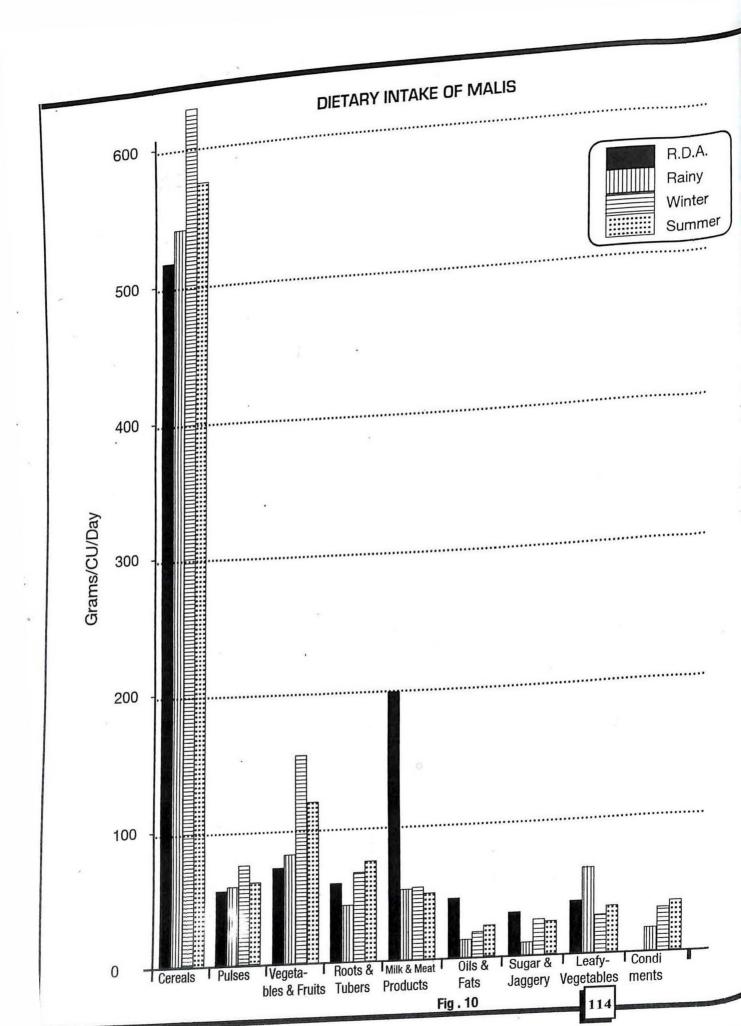


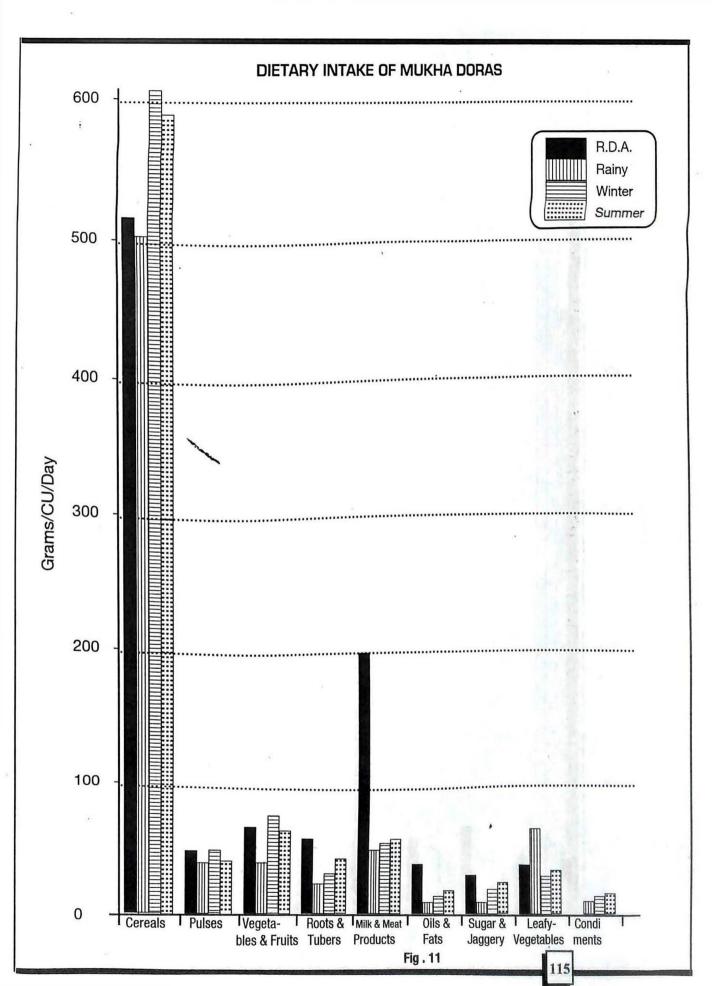


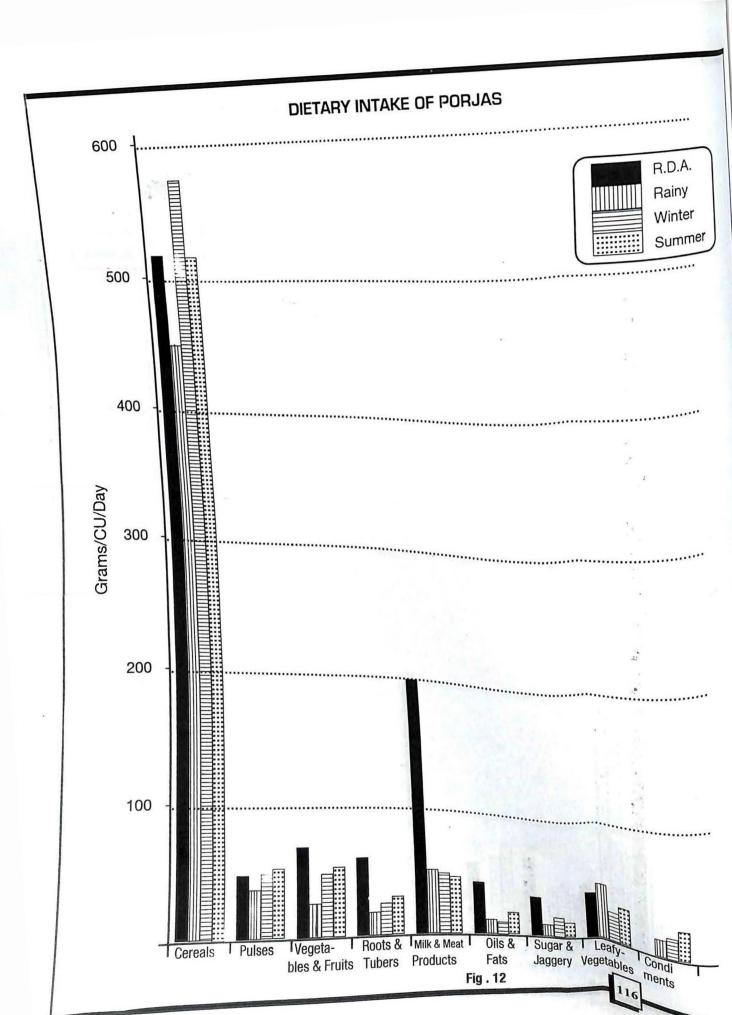


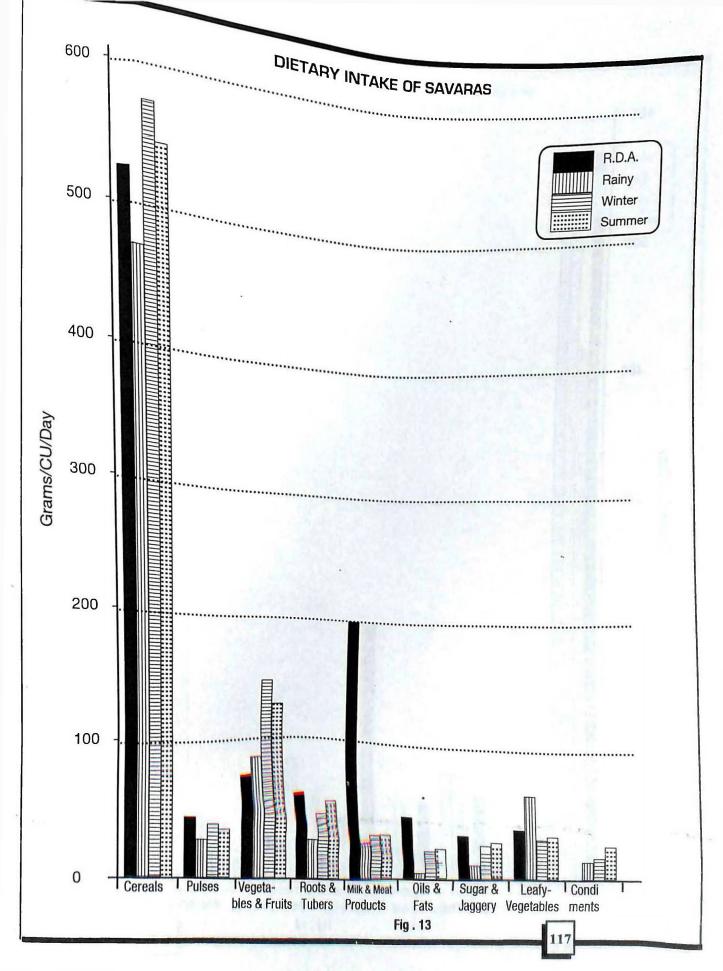


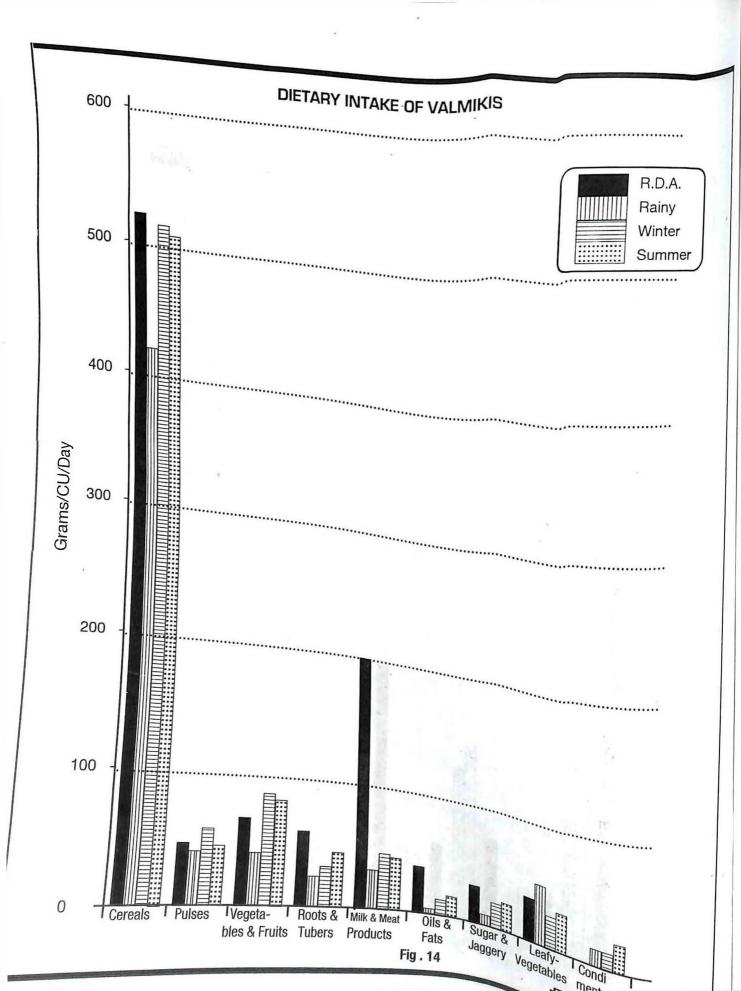


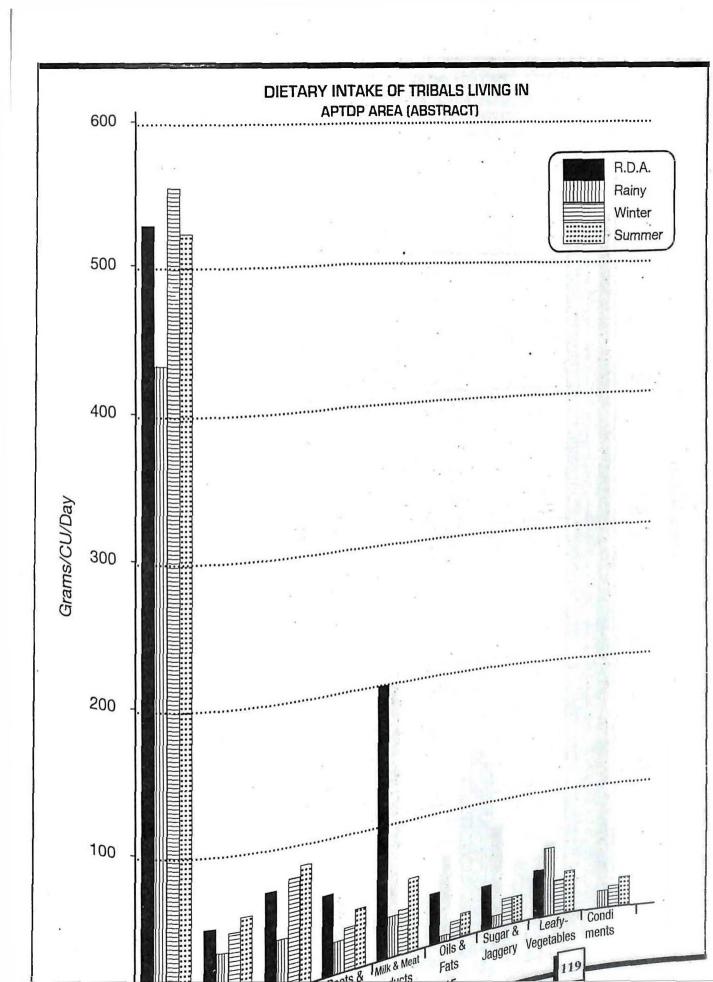


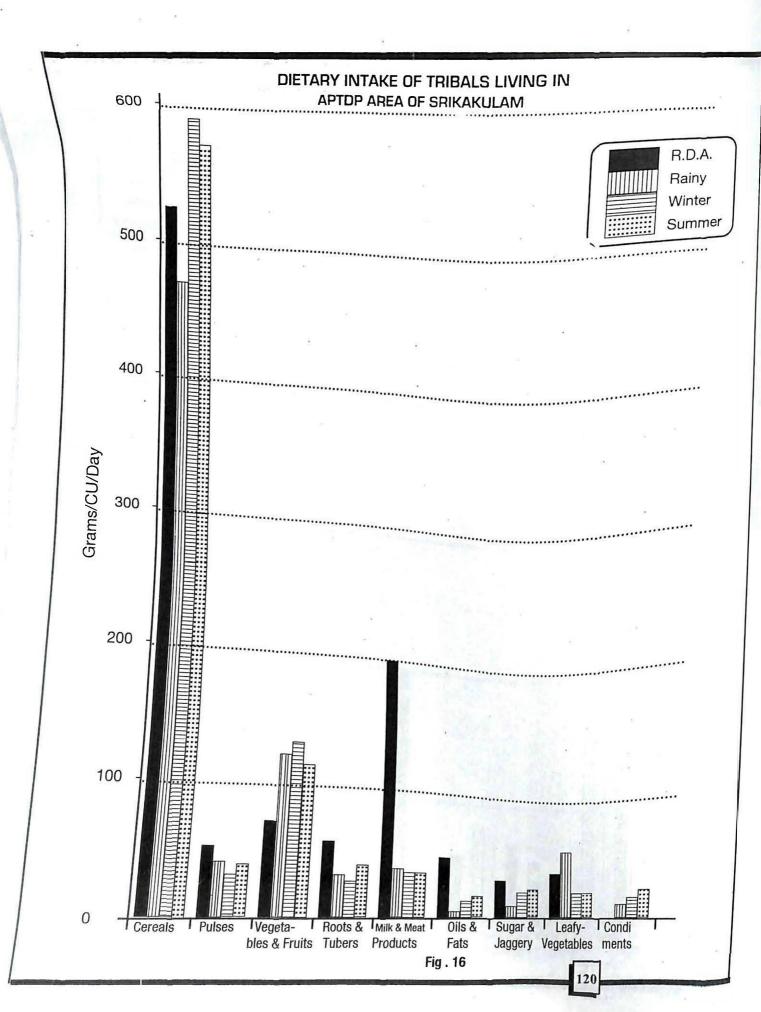


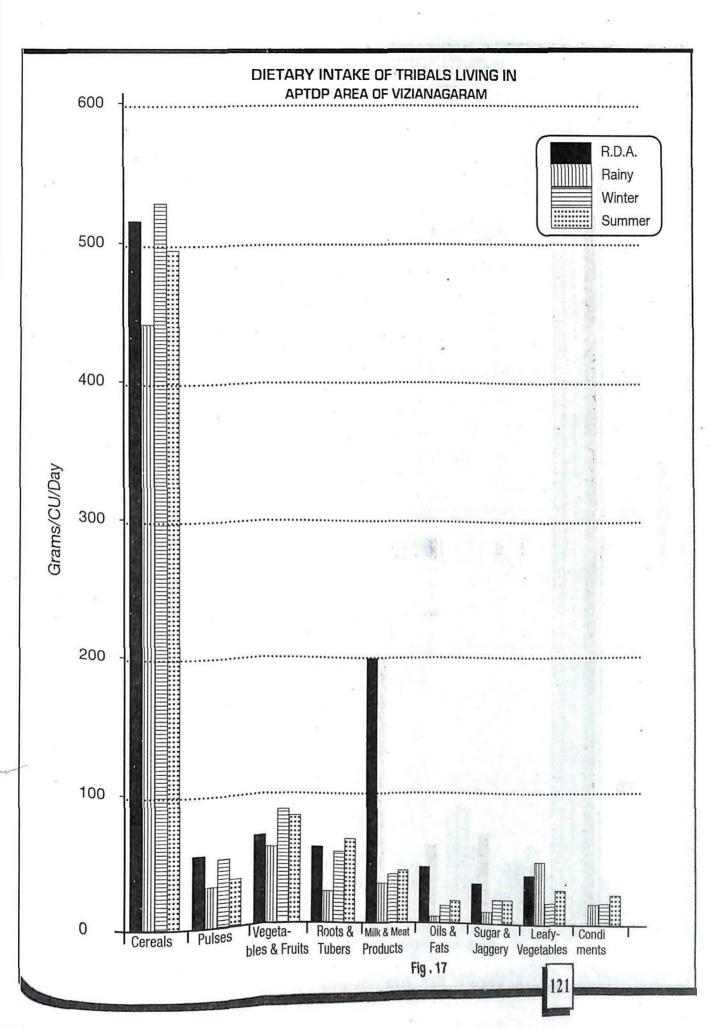


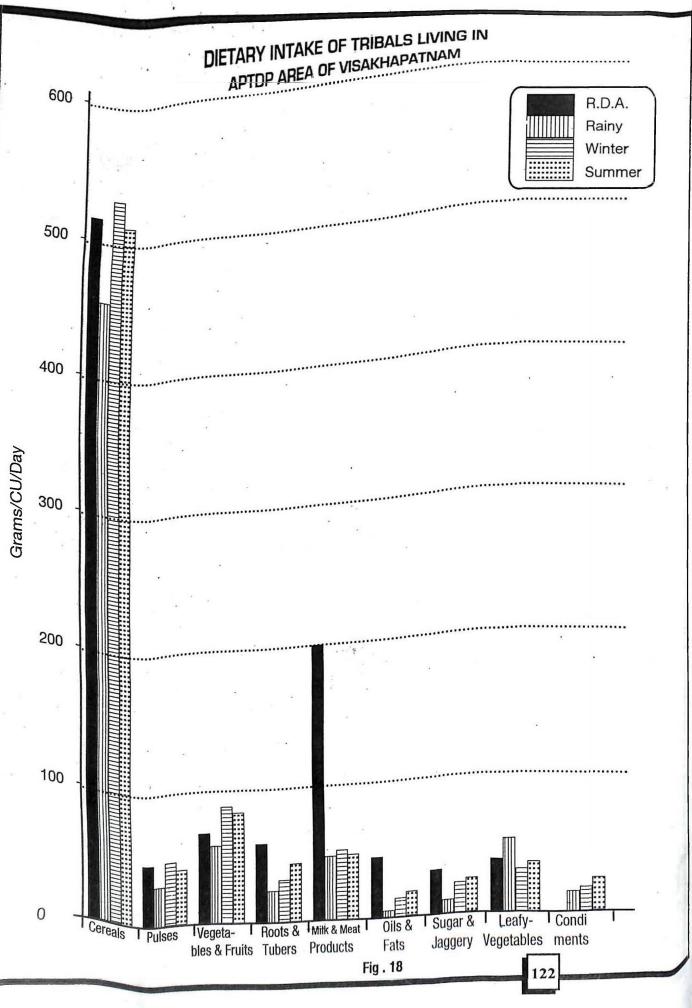


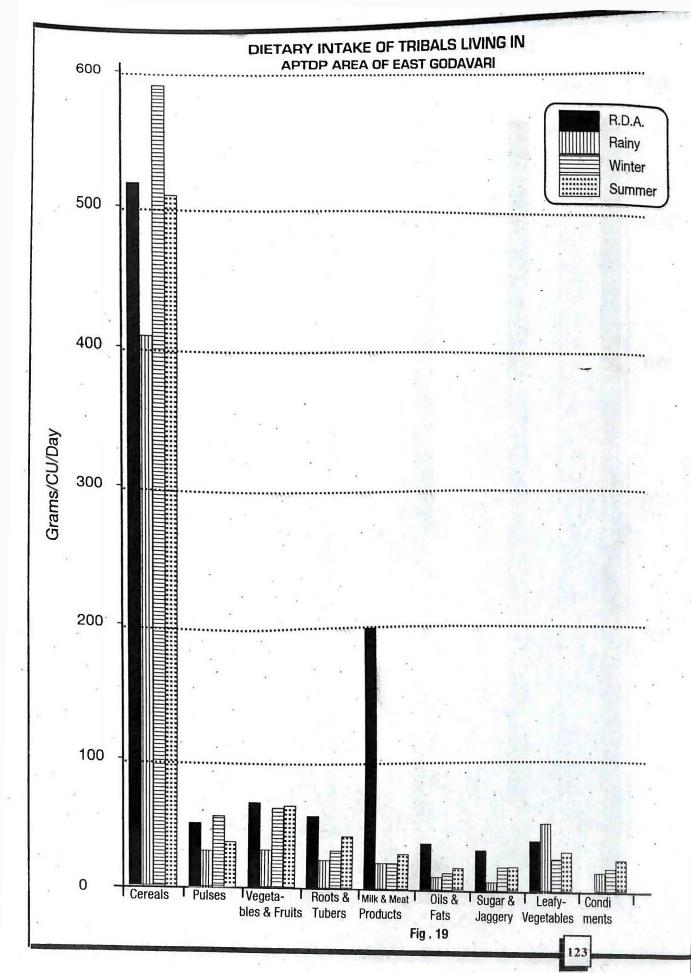


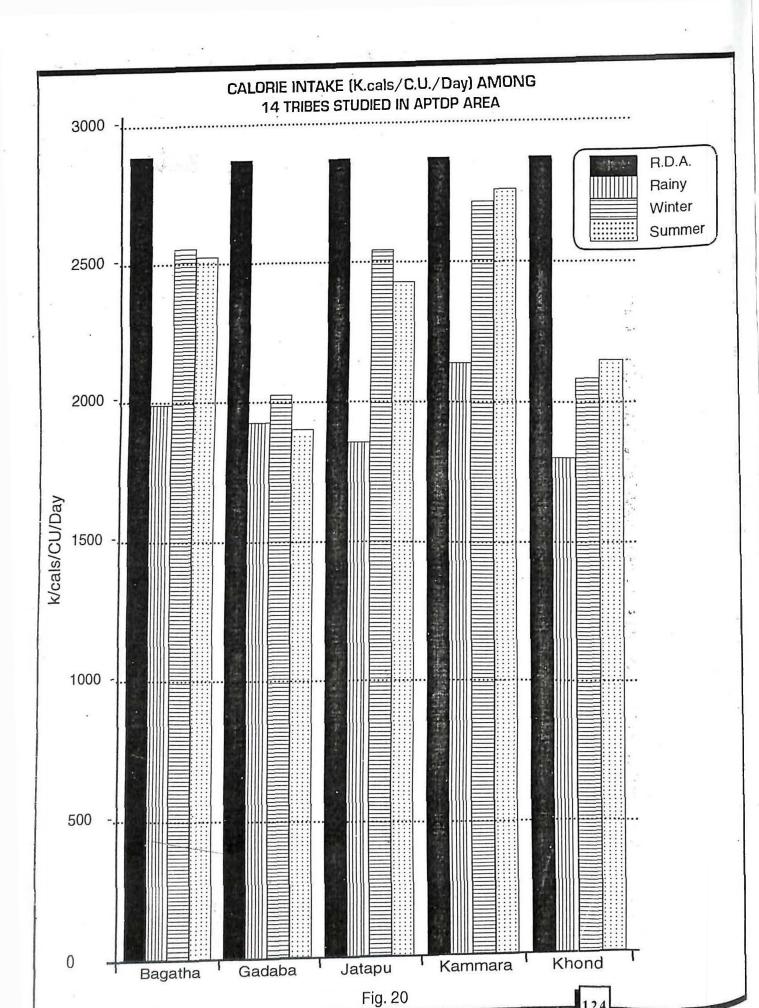


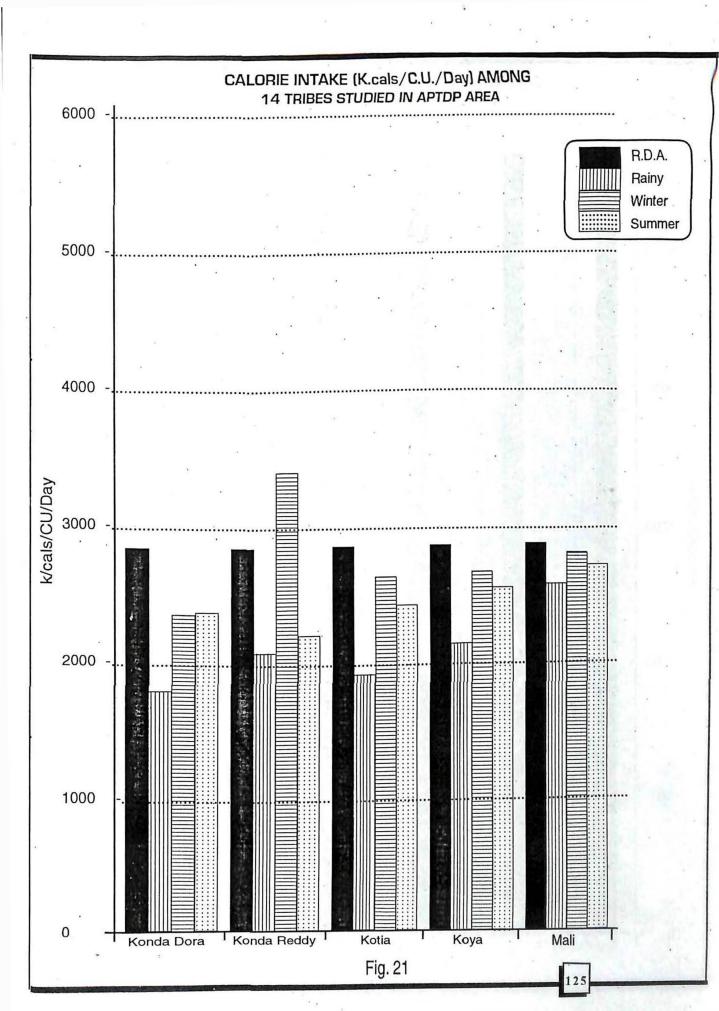


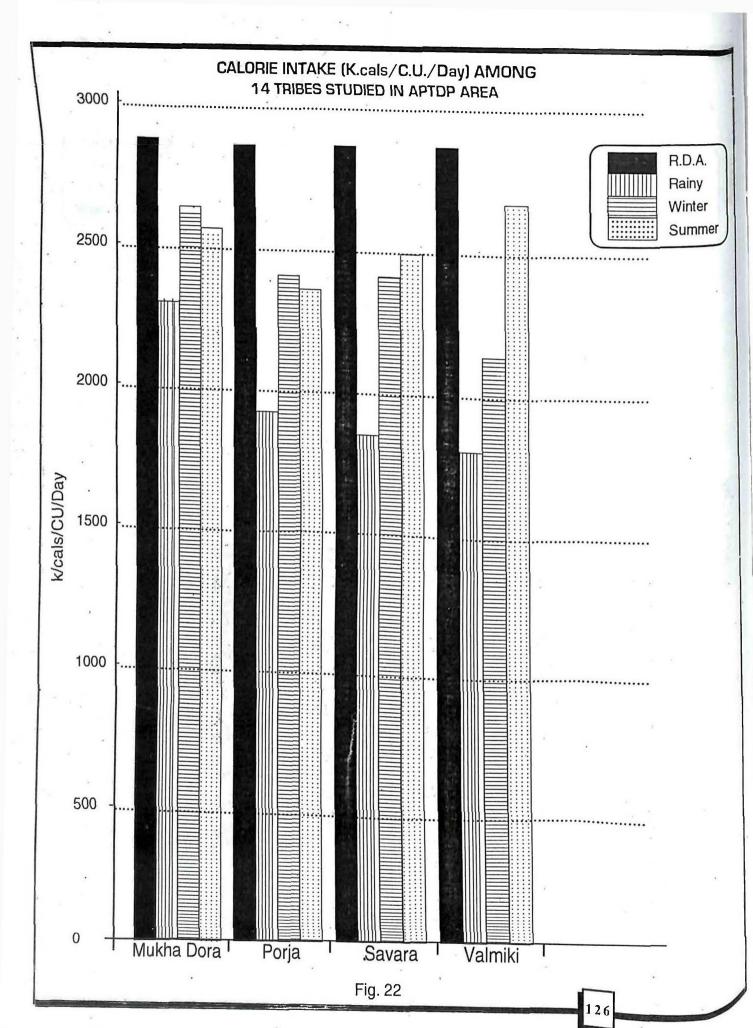


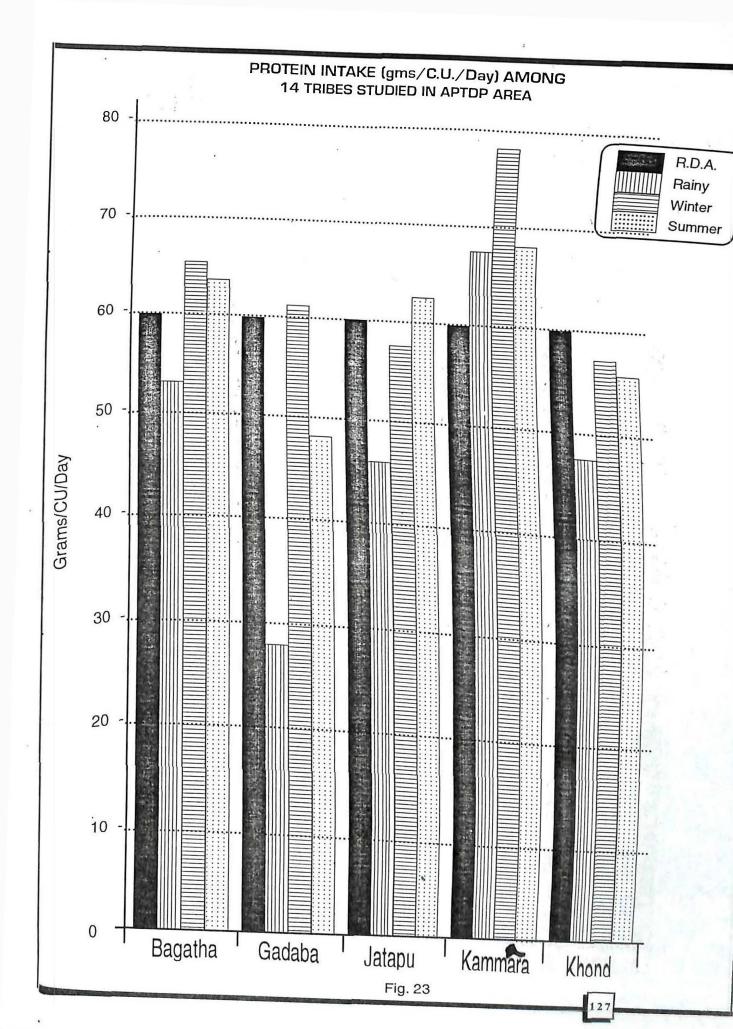


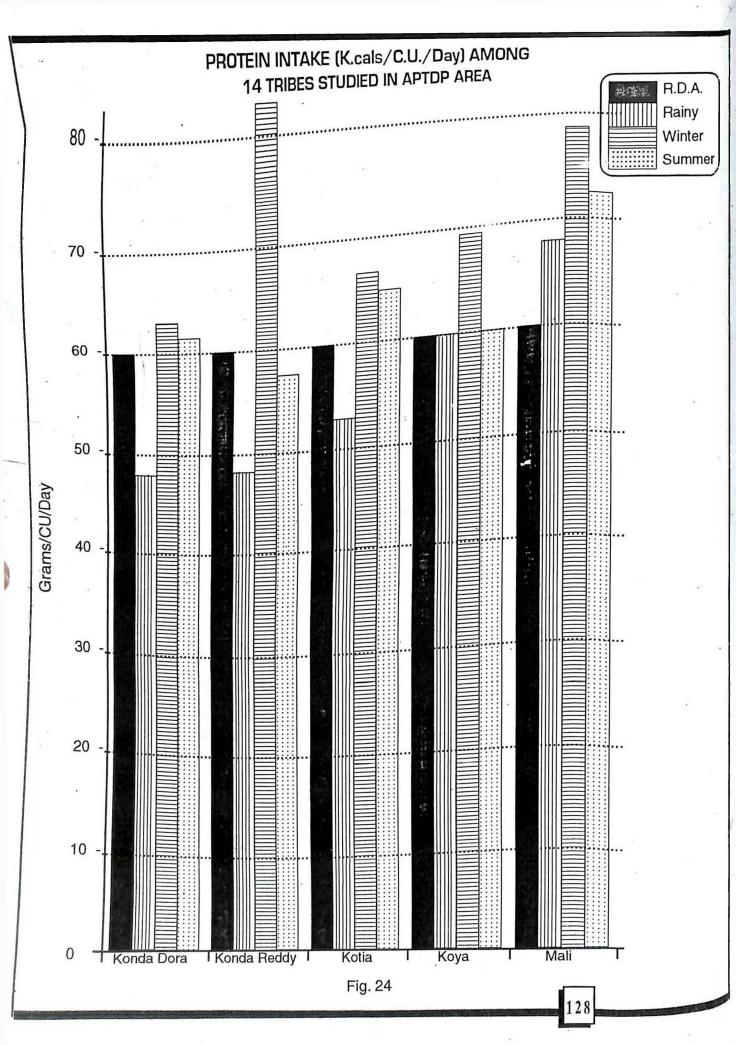


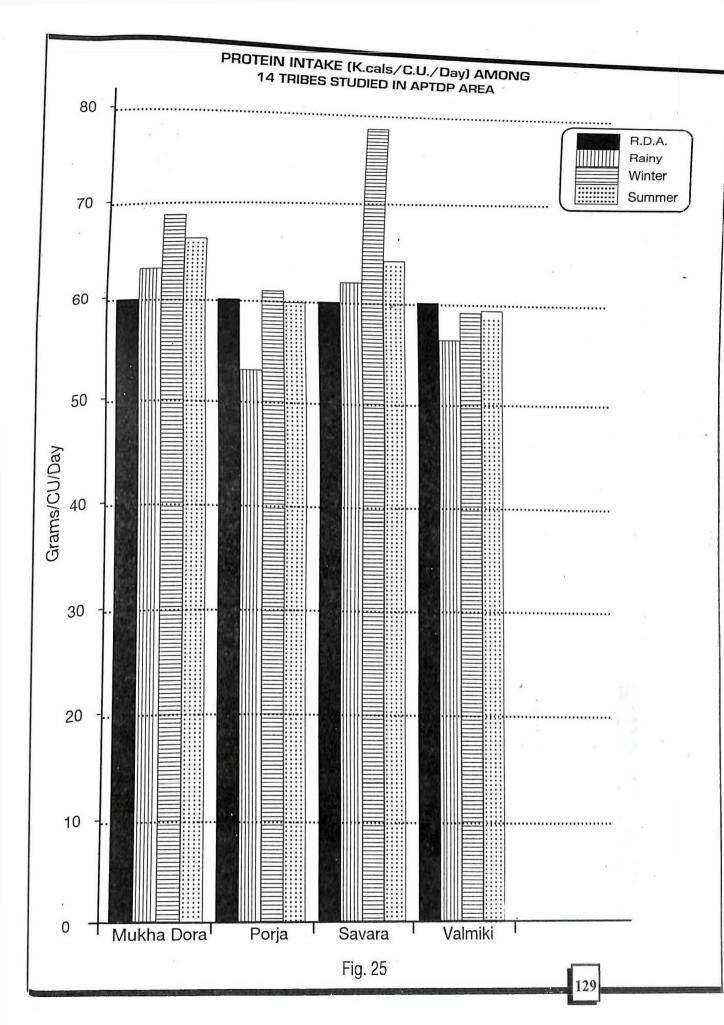


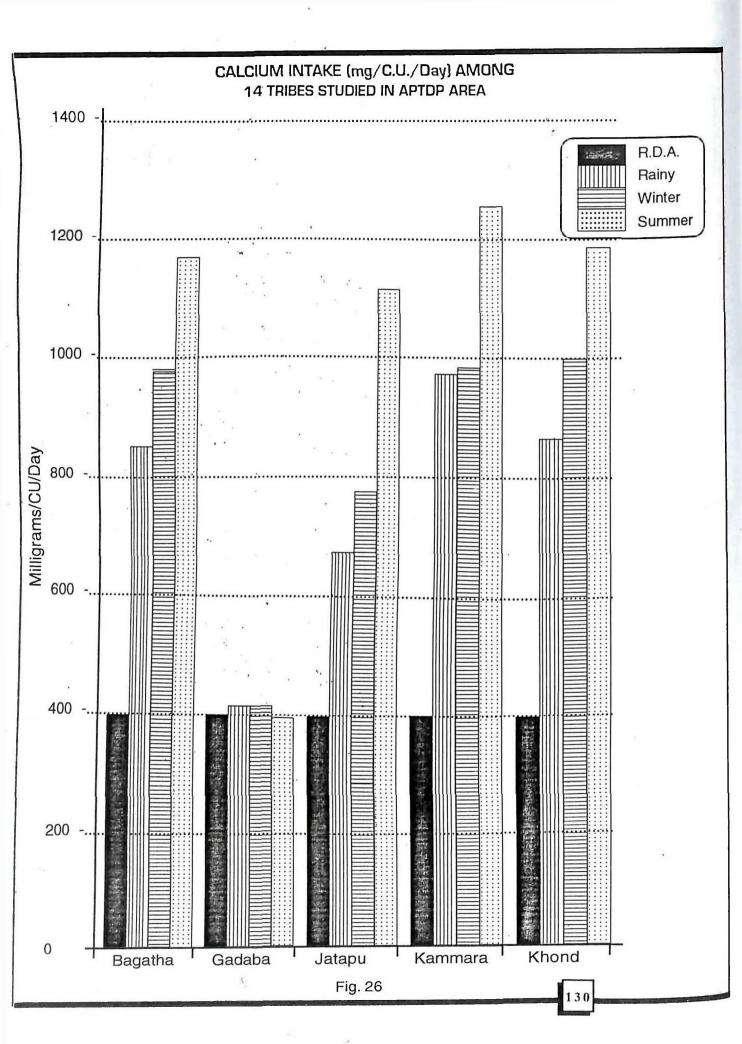


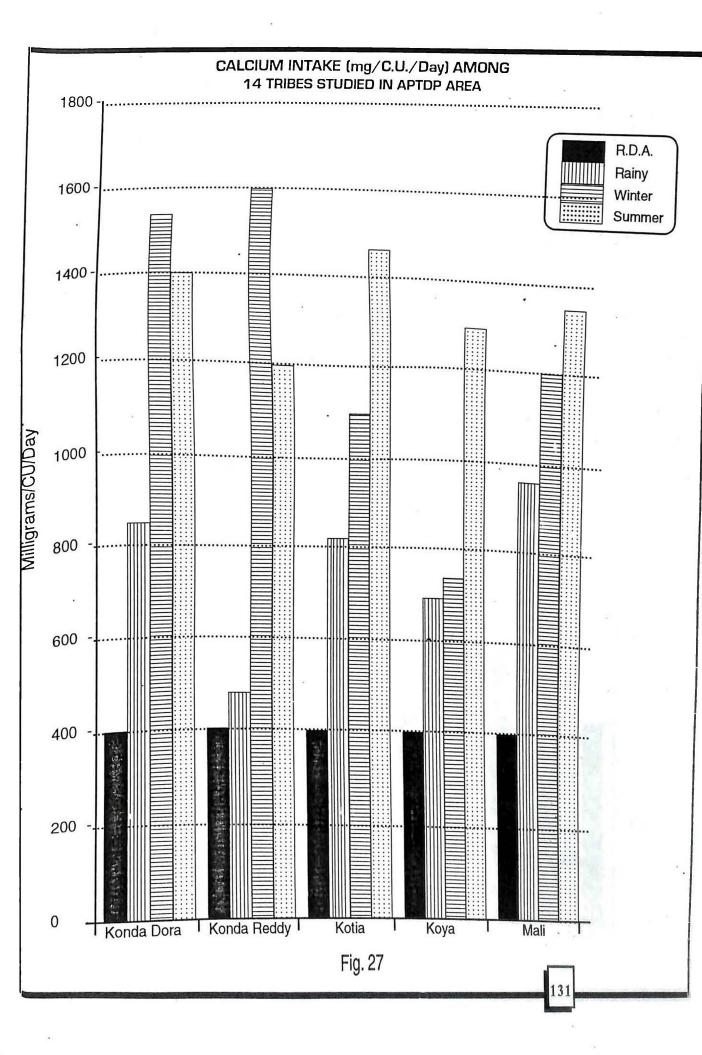


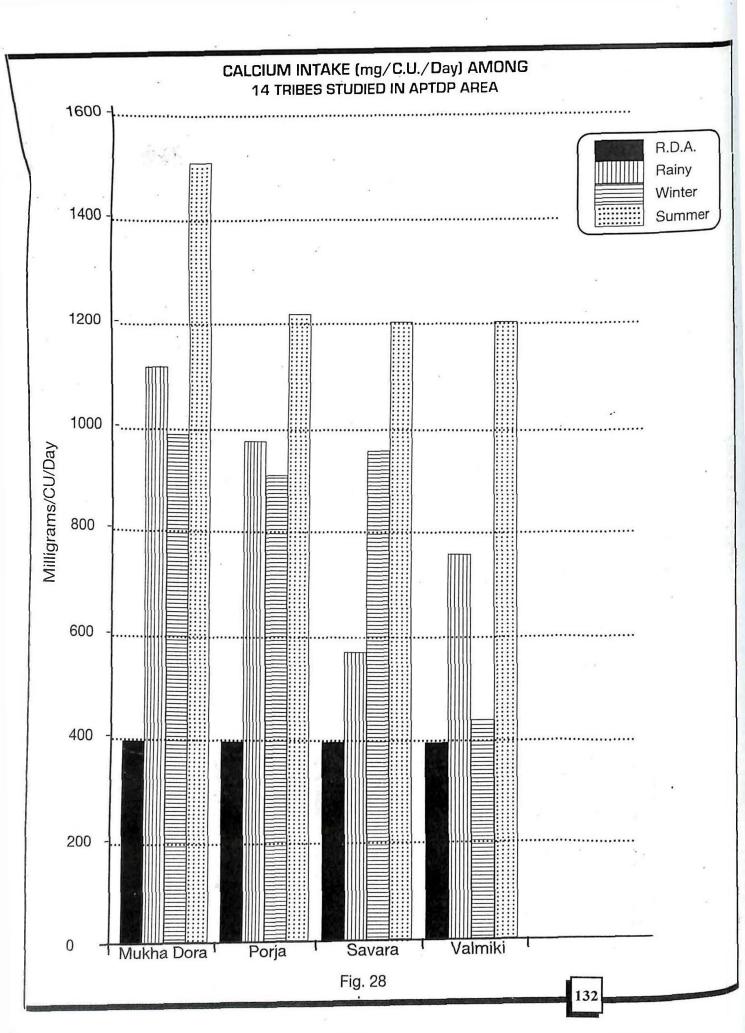


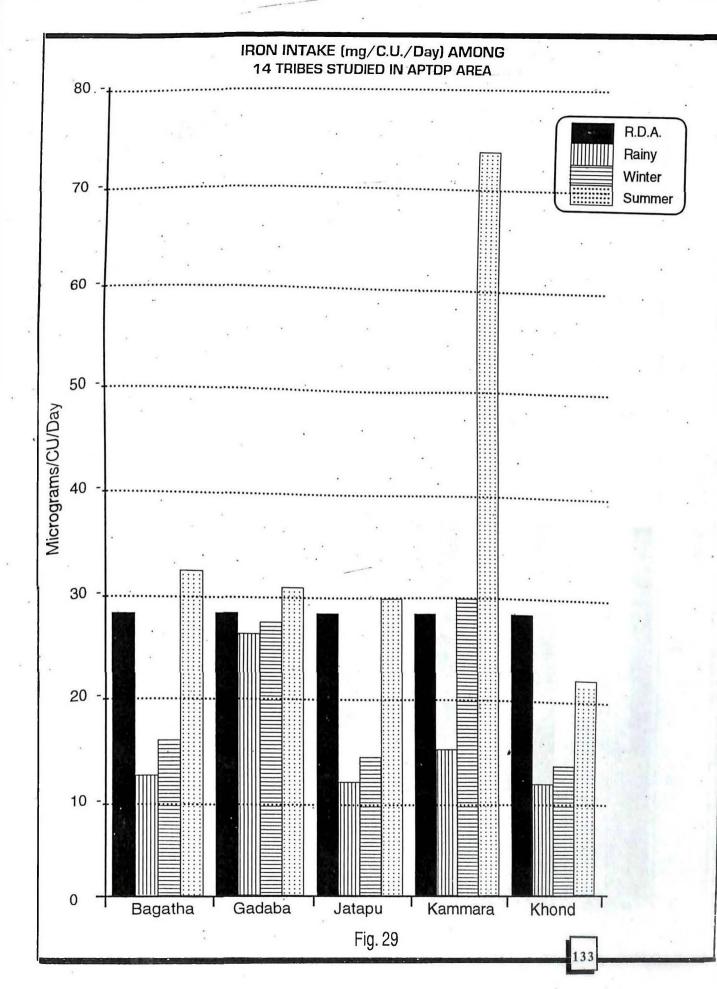


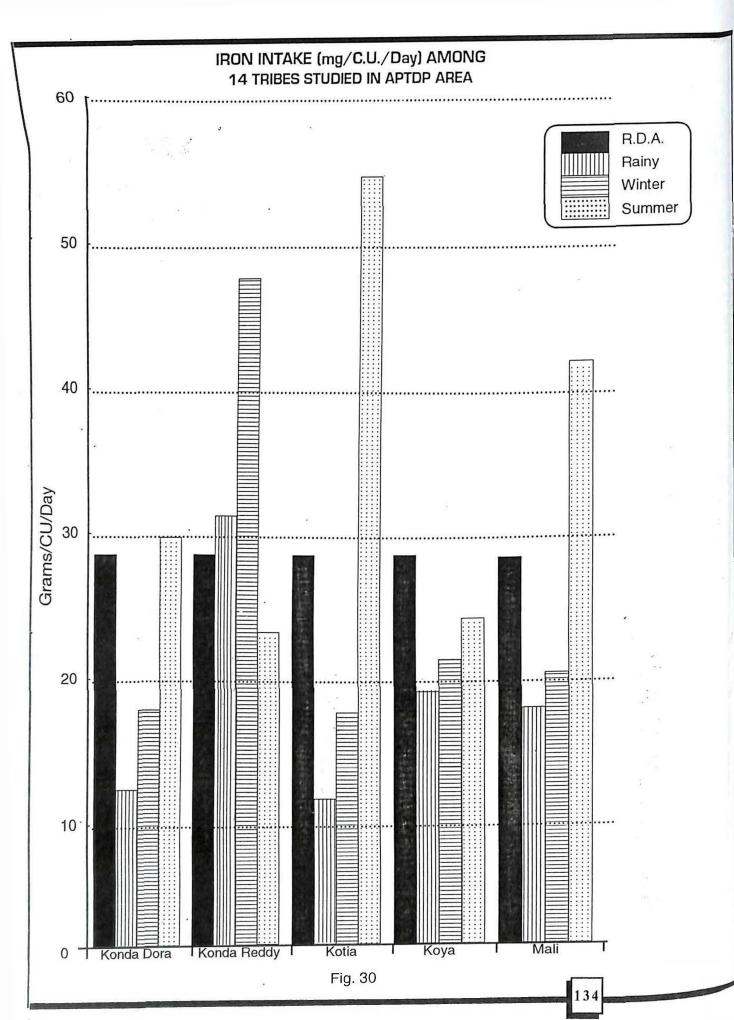


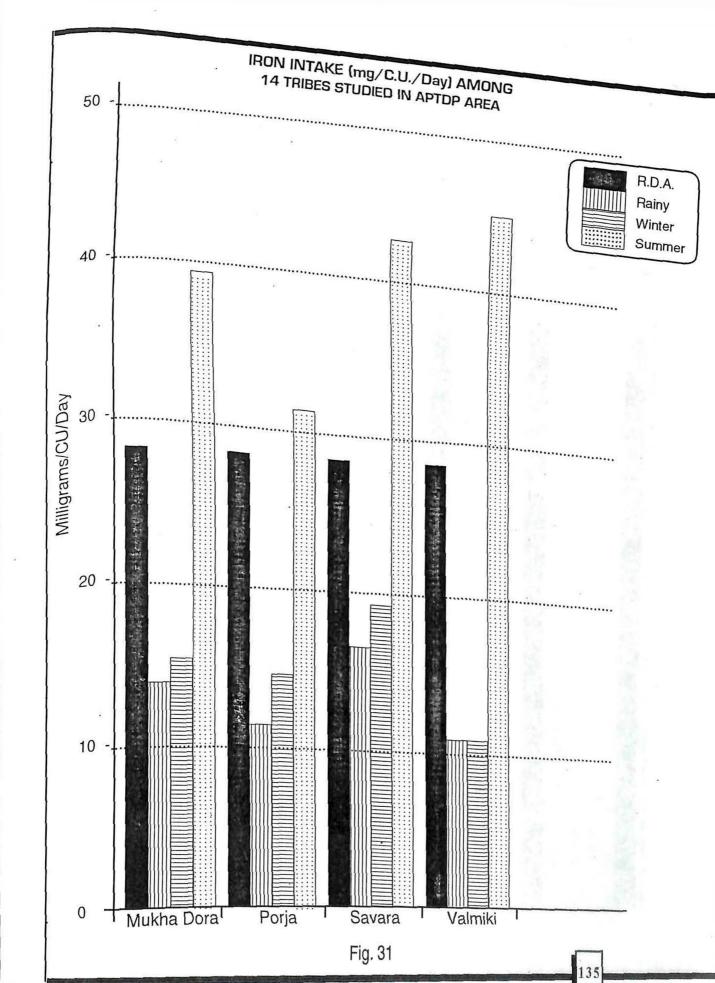


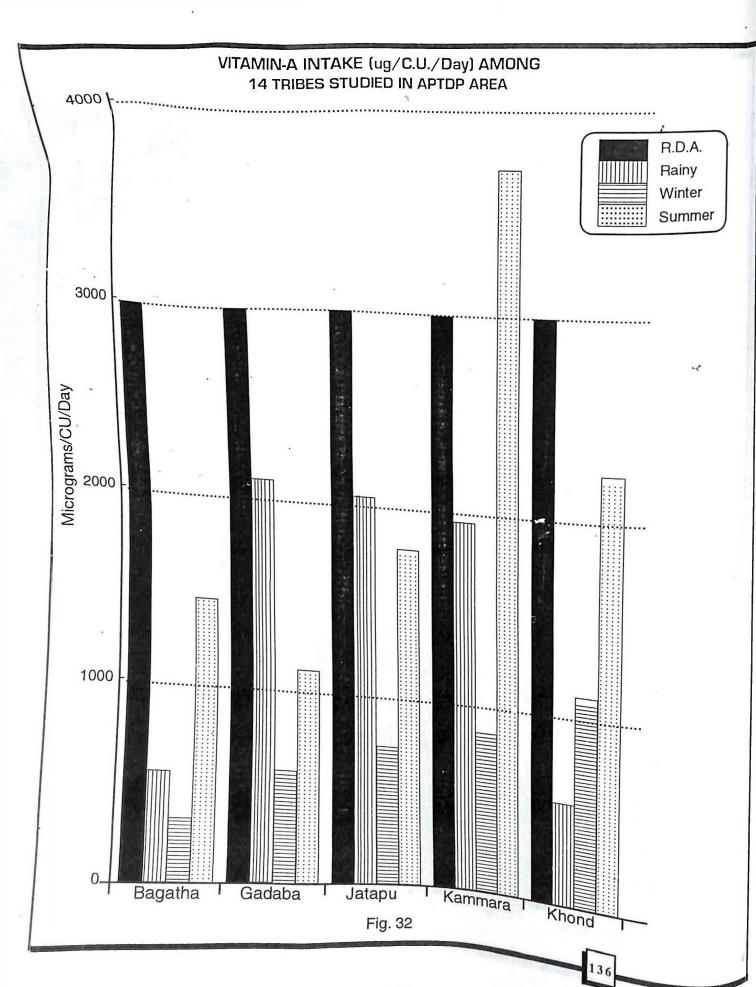


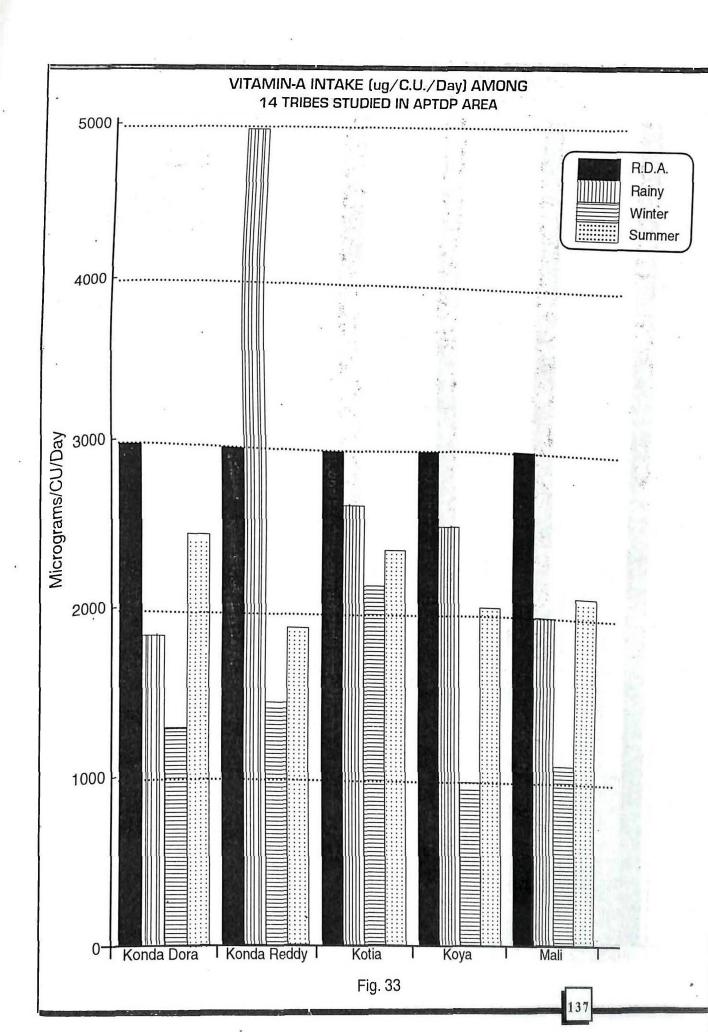


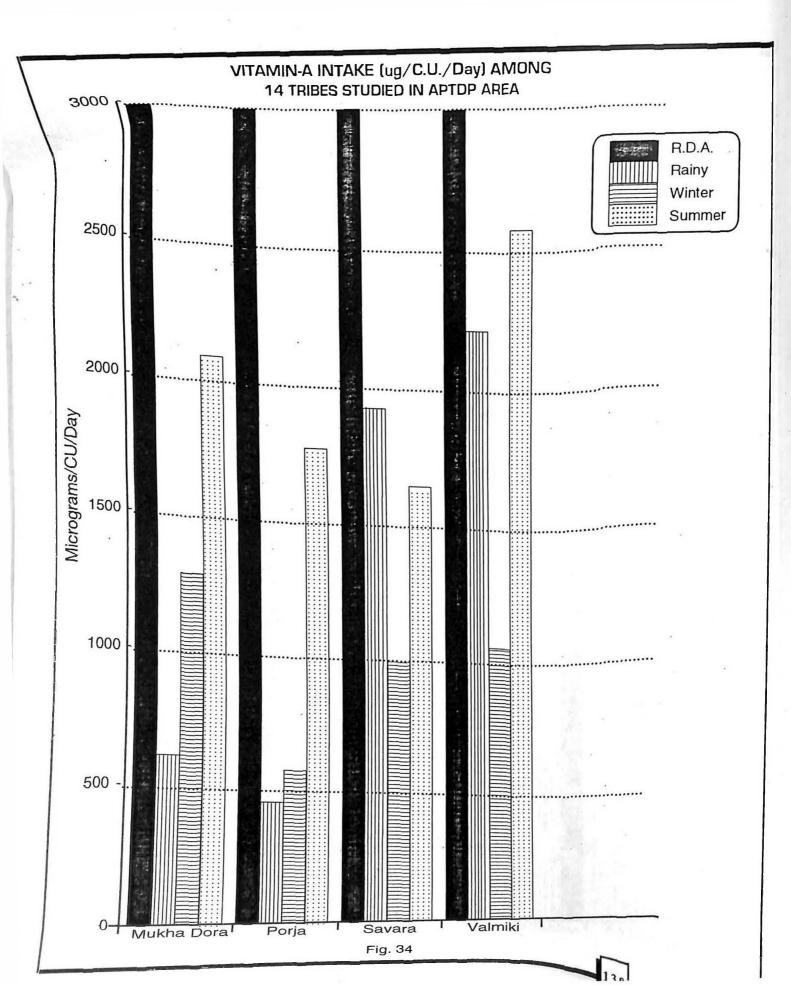


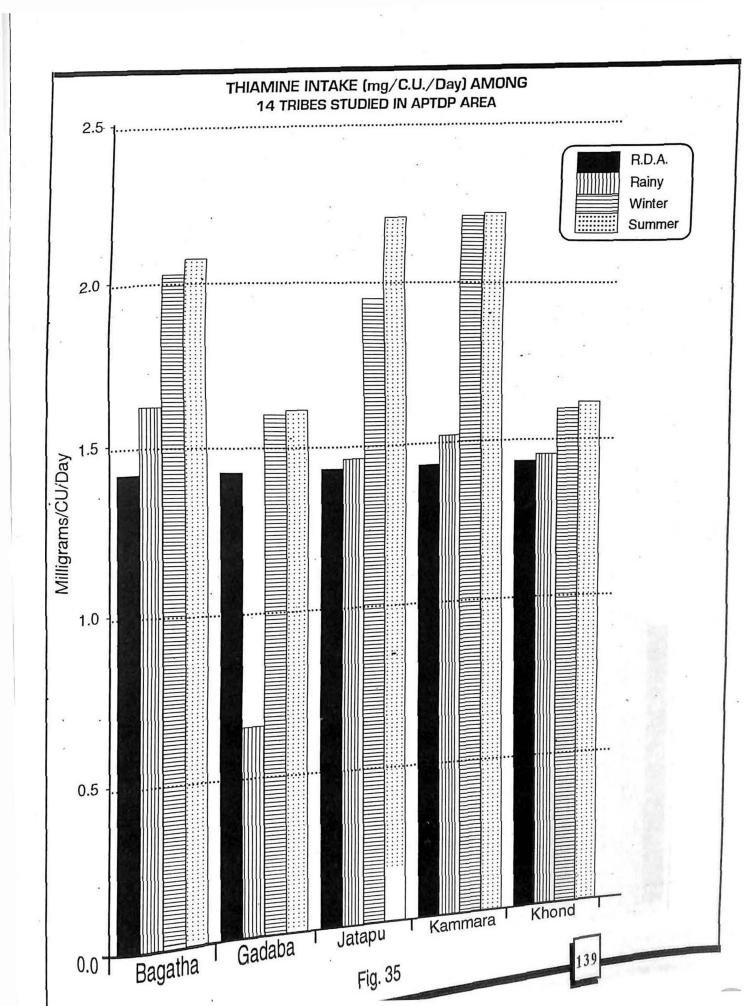


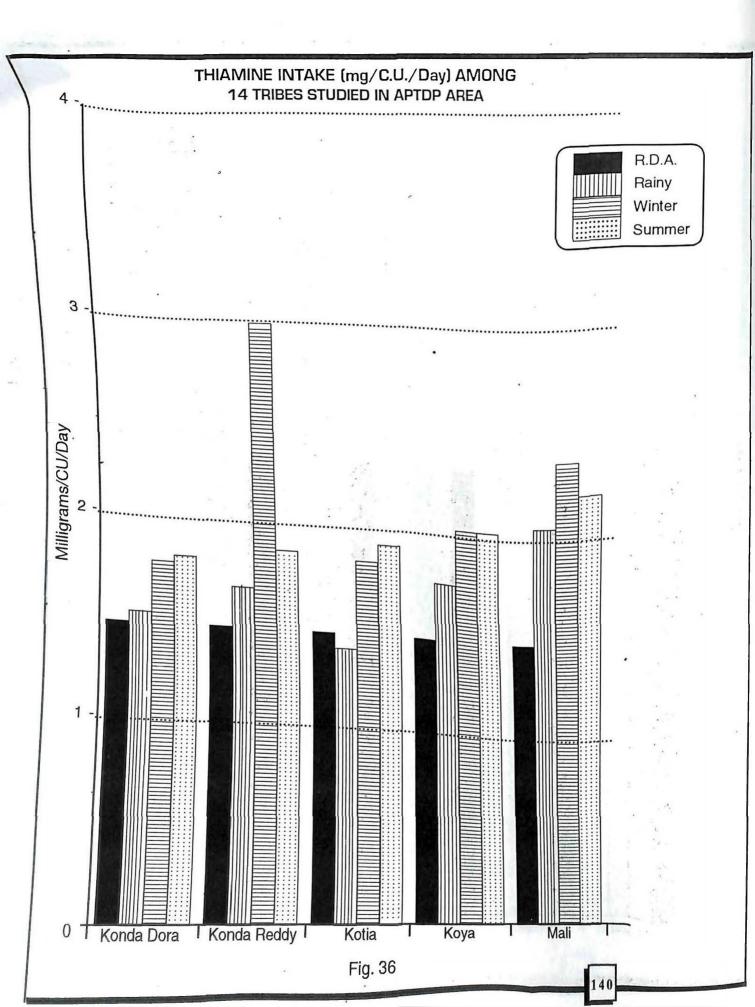


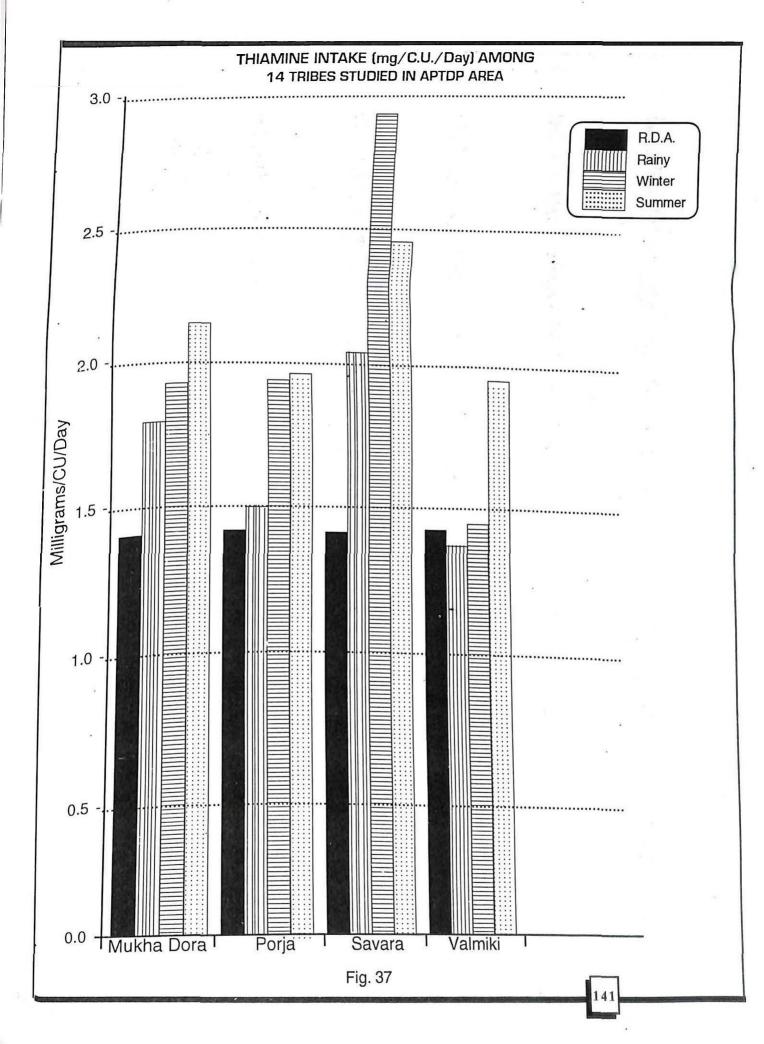


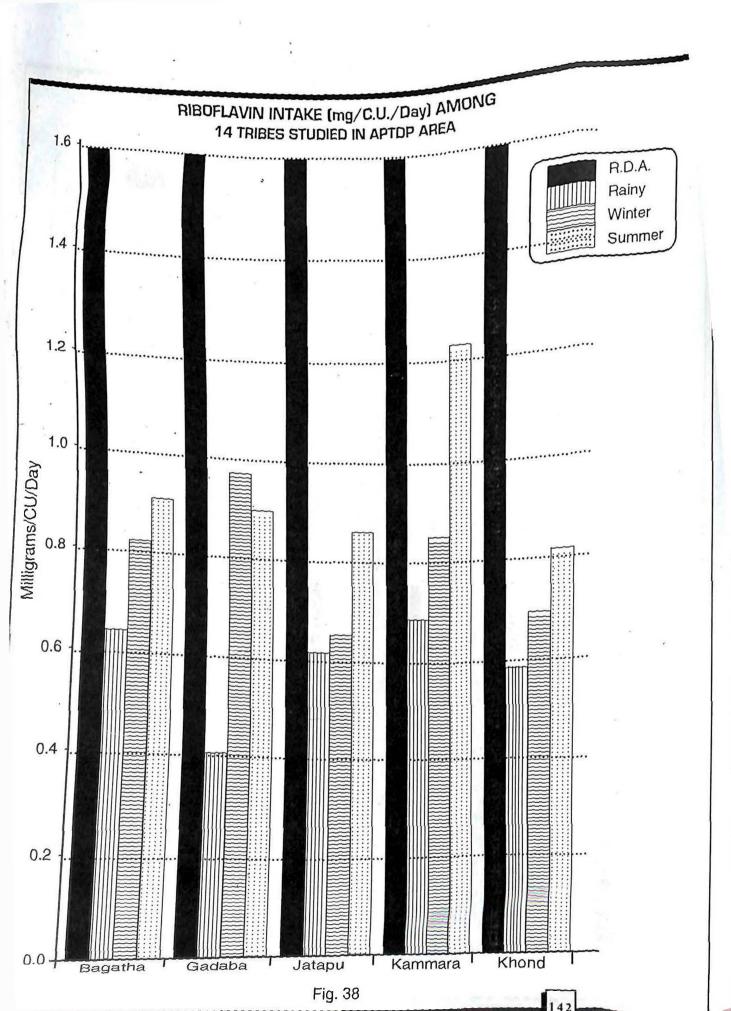


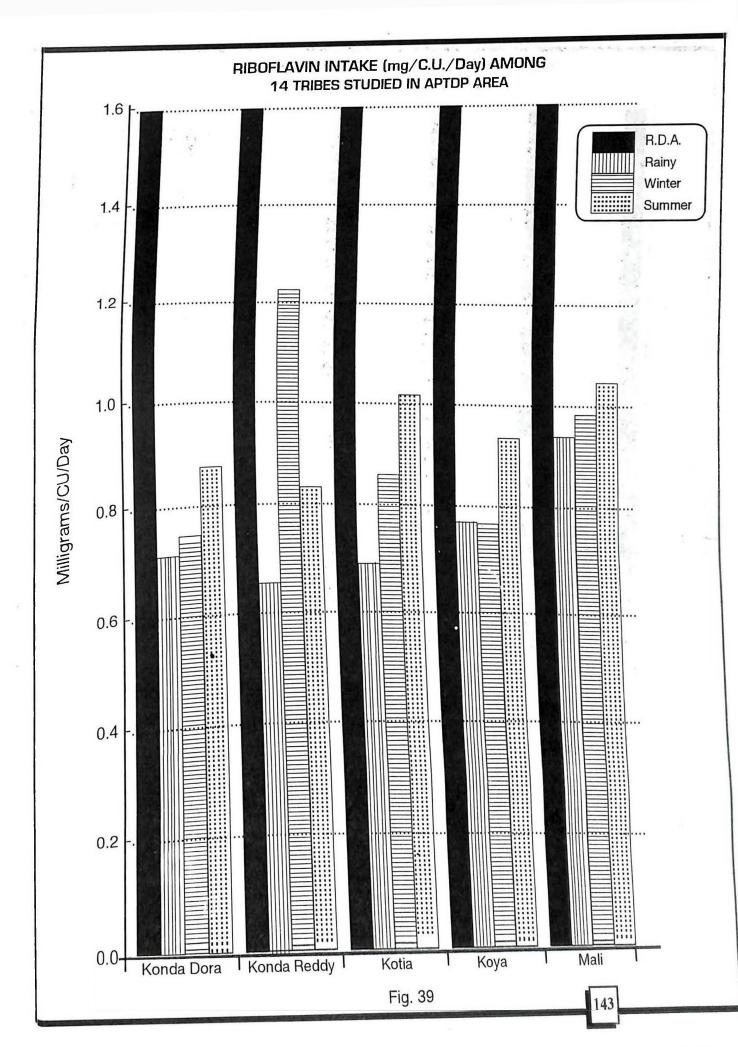


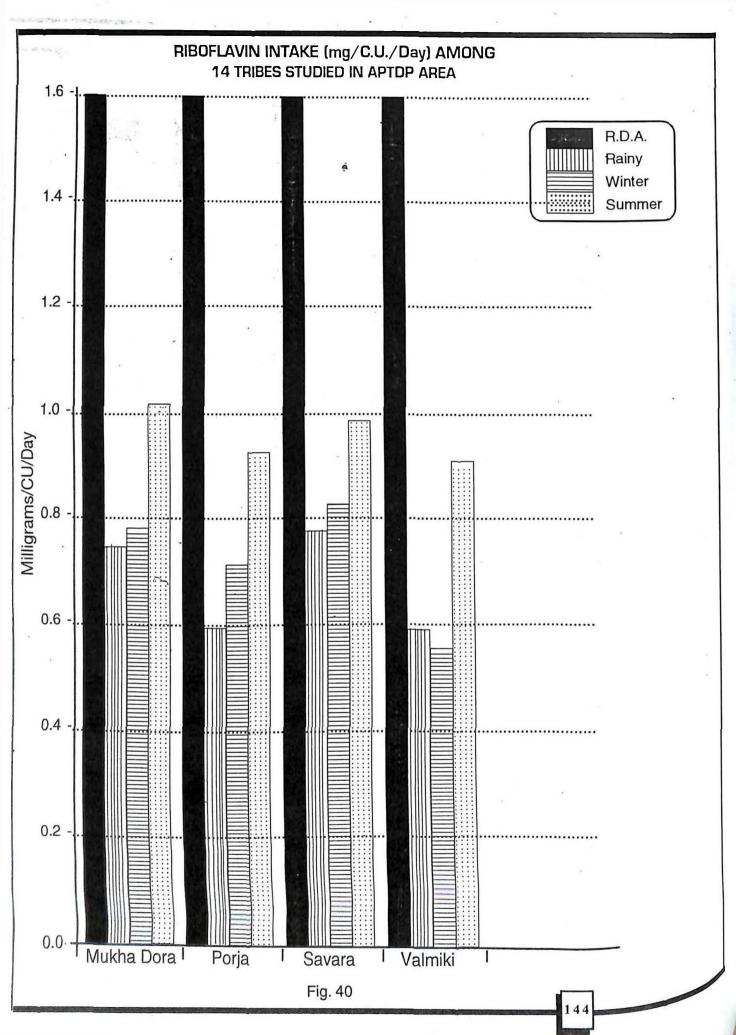


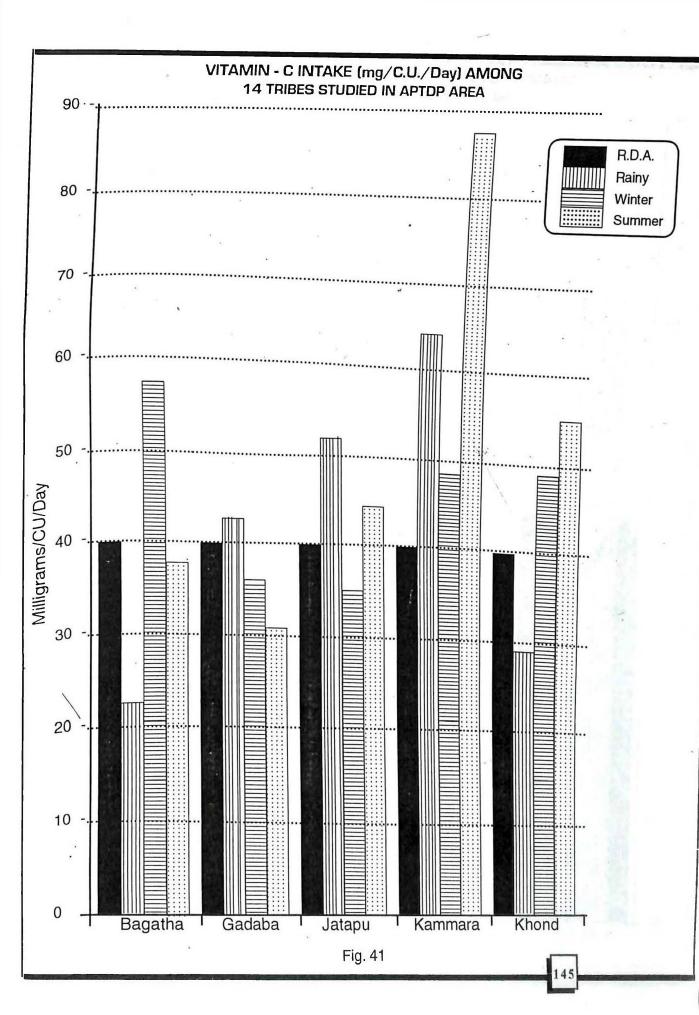


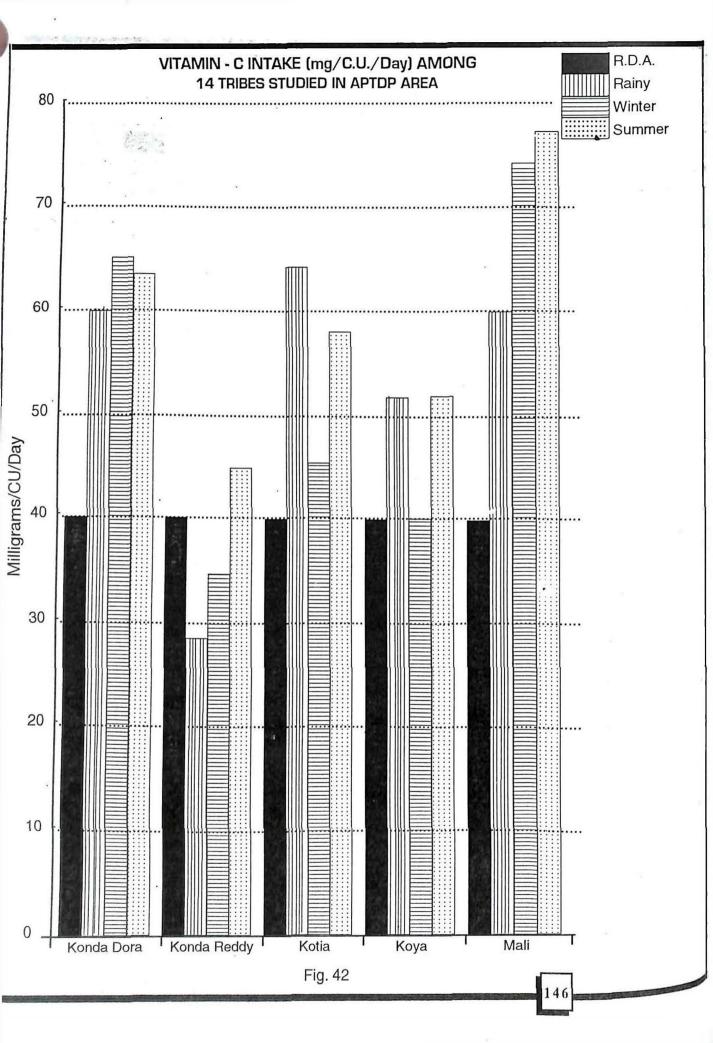


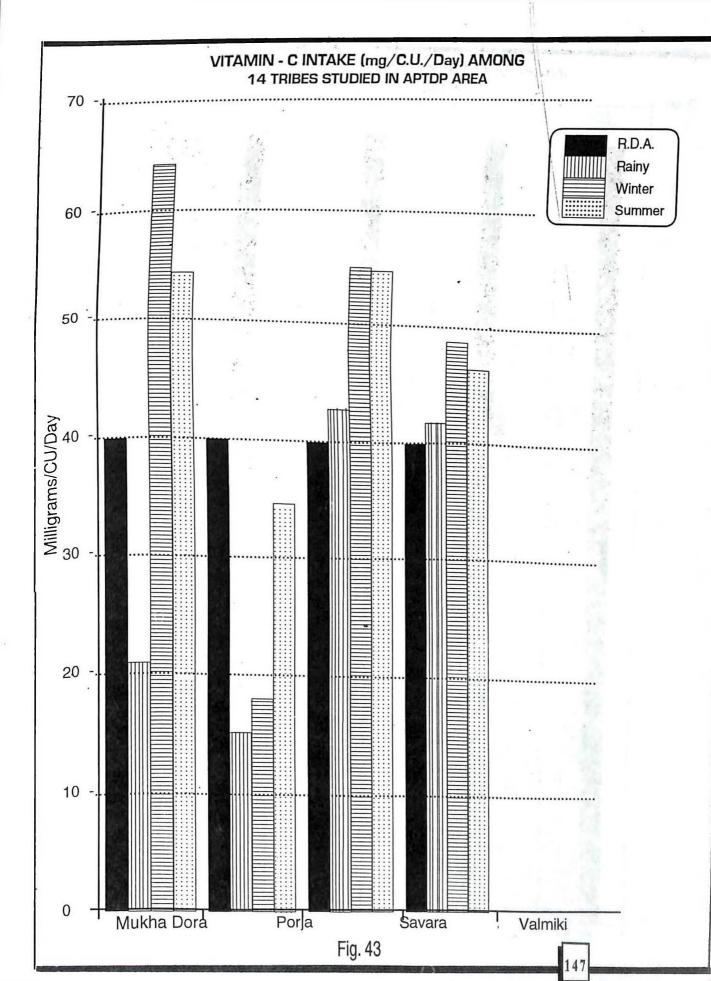


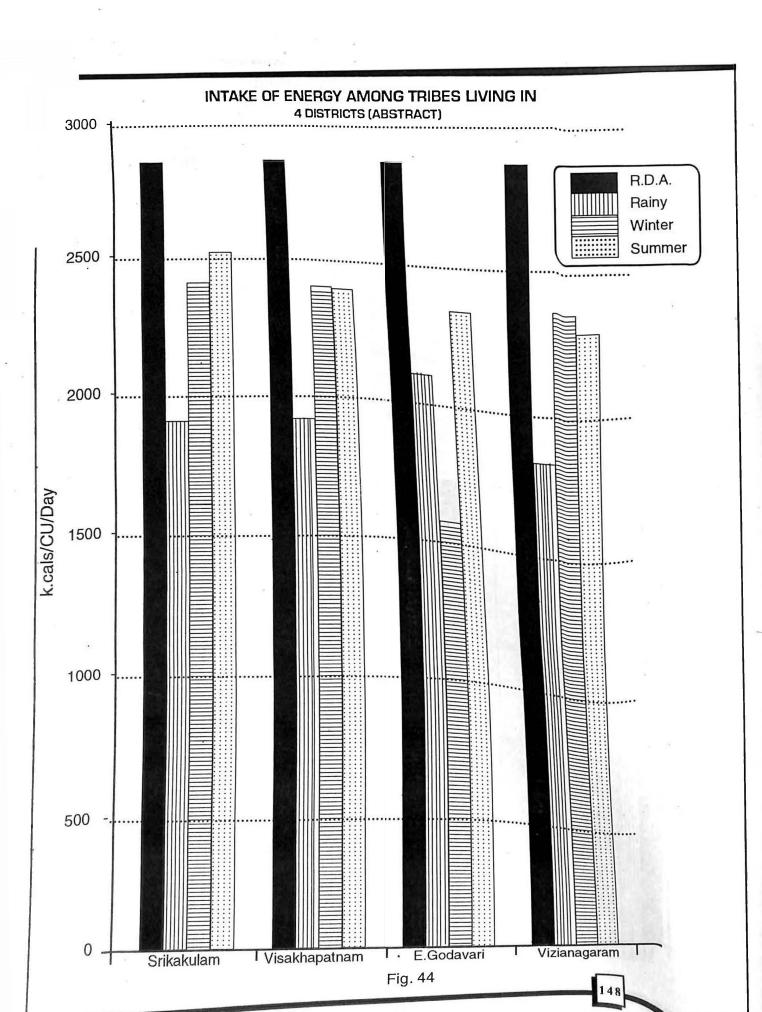


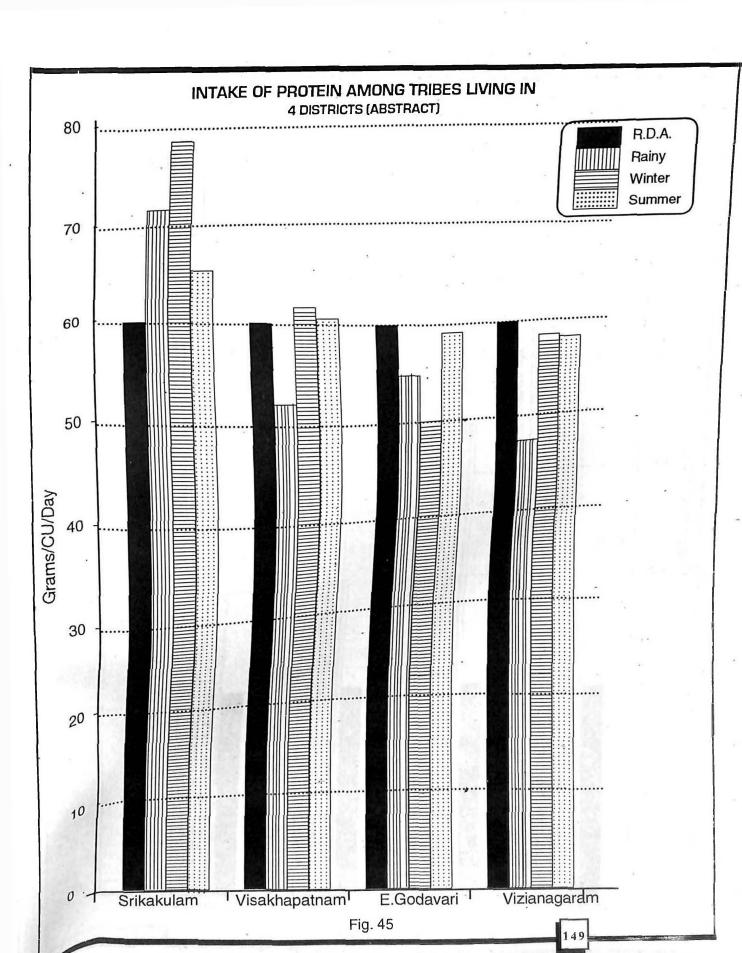


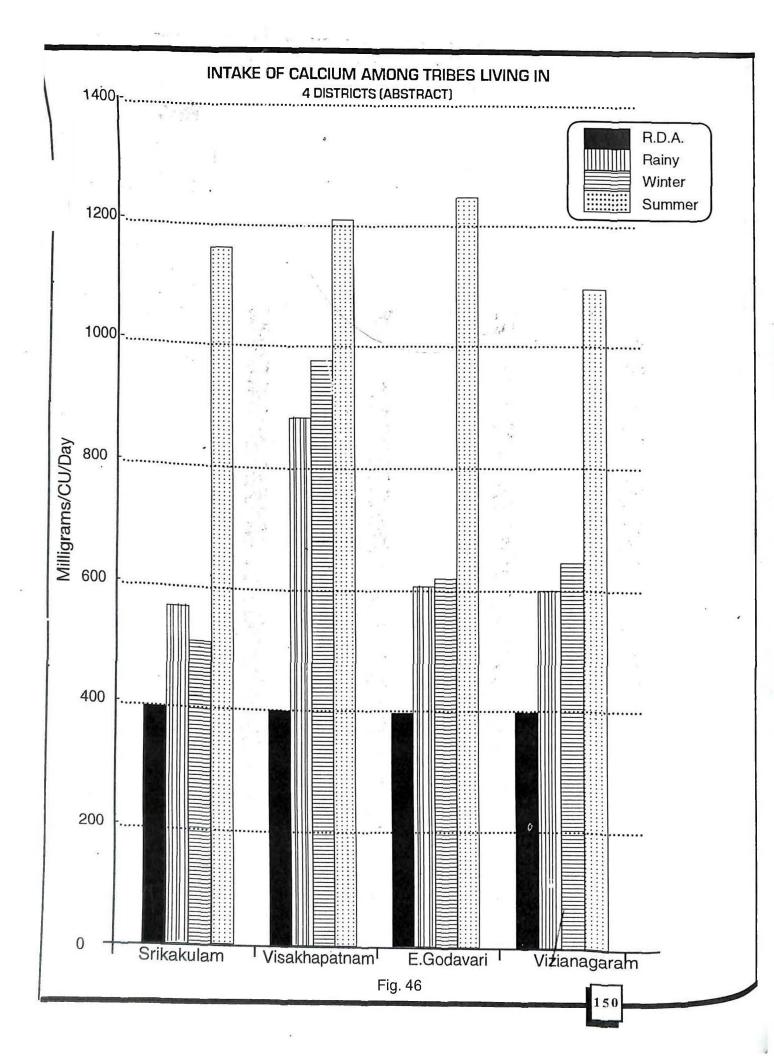


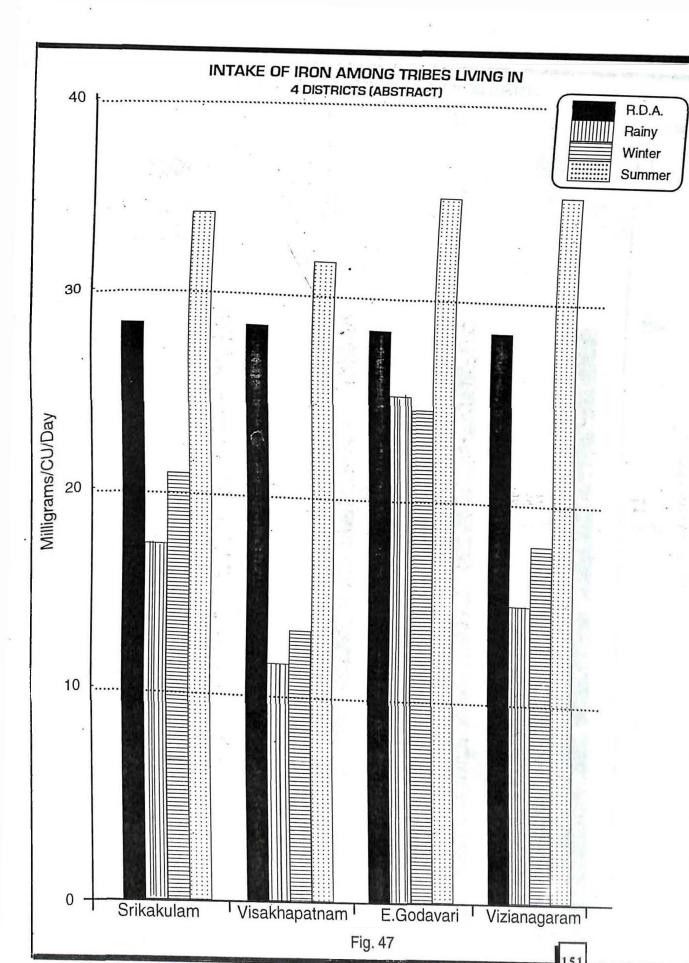


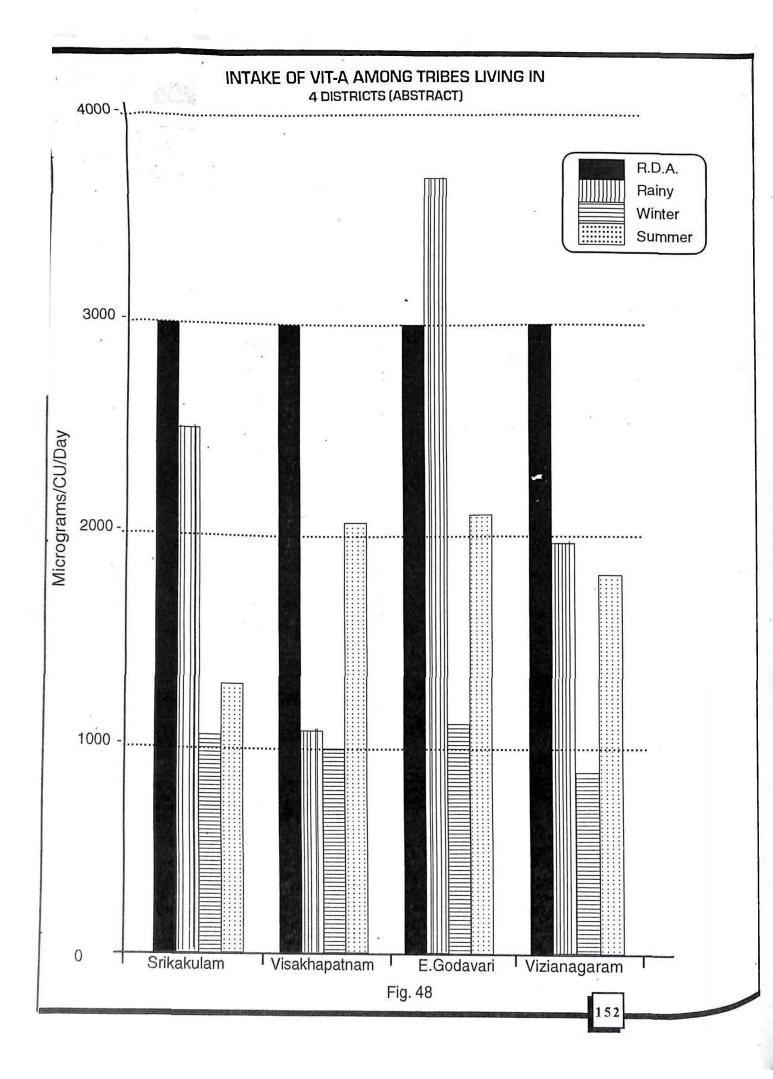


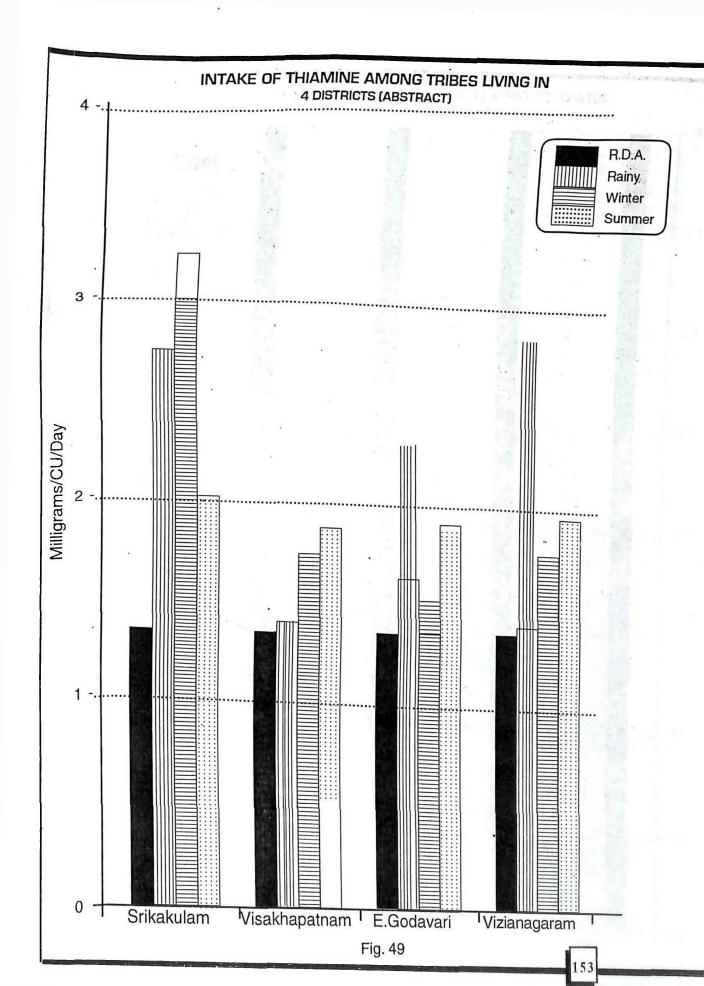


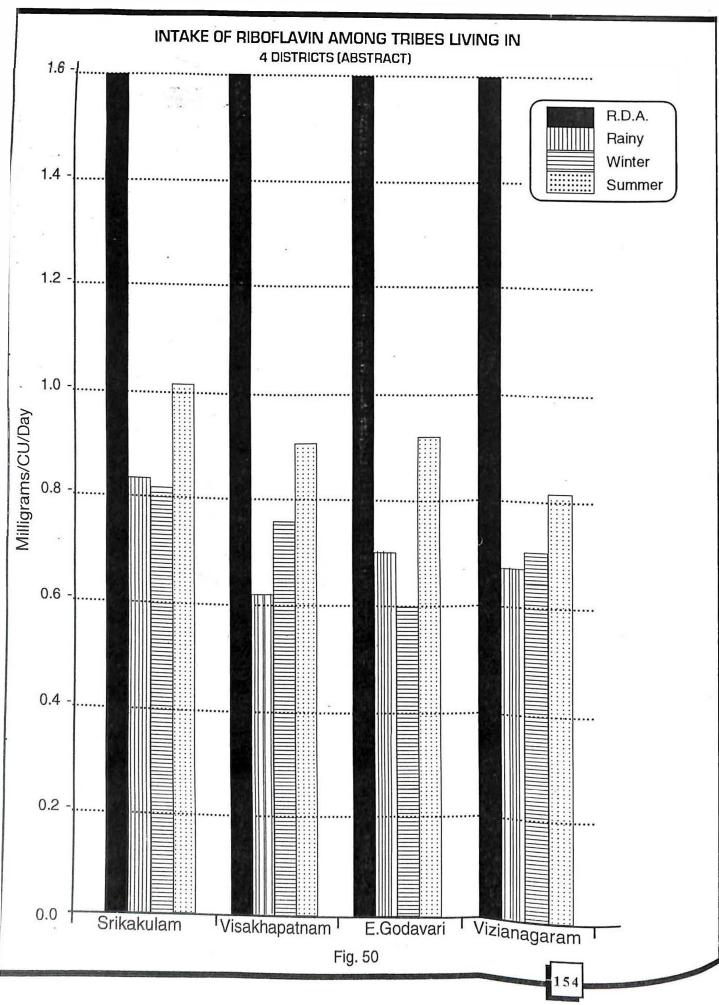


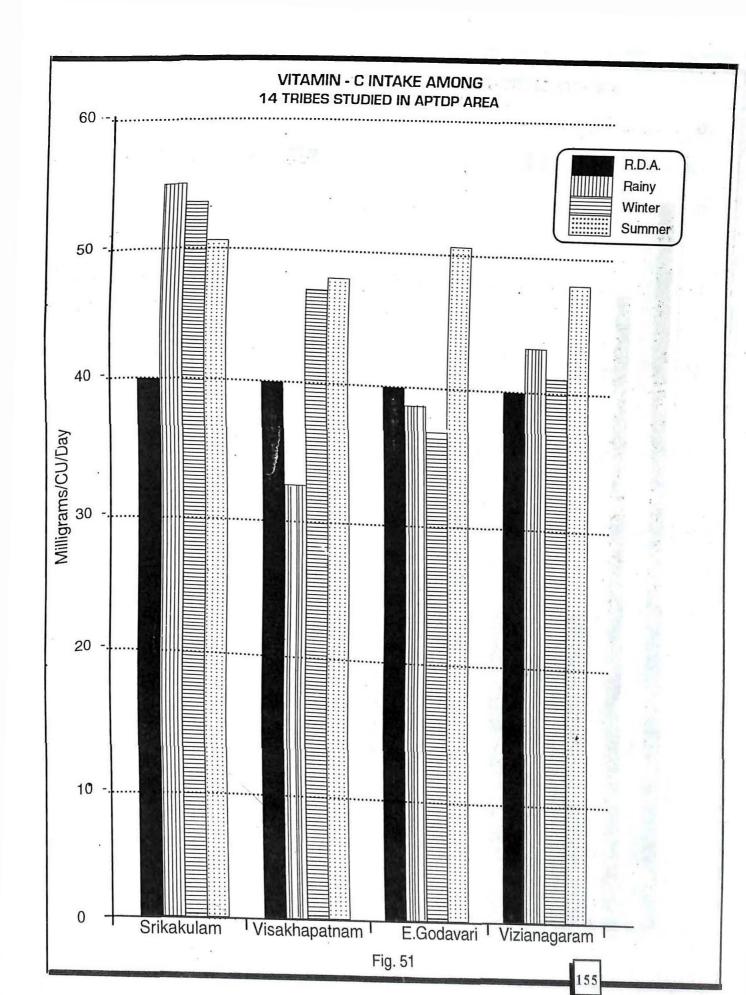


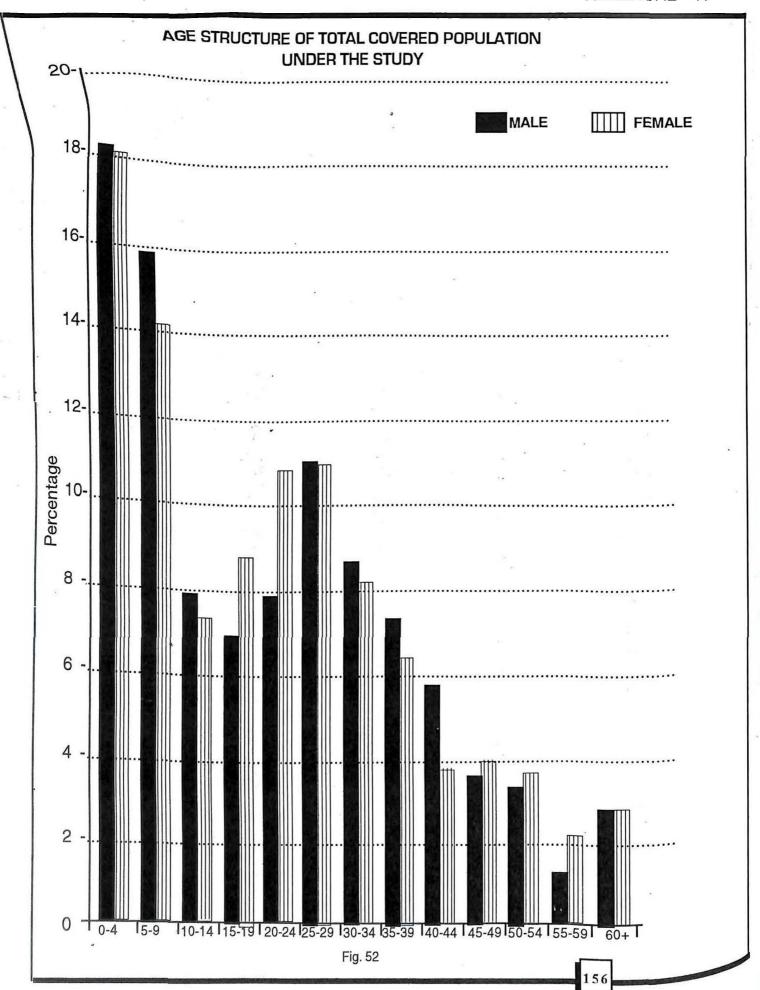


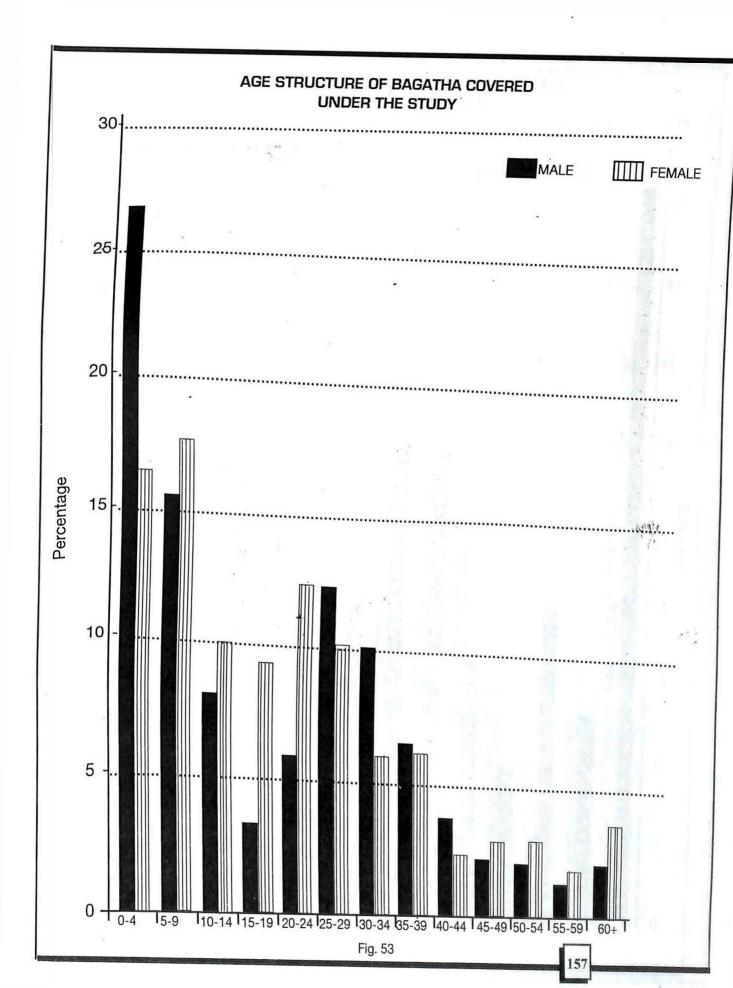


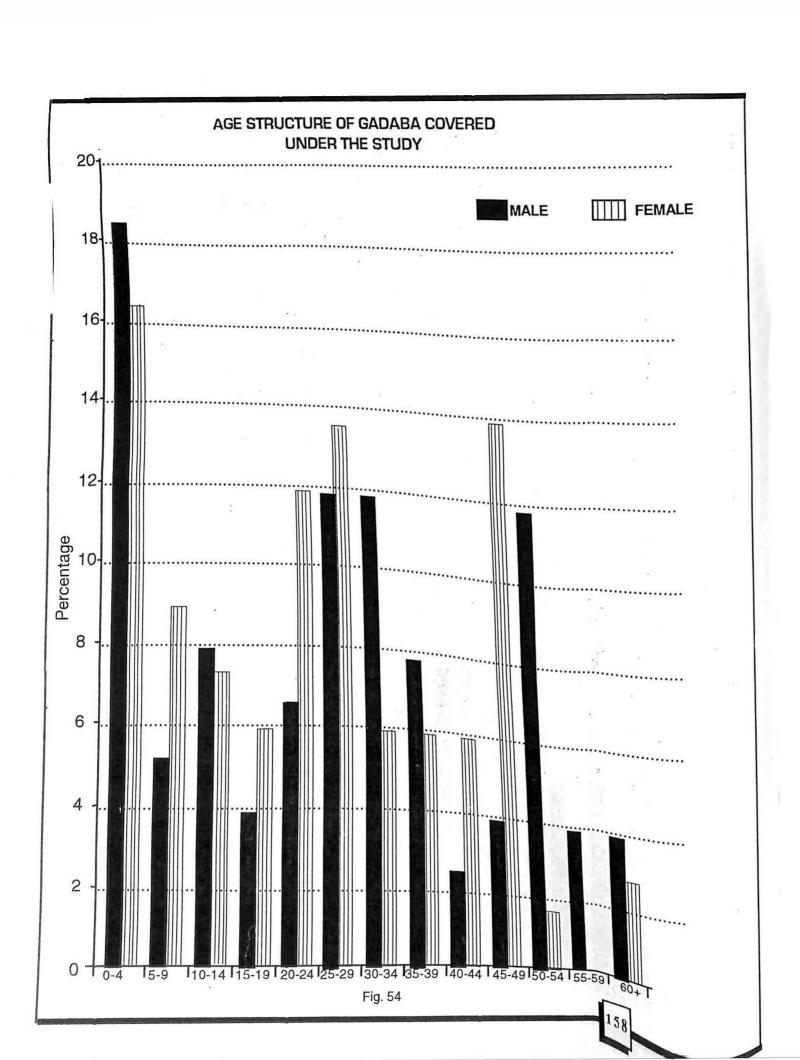


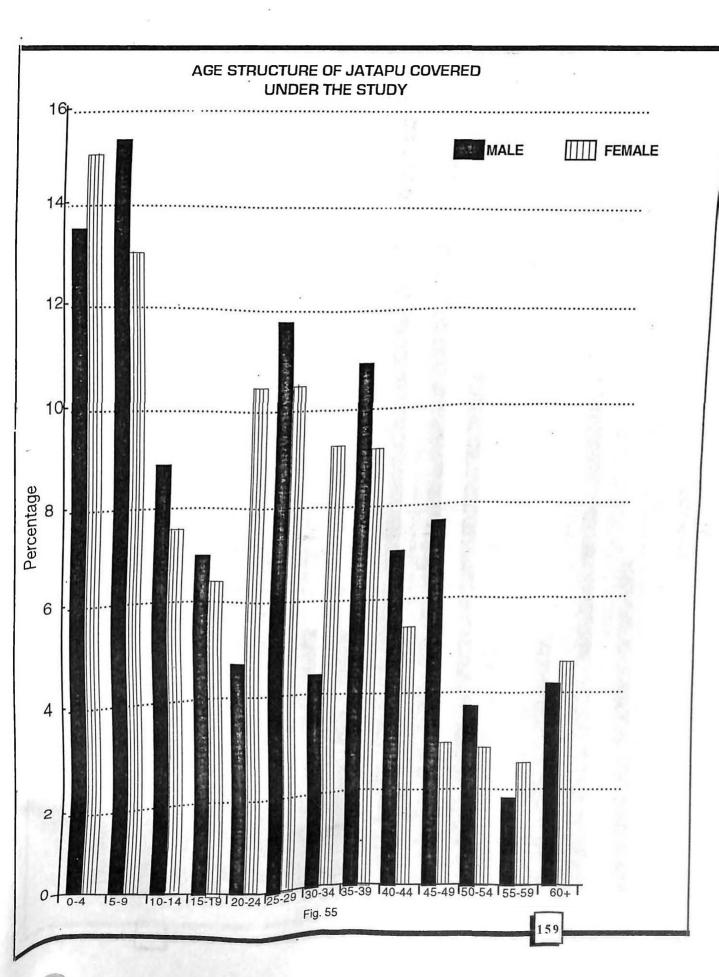


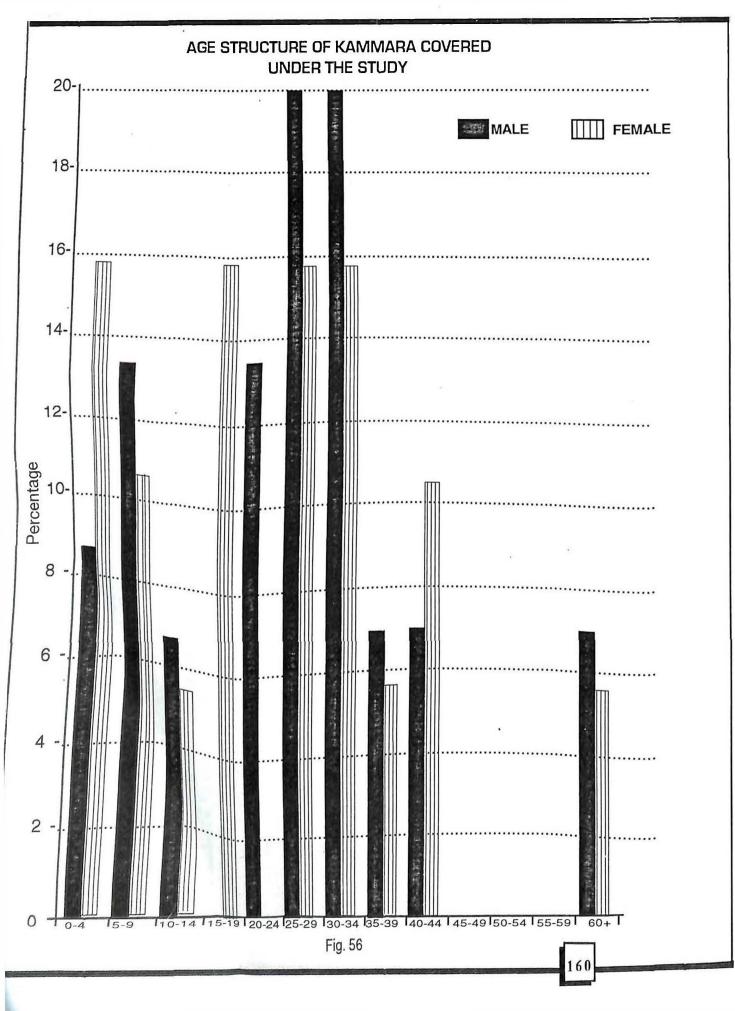


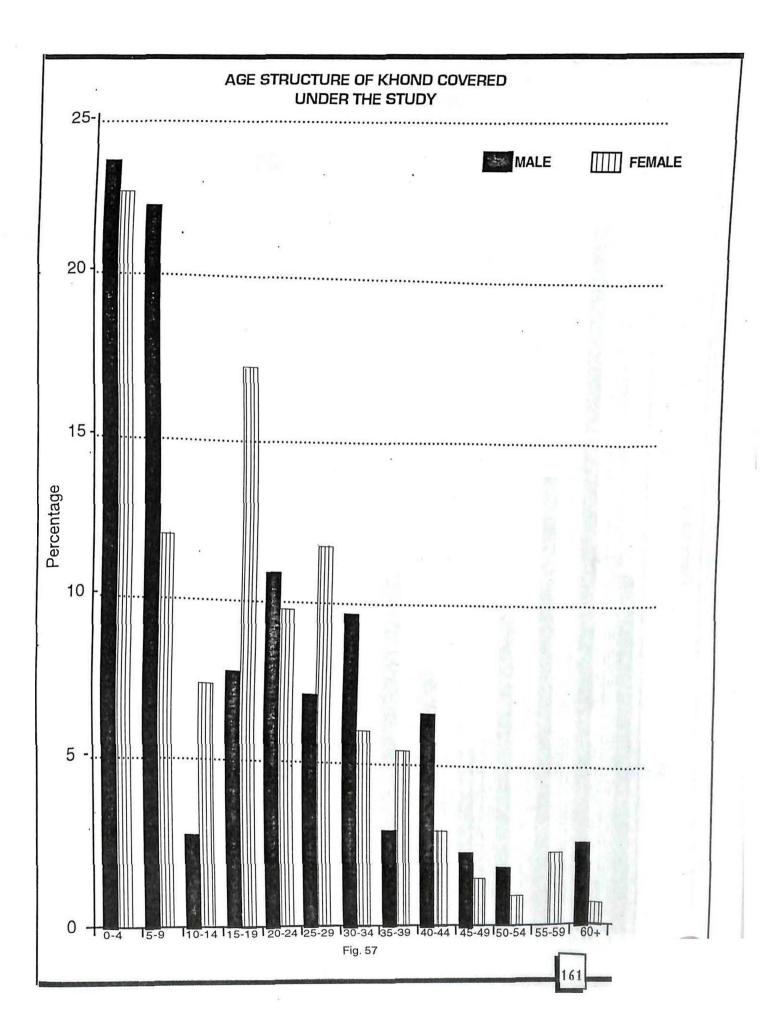


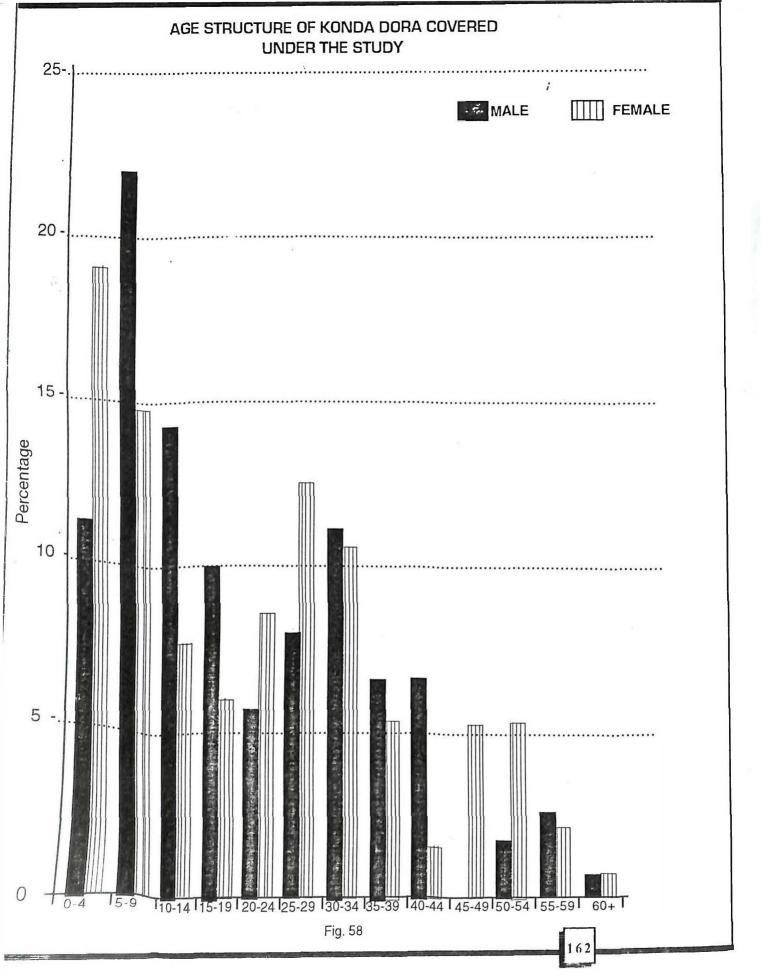


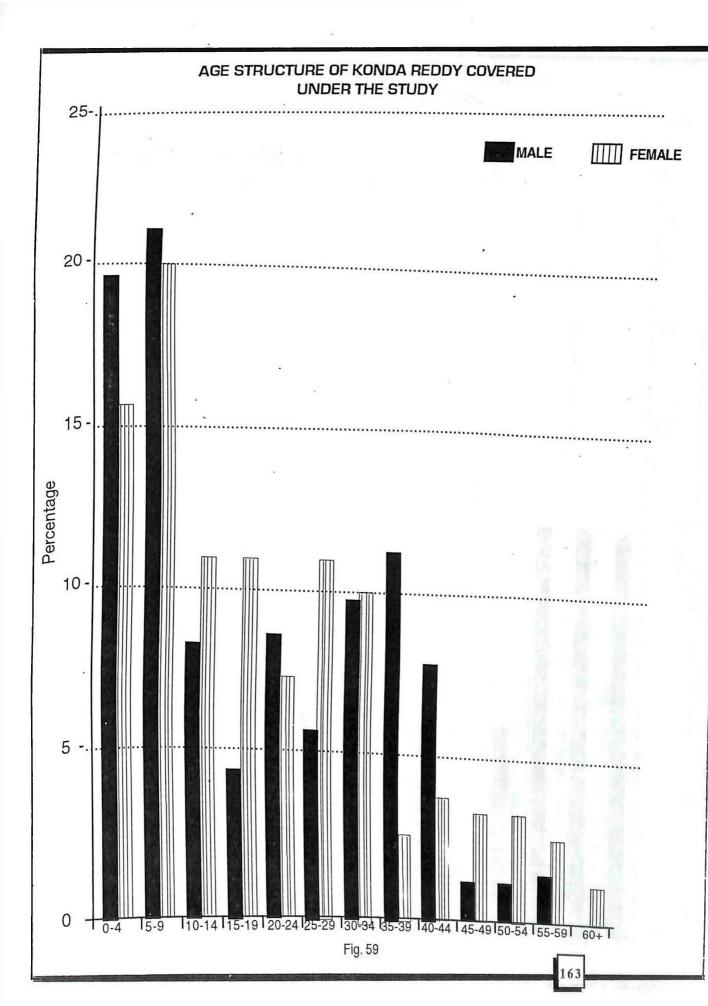


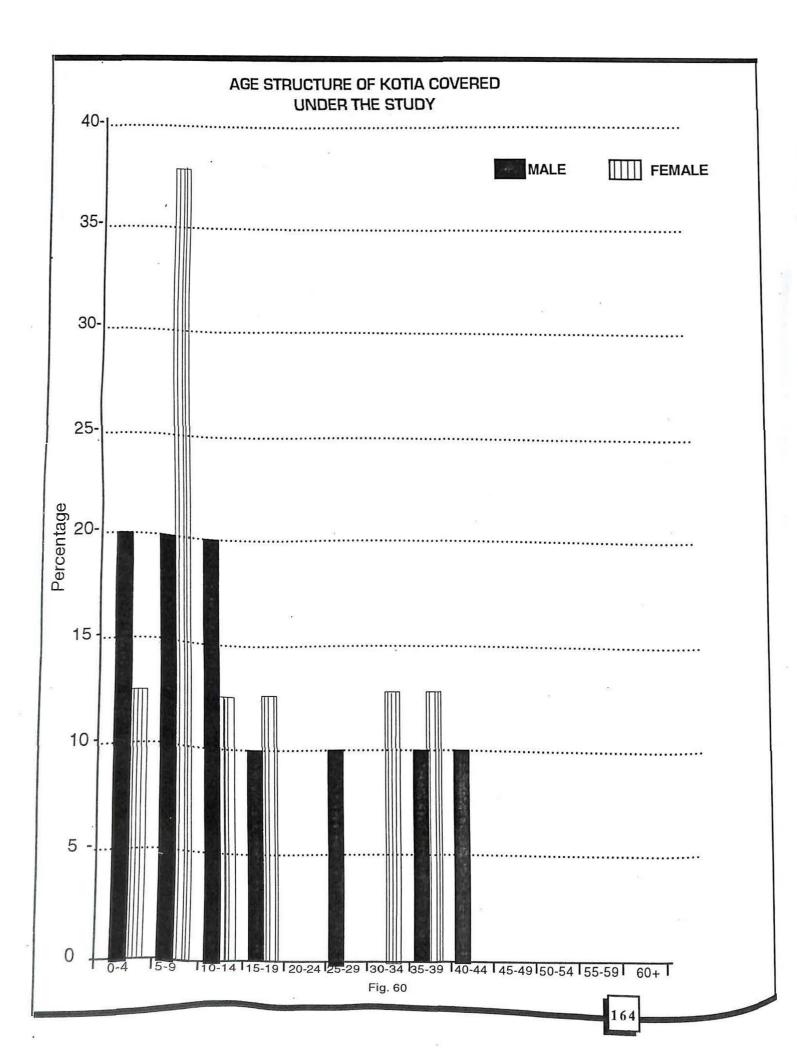


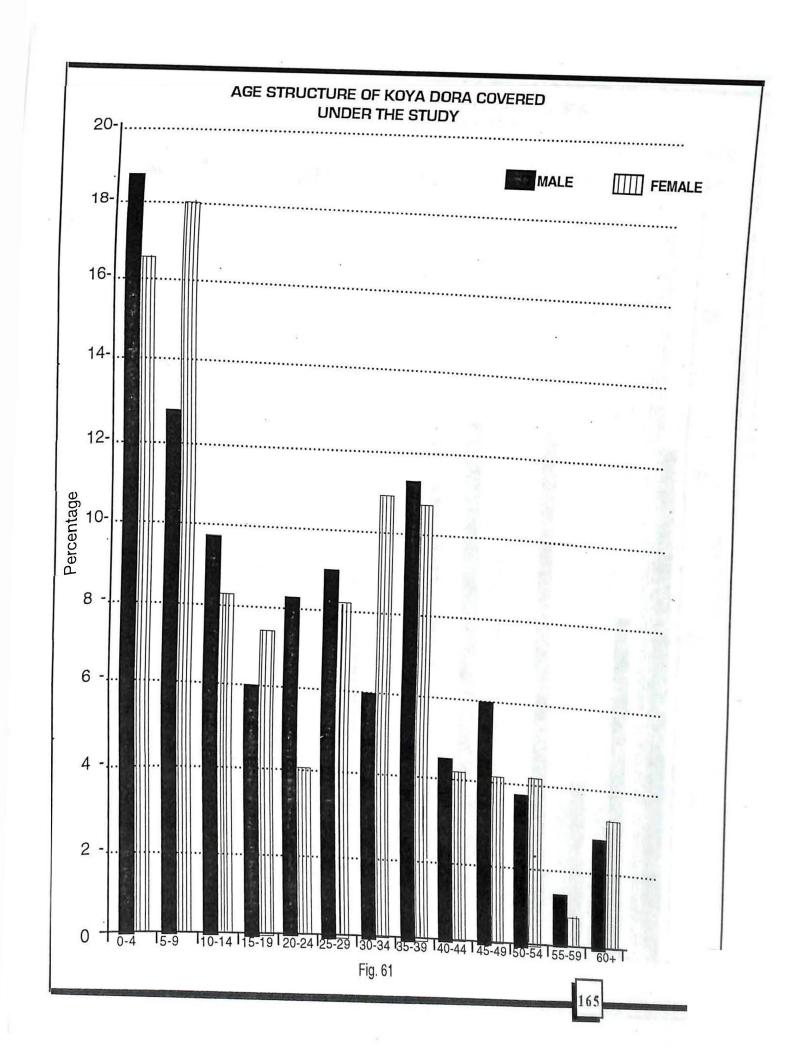


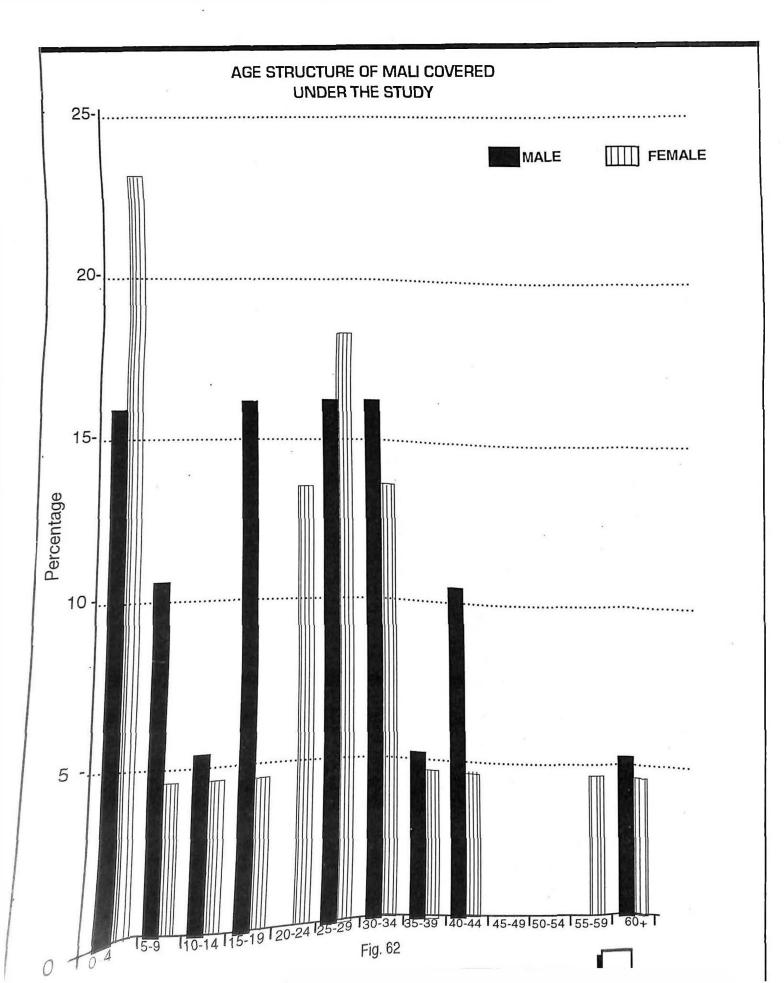


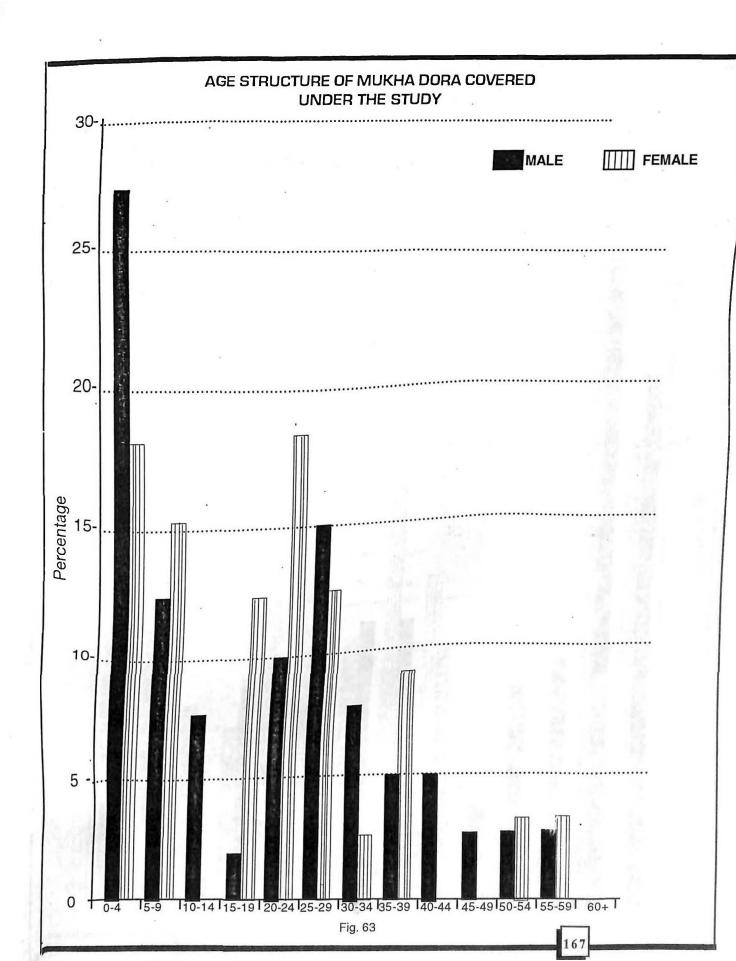


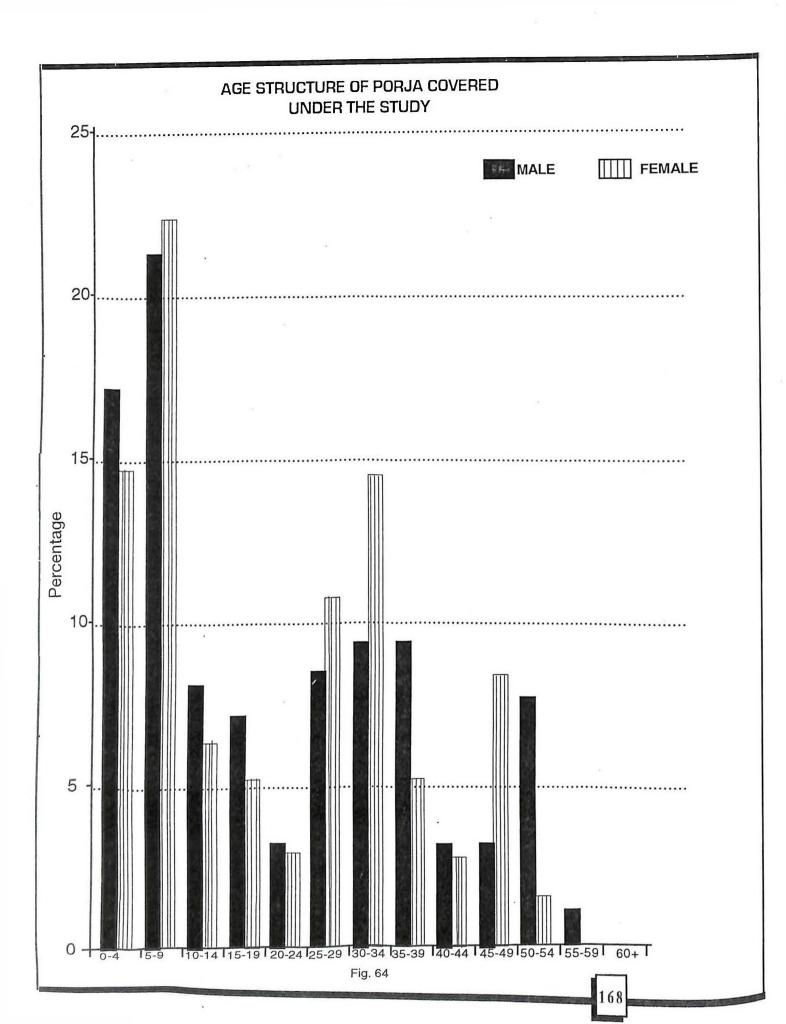


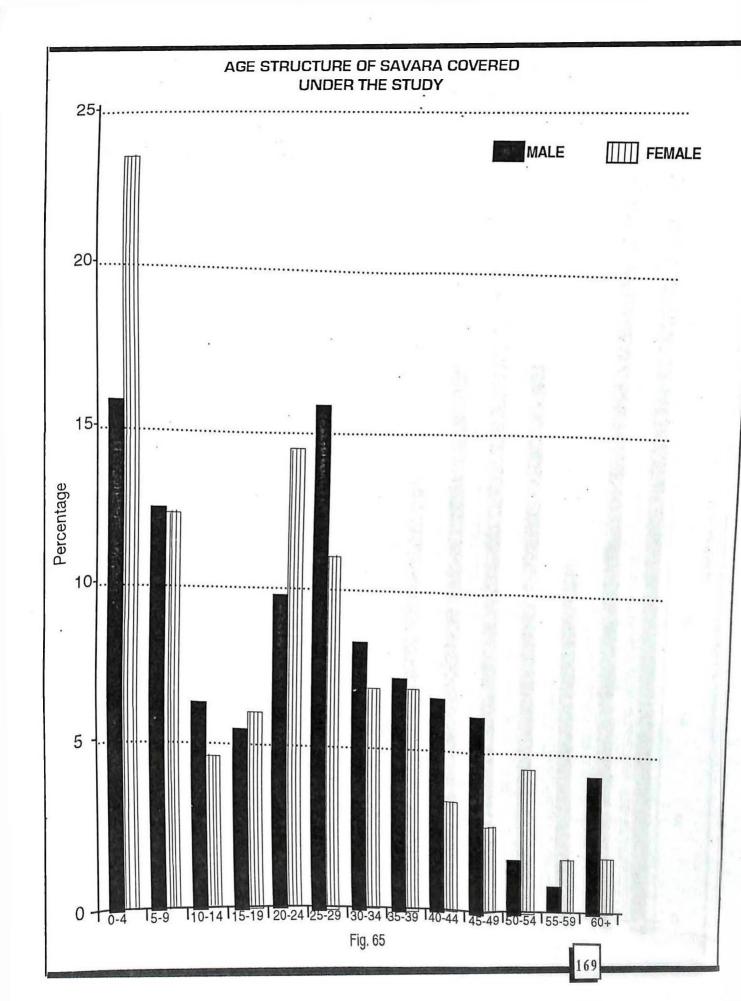


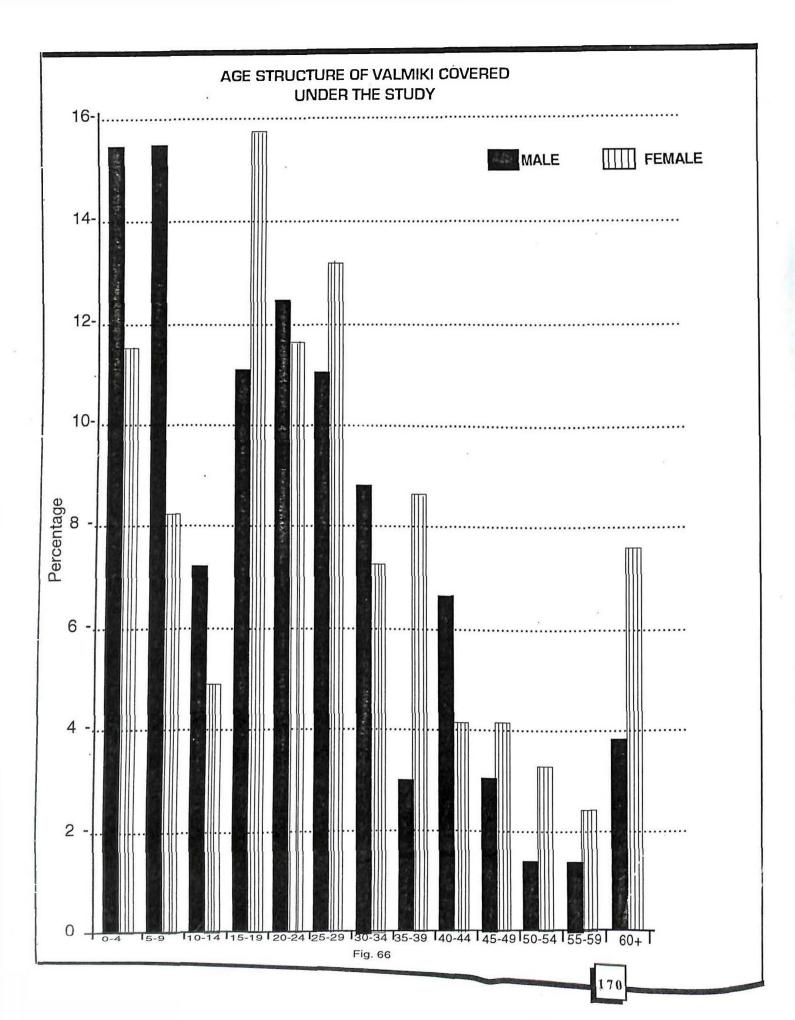










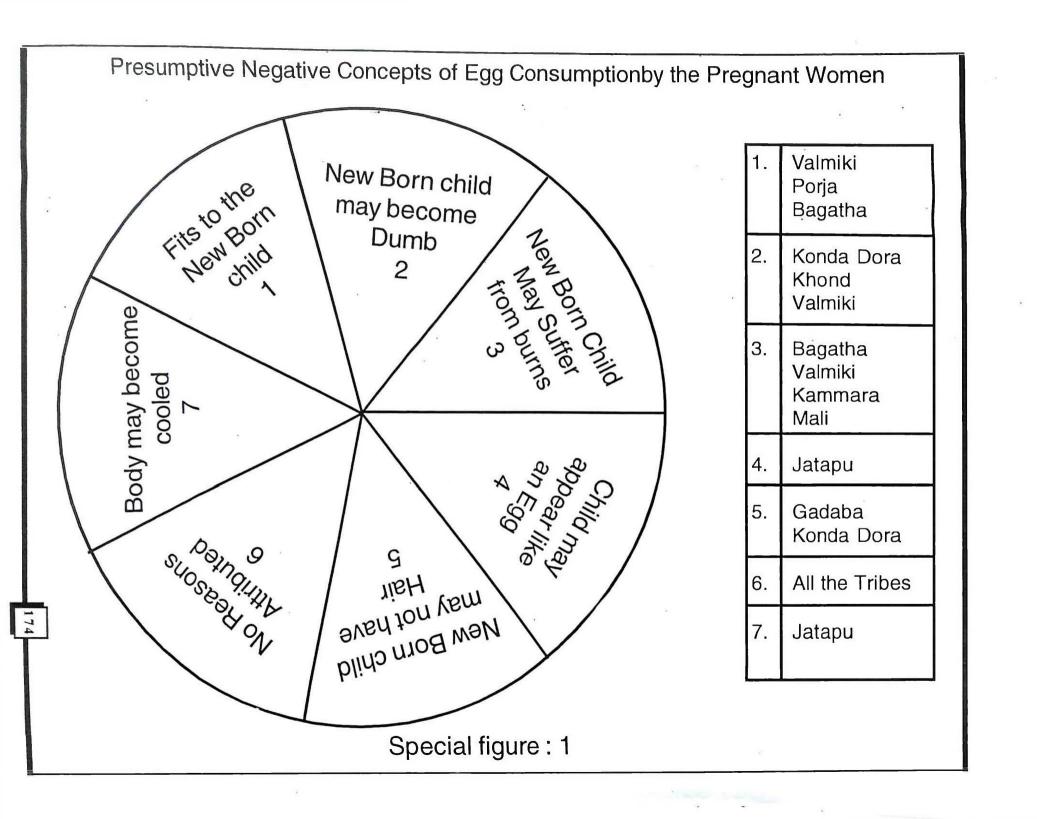


## PHYTOGENIC SOURCES OF FOOD

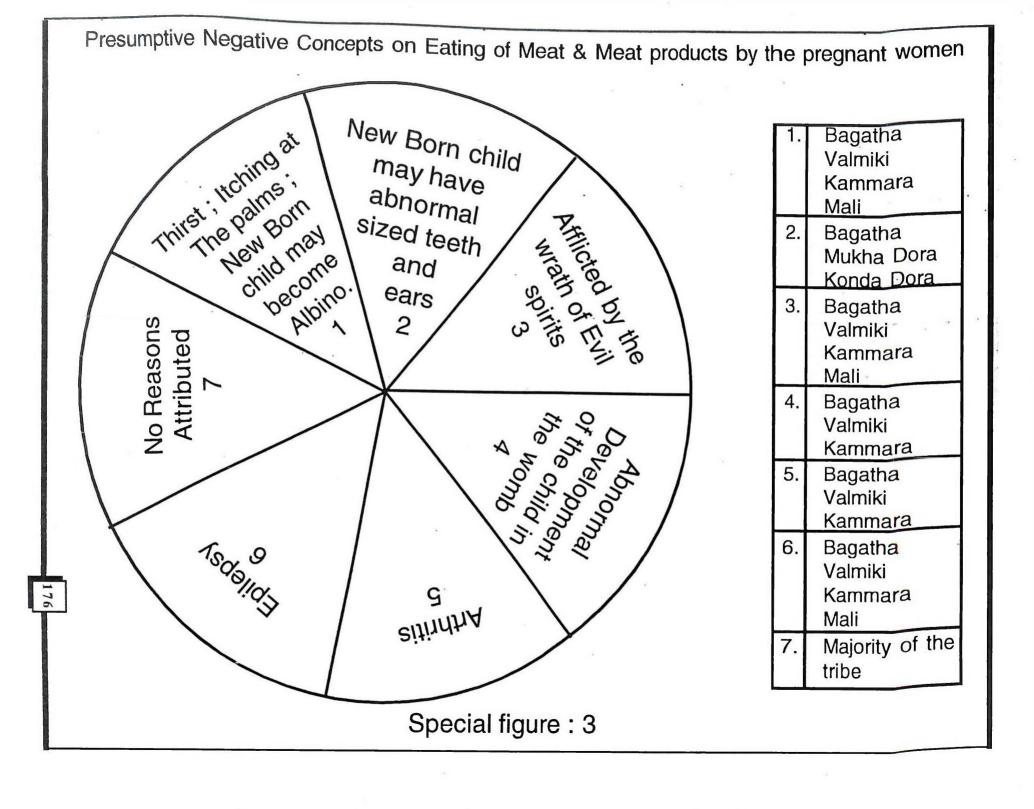
01.11	Name of the food item	Vernacular Name	Datanical Name	Availability			
SI. No			e Botanical Name	Rainy	Winter	Summer	
	Cereals & Millets				-	ų.	
1.	Rice	Vari	Oryza Sativa	-	-	-	
2.	Ragi	Raagulu	Eleusine Coracona		-		
3.	Sama	Samalu	Panicum Miliare	-	-	•	
4.	ItalianMillet	Korralu	Setaria Italica	-	-	-	
5.	Jowar	Jonnalu	Sorghum Vulgare	-	-	-	
6.	Bajra	Sajjalu	Pennistum Typhoidenu	m -	-	_	
7.	Maize	Mokka Jonna	Zea Mays	-	-	-	
	PULSES						
8.	Red gram	Kandulu	Cajanus Cajan				
9.	Bengal gram		Cajarius Cajari Cicer Arietinum	-	-	-	
10.	Green gram	Sangalu	Phaseolus Aurenus	-	-	-	
11.	Horse gram	Pesalu	· · · · · · · · · · · · · · · · · · ·	-	-	•	
12.	Field Beans	Ulavalu	Dolichos Biflorus	-	-	•	
13.	Cow pea	Chikkudu	Dolichos Lablab	X	-	-	
14.	Peas	Bobbarlu	Vigna Catjang	X	-	-	
		Battani	Pisum Sativum	-	-	-	
15	LEAFY VEGETABLES					2	
15.	Amaranth	Thotakura	Amaranthus Gangeticus	-	X		
16. 17.	Arai Keerai	Chirraku	Amaranthus Tristis	-	X :	x	
17.	Ambat Chuka	Chukka Kura	Rumex Vesticarius	-		K	
19.	Tender Bambooshoots	Veduru Chigullu	Bambusa Arundinacea	-			
20.	Colocasia Leaves	Chema Kura	Colocasia Antiquorum	-	- )	(	
21.	Drumstick Leaves	Munaga	Moringa Oleifera	-			
22.	Gogu	Gongura	Hibiscus Cannabinus	-	beg 1		
23.	Indian Red Spinach Ipomoea Leaves	yerra Bachhali	Basella Rubra		- x		
24.	Nerringi Leaves	Thootikura	Ipomoea Reptans	-	- x		
25.	Pumkin Leaves	Palleru	Tribulus Terrestris		x x		
26.	Tamarind Leaves	Gummadi	Cucurbita Maxima	х .	· x		
20.		Chinta	Tamarindus Indica	x -	_		
	ROOTS AND TUBERS						
27.	Arrow Root	Paala Dumpa	Maranta Arundinacea	V			
28.	Carrot	Carrot	Daucus Carota	x -	-trail.		
29.	Colocasia Tuber	Chena Dumpa	Colocasia Antiquorum		0.50.5		
30.	Tapioca	Pendalam	Dioscorea Alata	Х -	man A		1
31.	Onion	Neerulli	Allium Cepa		28/8/		
32.	Potato	Aalugedda	Solanum Tuberosum		To the second		-
33.	Sweet Potato	Chilagada Dumpa	Ipomoea Batatas	Burly	Street,		1
	Tapioca	Karrapendalam	Marihot Esculenta		March 1		1

		the state of the s					
	35.	Elephant Yam		Amorphophallus Campanulatus	•		
	36.	Ordinary Yam		Typhonium Trilobatum	-		-
		Wild Vom	Chedhu Dumpa	Dioscorea Versicolor	-	-	-
	37.	Wild Yam Lotus Root	Thamara Dumpa	Nelumbium Nelumbo	X	X	-
	38.		mamara Bampa				
	39.	VEGETABLES Ashgourd	Boodidha Gummadi	Benincasa Hispida	X		×
	40.	Bitter Gourd	Kakara	Momordica Charantia	X	*	-
	41.	Bottle Gourd	Anapakaya	Lagenaria Vulgaris	X	-	-
	42.	Broad Beans	Pedda Chikkudu	Vicia Faba	X	-	-
	43.	Cauliflower	Cauliflower	Brassica Oleracea	X	-	X
				Var Botrytis			
	44.	Cabbage	Cabbage	Brassica Oleracea Var Capitaca	X	-	-
	45.	Cluster Beans	Goru Chikkudu	Cyamopsis Tetrogonolo	obax	=	-
	46.	Cucumber	Dosa kaya	Cucumis Sativus	X	-	-
	47.	Drum Stick	Munaga	Moringa Oleifera	X	X	-
	48.	French Beans	French Beans	Phaseolus Vulgaris	X	-	X
	49.	Chosala	BeeraKaya	Luffa Acutangula	X		X
	50.	Chillies	Mirapa	Capsicum Annuum	-	- •	-
	51.		Panasa Puttu	Antocarpus Heterophy	Ilus x	X	-
	52.		Akakara	Momordica Dioica	X	-	X
	53.	Wild Bittergourd	Adavi Kakara	Momordica Cochin	X	X	-
		17	D1 1	Chinensis			
	54		Dhonda	Coccinia Cordifolia	X	-	
	55		Benda	Abelmoschus Esculer	ntus -	-	-
	56		Mamidi	Mangifera Indica	X	X	-
	57		Arati Gummadi Kaya	Musa Sapientum  a Cucumbita Maxima	-	-	-
	58 59		Potla Kaya	Trichosanthes Angui	- no v	-	x
	60		Tomato	Lycoperiscon Escule		-	_
	00			Lycopenscon Escule	illulli -	-	
		NUTS AND SEEDS		Total Control			
	6		Jeedimamidi	Anacardium Occider	ntale x	X	-
	62		Kobbari	Cocos nucifera	-	-	-
	63		Nuvvulu	Sesamum Indicum	X	-	X
ŀ	6	4. Ground Nut	Veru Sanaga	Archis Hypogaea	-	-	-
١	0	CONDIMENTS 5. Asafoetida	Inguva	Ferula Foetida			
١			Mirapa	Capsicum Annuum	-		-
		6. Chillies 7. Cloves	Lavanga	Syzygium Aromatic		-	-
		8. Cumin Seeds	Jeela Karra	Cuminum Cyminun		•	-
1		gg. Garlic	Vellulli	Allium Sativum			_
1		70. Pepper	Miriyalu	Piper Nigrum	-	_	_
1	/	U. I SPE	wiiriyala	i iper raigram	-	_	

71.	Pippal	Pippalu				
72.	Tamarind		Piper Longum		-	
73.	Turmeric	Chinta Pandu	Tamarindus Indica		-	
	FRUITS	rasupu	Curcuma Domestica	i.	-	
74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92.	FRUITS Amla Banana Bullock's Heart Cahew Fruit Jack Fruit Guava Rose Apple Sweet Lemon Lime Sweet Lime Mango Orange Palmyra Fruit Papaya Pine Apple Pomegranate Custard Apple Wood Apple Indian Plum Marking Nut	Pasupu  Usiri Arati Ramaphal Jeedi Pandu Panasa Jama Neredu Gaja Nimma Nimma Nimma Naranji Mamidi Kamala Thati Pandu Boppayi Anasa Dhanimma Seethaphal Velaga Pandu Regu Nalla Jeedi	Emblica Officinalis Musa Paradisiaca Annona Reticulata Anacardium Occident Artocarpus Heterophy Psidium Guajava Syzyginm Cumini Citrus Limetta Citrus Aurantifolia Citrus Sinensis Mangifera Indica Citrus Aurnantium Borassus Flabellifer Carcia Papaya Ananas Comosus Punica Granatum Annona Squamosa Limonia Acidissima Zizyphus Jujuba Semecarpus Anacardium	ale x x x x x x x x x x x x x	x - x	-
	Marking Nut Sugar Cane	Cheraku	Saccharum Officinarum	X	X	-
	BEVERAGES		7. 7			
	Kittul Beverage	Jeelugu Kallu	Caryota Urens	x	- 3	x
	Toddy		Borassus Flabellifer	X	X	Tarres.



## Presumptive Negative Concepts on Coconut Consumption by the Pregnant Women Valmiki Child May be Born Porja without Hair on Head Bagatha Konda Dora Khond Valmiki Bagatha No Reasons Valmiki Kammara Mali Jatapu CO OUT ON A PROPERTY OF THE PR 5. Bagatha Mukha Dora Konda Dora Gadaba faillure ractation 175 Special figure: 2



## Presumptive Negative Concepts on consumption of Egg by the Lactation Mothers Fits to the Valmiki No Reasons New Born child Porja Attributed Bagatha Child may Konda Dora Kond Bagatha May suffer from piseases since Breast feeding 3. Jatapu Gadaba Konda Dora 5 Koya KondaReddy 6. Jatapu Soseosid letex som Savara Bagatha Mukha Dora Konda Dora Tardy Hair Growth on the Head

Special figure: 4

