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### Nutritional status of urban and rural female farm labours in Yevatmal district

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#### Abstract

Female labours from agriculture area is seen working so much and so often, but their work is taken for granted. Rarely, problems and issues related with health and nutrition are to be granted for consideration. Maximally more trace has been given on aspects of agricultural work related with female labours. According to WHO, health is defined as state of complete mental, physical, social and spiritual wellbeing free from any infirmity or disease. Nutritional status is the maintenance of health with well-balanced diet and proportionate work. The present study was carried out to assess the nutritional status of urban and rural Female farm labours of Yevalmal district. The present study was carried out to assess the Nutritional Status of Urban and Rural Female Farm Labours of Yevatmal District. The sample selected of 250 from urban and 250 from rural areas total 500 female farm labours including age groups of 21 to 30 years and 31 to 40 years has been selected for Purposive Sampling Method. Parameters used for the study were survey and for assessment of nutritional status a combination of anthropometry, assessment of dietary intake, clinical examination and hemoglobin assessment. Difference in anthropometric measurements was very meager when compare between two areas. The BMI, MUAC and waist-hip-ratio were found out in the study were more than standard NCHS values of above Anthropometric measurements while height and weight values were deficient than NCHS standards values. On the basis of BMI, normal respondents were only 60%. Mean food intake of sugar & jaggery was more than that of ICMR recommendations whereas mean food intake of other food groups was inadequate accordingly. The maximum percent adequacy is for sugar and jaggery while inadequate for other food groups. Nutrient intake of female farm labours was below when compare with RDA for energy, calcium, iron and  $\beta$ -carotene whereas equal to or more for protein, fat and vitamin-C. Highest percent adequacy was noted for fat intake while lowest for  $\beta$ - carotene. In case of female farm labours belongs to urban, the hemoglobin levels is 9.90 gm whereas in rural 10.22 gm.

**Keywords:** Nutrition, urban, rural, female farm labour

#### Introduction

Woman constitute an important part our society plays very important role at home and in the society. According to census (2011), out of total population of our country women were 652 million and out of that Maharashtra state contents 54 million women population. As women constitute half of its population and play crucial role in agriculture and livestock production, household economy and market activities besides performing their domestic chores and reproductive functions. According to P.M. Jawaharlal Nehru "You can tell the condition of a nation by looking at the status of women."

In previous days, according to the customs and traditions, women has inferior place than that of men in Indian society. They were deprived from education, their role in the family strictly bound to household activities and parenting the child only. This resulted that they were pessimistic, illiterate, shy and traditional bounded. However with the development of the country the status of the women changed in the society and they are at good positions in every field, industry, from Government to hi-tech computer services and they are treated as equally to man in all aspects. Not only in industry but also in agriculture level female workers were performing several important activities. Contribution of female workers in agriculture is roughly estimated to be 60 to 70 per cent. The largest numbers of female workers are engaged in farming operations either as cultivators or as agriculture labours. As a wife or a mother, a farm woman takes and carries the decisions regarding development of farm and home.

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Female workers play a important role in agriculture and allied fields including main crop production, livestock, horticulture, post-harvest operations etc. The type of agricultural activities generally expected by female workers are sowing, irrigation, threshing, harvesting, weeding, winnowing, application of fertilizer etc. which are highly labour intensive. Beside this, they perform arduous work in house such as child rearing, cooking, fuel and fodder collection, fetching water etc. and so on lasts near about 14 to 16 hours. Thus, they have to play their important role and responsibilities in and outside of the house. It is estimated that 86% of the total rural women performing many agricultural operations. Among them, 36% have their own land and work in fields whereas around 50% worked as agriculture labour. However the changed social status of farm workers resulted in additional workload and stress for women resulting in poor health status.

### Health and Nutritional Status of Farm Women

Female labours from agriculture area is seen working so much and so often, but their work is taken for granted. Rarely problems and issues related with health and nutrition are to be granted for consideration. Maximally more trace has been given on aspects of agricultural work related with female labours. According to WHO, health is defined as state of complete mental, physical, social and spiritual wellbeing free from any infirmity or disease. Nutritional status is the maintenance of health with well-balanced diet and proportionate work.

Now a day's health status is no longer considered an outcome solely of life style choices, it is influenced by social, political and economic factor. It also included family, community, population, psychosocial and cultural understanding. Social determinants of health also included such as income, education, area of living, type of employment, working conditions and health services. The most important factor that influences the quality of human life is nutrition. To assess a health status and morbidity pattern an important health indicator is their nutritional status. Moreover, in the developing country like India, the picture of nutritional status of female labours is far serious in the poor socio-economic group who lives in the rural areas and urban particularly slums of urban.

World health organization (1995) [7] has recommended that to assess the nutritional and health status of adults use anthropometry, which includes height, weight and other body measurements. The information on height throws light on the past nutritional status, that indicates how well-nourished they have from the beginning. Body weight gives an indication of the current nutritional status to identify the individual as overweight, underweight or retarded growth. Body mass index is a simple numeric measure to assess fatness or thinness of an individual which is widely used to determine nutritional status. BMI is a most established anthropometric indicator used not only for assessment of nutritional status but also the socio-economic situation of a population. It is also related to demographic, economic, social and environmental conditions of the population (Prayer and Rogers, 2006). Along with BMI other anthropometric indicators like Mid-Upper-Arm-Circumference (MUAC) and Waist-Hip-Ratio (WHR) are also useful for assessment of nutritional status in women.

The nutritional status of female labours is integrated related to their nutritional requirement, dietary intake, dietary practices, culture, traditions and meal pattern. Diets of female farm labours are inadequate both in terms of quality and quantity.

They mainly consume cereal based food but grossly deficient in green leafy vegetables, fruits, milk and milk products. In poor communities, when they are pregnant, they are often eating last. Moreover, staple food items i.e. pulses, rice etc. are distributed fairly equally, dishes containing micronutrients i.e. Green leafy vegetables, other vegetables, milk and milk products, fruits etc. are often preferentially allocated to families male members and small children.

Factors that tend to reduce macro and micro nutrient intake may be unequal intra-familial distribution of food, adverse and harmful dietary practices including specific food taboos. Due to these changing dietary practices the problem of under nutrition is not mitigated to large extent; it coexists along with over nutrition.

The nutritional status of female farm labours is predicted by Food habits. Pattern of consumption and food choices have an influences of cultural and socio economic status of workers. Whereas according to season and often based on availability of price, vary consumption of some food items. To secure the sustainable satisfactory nutritional status only food is not sufficient. Hence, aspects of health must be considered.

### Review of Literature

Raut, N. R. (2009) [6] studied on "Food consumption pattern and nutritional status of women in Orissa: a rural – urban differential". Results of the study indicated that the farm women from Orissa were not found to be better consumers, even for a single food item. 63% and 26% of urban women were eating pulses or beans and milk or curd daily, but the figures were only 37.5% and 8.1% for rural counterparts. The percent consumption of fruits, eggs, chicken or meat were 4.9, 2.0 and 3.7 respectively for urban women and 2.2, 0.6 and 1.6 for rural counterparts, clearly indicating the lower status of farm women in Orissa regarding consumption of food. 46% of urban women were taking chicken or meat or fish at least once in a week, but the figure was only 28.3% in rural areas. It finds out that non-vegetarian in rural areas (94.6%) were more than urban areas (90.4%).

Prakruthi, B. S. and Prakash, J. (2013) [4] studied on "Nutritional status and dietary pattern of Indian rural women with reference to energy intake and expenditure." From south India in the state of Karnataka, villages of 'Mandya' district, a study on 300 farm women aged between 20-40 years. The results of the study found that, 42.3% of women had normal height and weight, however, 27% were overweight and 12% were observed. Analysis shows that, with increasing age BMI increased in women and higher TSF and WHR was seen independently. Obese women were in the age range of 35+ years with a very high WHR of 0.82. A positive correlation was seen with BMI versus WHR (0.678) and TSF (0.578).

A case study on "Socio-economic condition of agriculture women labourer: a case study" was conducted in Karnataka State by Mugadur, N. S. and Hiremath, R. C. (2014). There were 30 samples respondents of the women agriculture labours. The results of the study found that, Most 63.33% of the women labours were educated up to primary level, 16.6% were up to secondary level whereas only 6.67% were had college education. 47% women labours earn below Rs. 5000/- per month, 20% earn Rs. 5000-8000/- per month were as 33% earn Rs. 8000-10000/- per month. Economic status of respondents revealed that 20% women were above poverty line, 63.33% were below poverty line.

Mishra, D. and Singh, R. A. (2015) [2] conducted "A study on energy balance of farm women" a study of 100 farm women from 8 farms of block Kalayanpur of Kanpur district,

belongs to age group of 25 to 55 years. It observed that Maximum farm women (57%) belonged to 35 to 45 years age group. More than half women were illiterate and (52%) have husband's occupation was agriculture. 53% of family was having less than 5 members and 56% of farm women were landless. 57% farm women belonged to nuclear family. Bellurkar, C. M. (2015) [1] studied on "Daily food and nutrient intake by the farm women". Two agro-climatic zones of Maharashtra were studied. 600 farm women 200 each from urban, rural and tribal areas were selected to conduct study. The results of the study found that almost 100% were consuming cereals, pulses, green leafy vegetables, roots and tubers and other vegetables in their daily diet. Majority (90.16%) were consuming fats and oils daily. (71.66%) of farm women were found to be consuming milk and milk products daily. Mainly the milk was consumed in the form of tea, curd; butter milk etc. 49% of the women was consuming meat products, fish and eggs. Fruits were frequently consumed by only 23.66 % of women. Information about daily nutrient intake by the farm women state that, average energy consumption of these respondents was 1372.33 kcal which was less than recommended intake. Protein intake was quiet less than the recommended level (50 gm/day) and i.e. (42.04 gm/day). Intake of fat (22.23 gm/day) was more than recommend level (20 gm/day). Average intake of calcium was (394.17 mg/day) which was quite normal as recommended intake of calcium is (400 mg/day). Thus an average intakes of iron (14.74 mg/day) was too poor than recommended dietary allowances (30 mg /day). Average intake of thiamin, riboflavin and niacin was 1.31 mg, 0.62 mg and 12.26 mg respectively. The intake of vitamin-C of the farm women was (36.47 mg/day) which is quite nearer to recommended intake i.e. (40 mg/day). Overall it can be concluded that the nutrient intake of the selected farm women was normal or satisfactory.

### Objectives

1. To find out the socio-economic status of female farm labours of urban and rural areas.
2. To assess the anthropometric measurements Viz., Height, Weight, BMI, Waist-Hip Ratio and Mid Upper Arm

Circumference of female farm labours of urban and rural areas

3. To find out consumption pattern by means of food and nutrient intake, percent adequacy of nutrients of female farm labours of urban and rural areas.
4. To assess the hemoglobin content of female farm labours of urban and rural areas.

### Methodology

The present study was carried out to assess the Nutritional Status of Urban and Rural Female Farm Labours of Yevatmal District. The sample selected of 250 from urban and 250 from rural areas total 500 female farm labours including age group of 21 to 30 years and 31 to 40 years has been selected for Purposive sampling method. Parameters used for the study were survey and for assessment of nutritional status a combination of anthropometry, assessment of dietary intake, clinical examination and hemoglobin assessment. A survey was carried out to find general background. A combination of anthropometry, food consumption pattern and nutrient intake were used for assessing the nutritional status of selected female farm labours. Using standard procedures of anthropometry measurements of height (cm), weight (kg), mid-upper arm circumference, waist-hip-ratio (WHR) of the selected 500 female farm labours were recorded and compared with NCHS reference values. The body mass index (BMI) was calculated by using ICMR Standard formula. WHR is the ratio of circumference of the waist to that of the hip. The ratio was calculated by waist measurement by hip measurement. Food and nutrient intake of all 500 female farm labours was assessed by using 24 hours recall method for three consecutive days. To determine the type and approximate quantity of food stuff consumed by each subject used weightment method. All 500 female farm labours included in the present study were assessed for the examined for haemoglobin content by cyanomethemoglobin method.

### Results & Discussion

The collected data was analyzed with descriptive and inferential statistical techniques and interpreted.

**Table 1:** Information of Socio-economic background of female farm labour

Sr. No.	Particular	Urban (n=250)	Rural (n=250)	Total (n=500)
1.	Age Group (Years)			
	21-30 Years	125 (50%)	125 (50%)	250 (50%)
	31-40 Years	125 (50%)	125 (50%)	250 (50%)
2.	Education			
	Primary School	72 (28.8%)	53 (21.2%)	125 (25%)
	Secondary School	77 (30.8%)	101 (40.4%)	178 (35.6%)
	High School	101 (40.4%)	96 (38.4%)	197 (39.4%)
3.	Type of Family			
	Joint	58 (23.2%)	82 (32.8%)	140 (28%)
	Nuclear	192 (76.8%)	168 (67.2%)	360 (72%)
4.	Family Size			
	4-6	223 (89.2%)	198 (79.2%)	421 (84.2%)
	>6	27 (10.8%)	52 (20.8%)	79 (15.8%)
5.	Food Habit			
	Vegetarian	77 (30.8%)	198 (79.2%)	275 (55%)
	Non-Vegetarian	173 (69.2%)	52 (20.8%)	225 (45%)
6.	Monthly Family Income			
	<6000 Rs.	40 (16%)	67 (26.8%)	107 (21.4%)
	6001-10000 Rs.	154 (61.6%)	139 (55.6%)	293 (58.6%)
	>10000 Rs.	56 (22.4%)	44 (17.6%)	100 (20%)

From the above table it explains that, by considering socio-economic background of female farm labours, classification of groups of 21-30 years and 31-40 years in urban and rural

female farm labours is same. Considering education in female farm labours having the percentage of primary school education is in urban and rural is (28.8%) and (21.2%)

respectively which total (25%). Secondary school education for above is (30.8%) and (40.4%) totals (35.6%). Whereas in case of high school it is (40.4%) and (38.4%) totals (39.4%) respectively. By considering type of family, female farm labours from joint family in case of urban is (23.2%) and in rural is (32.8%) totals (28%). Whereas in case of nuclear family (76.8%) female farm labours are from urban and (67.2%) are from rural areas total (72%). Considering Family size, having 4 to 6 members in the family, (89.2%) female farm labours from urban and (79.2%) from rural areas total (84.2%). Family having more than 6 members, (10.8%) female farm labours is from urban and (20.8%) are from rural

totals (15.8%). Considering food habit, vegetarian female farm labours are (30.8%) from urban and (79.2%) from rural areas total (55%). Non-vegetarian female farm labours are (69.2%) are from urban and (20.8%) from rural totals (45%). By considering monthly income of the family less than Rs. 6000, female farm labours are (16%) from urban and (26.8%) from rural totals (21.4%). Monthly income of the family between Rs. 6001 to 10000, female farm labours from urban area is (61.6%) and of rural is (55.6%) total (58.6%). Monthly income more than Rs. 10,000 of the family, female farm labours are (22.4%) from urban and (17.6%) are from rural total (20%).

**Table 2:** Information of anthropometric measurements of female farm labours

Sr. No.	Particular	Urban (n=250)	Rural (n=250)	Total (n=500)
1.	Height (cm)	150.38 ± 5.26	151.30 ± 5.68	150.84 ± 5.46
2.	Weight (kg)	49.90 ± 9.12	48.98 ± 9.32	49.44 ± 9.22
3.	BMI (kg/m <sup>2</sup> )	22.04 ± 3.83	21.34 ± 3.74	21.69 ± 3.78
4.	MUAC (cm)	25.85 ± 3.91	25.20 ± 3.20	25.52 ± 3.55
5.	Waist Circumference (cm)	74.55 ± 9.42	73.85 ± 9.42	74.2 ± 9.42
6.	Hip Circumference (cm)	88.82 ± 8.82	87.86 ± 8.82	88.34 ± 8.82
7.	Waist-Hip Ratio (WHR)	0.86 ± 0.06	0.84 ± 0.05	0.85 ± 0.05

From the above table it explains that, the anthropometric measurements the height, weight, BMI, MUAC, waist circumference, hip circumference and WHR of selected female farm labours in urban and rural area is 150.38 ± 5.26 and 151.30 ± 5.68 respectively female farm labours having an overall mean of 500 female farm labours is 150.84 ± 5.46, in case of average weight of selected female farm labours in urban and rural areas 49.90 ± 9.12 and 48.98 ± 9.32 respectively having total mean of 49.44 ± 9.22. Whereas BMI value in case of urban and rural areas has an average of 22.04 ± 3.83 and 21.34 ± 3.74 respectively having total mean of

21.69 ± 3.78. While measurements in case of MUAC urban and rural female farm labours are 25.85 ± 3.91 and 25.20 ± 3.20 accordingly having total mean of 25.52 ± 3.55. The waist circumference in case of urban and rural selected female farm labours is 74.55 ± 9.42 and 73.85 ± 9.42 having total mean of 74.2 ± 9.42. In case of hip circumference in urban and rural female farm labours is 88.82 ± 8.82 and 87.86 ± 8.82 respectively having total mean of 88.34 ± 8.82. However Waist-Hip Ratio in case of urban and rural female farm labours is 0.86 ± 0.06 and 0.84 ± 0.05 respectively having total mean of 0.85 ± 0.05.

**Table 3:** Information of mean food intake of female farm labours (n=500)

Sr. No.	Particular	Urban (n=250)	Rural (n=250)	Balanced Diet	t -value
1.	Cereals (gm)	275.38 ± 37.97	309.36 ± 52.28	360	8.01**
2.	Pulses (gm)	32.69 ± 17.35	50.39 ± 19.36	75	10.76**
3.	Green Leafy vegetables (gm)	18.39 ± 14.26	26.69 ± 17.23	100	5.86**
4.	Roots & Tubers (gm)	39.01 ± 35.42	45.19 ± 32.90	100	2.02*
5.	Other Vegetables (gm)	30.50 ± 17.24	32.51 ± 19.89	100	1.20 <sup>NS</sup>
6.	Fruits (gm)	18.81 ± 18.88	19.98 ± 22.90	100	0.62 <sup>NS</sup>
7.	Nuts and Oil seeds (gm)	8.28 ± 4.24	13.09 ± 6.48	-	9.80**
8.	Milk and milk products (ml)	91.17 ± 19.72	102.83 ± 35.21	300	4.56**
9.	Fats & Oils (ml)	21.48 ± 7.92	17.81 ± 8.33	30	5.03**
10.	Sugar & Jaggery (gm)	38.11 ± 13.10	42.68 ± 20.82	25	2.93**
11.	Meat and Meat products (gm)	23.25 ± 25.16	2.68 ± 10.00	30	12.00**

NS - Non significant, \* - Significant at 0.05, \*\* - Significant at 0.01

From the above table, it has been observed that mean food intake of female farm labours of cereals (gm) in urban area is (275.38 ± 37.97) and in rural area is (309.36 ± 52.28). In case of pulses (gm), it is (32.69 ± 17.35) in urban and (50.39 ± 19.36) in rural. Green leafy vegetables (gm) intake is (18.39 ± 14.26) in urban and (26.69 ± 17.23) in rural area. It is (39.01 ± 35.42) in urban and (45.19 ± 32.90) in rural area in case of roots and tubers (gm). Other vegetables (gm) is (30.50 ± 17.24) in urban and (32.51 ± 19.89) in rural area, in case of fruits (gm) (18.81 ± 18.88) in urban and (19.98 ± 22.90) in rural. The intake of nuts and oil seeds (gm) is (8.28 ± 4.24) in urban and (13.09 ± 6.48) in rural area. Milk and milk products (ml) intake is (91.17 ± 19.72) in urban and (102.83 ± 35.21) in rural. It is about fats and oils is (21.48 ± 7.92) in urban and (17.81 ± 8.33) in rural area. Sugar and jaggery (gm) is (38.11 ± 13.10) in urban and (42.68 ± 20.82) in rural area. Intake of

meat and meat products (gm) are (23.25 ± 25.16) in urban and (2.68 ± 10.00) in rural area.

All these food components are intake compared with ICMR recommendation level, cereals, pulses, green leafy vegetables, nuts and oils seeds, milk and milk products, fats and oils, sugar and jaggery, meat and meat products a highly significant difference is observed, whereas significant difference is observed in case of roots and tubers. Moreover in case of other vegetables and fruits intake compared with ICMR recommendation level is non-significant and no difference is observed statistically. Thus, intake of all food components, same consumptions occurs in urban and rural areas. In all food components only Sugar and Jaggery is consumed more than that of ICMR recommendation level as observed.

**Table 4:** Information of percent adequacy of food intake (n=500)

Sr. No.	Particular	Urban	Rural
1.	Cereals (gm)	76.49	85.93
2.	Pulses (gm)	43.58	67.18
3.	Green Leafy vegetables (gm)	18.39	26.69
4.	Roots & Tubers (gm)	39.01	45.19
5.	Other Vegetables (gm)	30.50	32.51
6.	Fruits (gm)	18.81	19.98
7.	Milk and milk products (ml)	30.39	34.27
8.	Fats & Oils (ml)	71.60	59.36
9.	Sugar & Jaggery (gm)	152.44	170.72
10.	Meat and Meat products (gm)	77.5	8.93

From the above table, percent adequacy of food intake by female farm labours. Cereals intake is (76.49%) in urban and (85.93%) in rural, pulses is (43.58%) in urban and (67.18%) in rural, green leafy vegetables (18.39%) in urban and (26.69%) in rural, roots and tubers are (39.01%) in urban and (45.19%) in rural, other vegetables are (30.50%) in urban and (32.51%) in rural, fruits is (18.81%) in urban and (19.98%) in rural, milk and milk products is (30.39%) in urban and (34.27%) in rural, fats and oils is (71.60%) in urban and (59.36%) in rural, sugar and jaggery is (152.44%) in urban and (170.72%) in rural and meat and meat products is (77.5%) in urban and (8.93%) in rural. When compare between areas of residing it was observed that rural female farm labours recorded highest percent adequacy for all food groups than urban except fats and oils and meat and meat products.

**Table 5:** Information of nutrient intake of female farm labours (n=500)

Sr. No.	Particular	Urban (n=250)	Rural (n=250)	RDA	t - value
1.	Energy (kcal)	1743.75 ± 192.02	1810.11 ± 313.35	2230	2.85*
2.	Protein (gm)	50.08 ± 7.59	56.59 ± 9.82	55	8.29*
3.	Fat (gm)	35.13 ± 8.17	32.96 ± 8.88	25	2.84*
4.	Calcium (mg)	418.16 ± 64.04	475.27 ± 99.55	600	7.62*
5.	Iron (mg)	14.19 ± 2.88	16.64 ± 3.91	21	7.97*
6.	Vitamin-C (mg)	39.06 ± 24.68	40.62 ± 19.82	40	0.77 <sup>NS</sup>
7.	β-Carotene (µg)	1298.57 ± 695.73	1761.60 ± 1108.63	4800	5.59*

NS - Non significant, \* - Significant at 0.01

From the above table, it comes to know that mean intake of nutrients of female farm labours as per area. Energy (kcal) is (1743.45 ± 192.02) in urban and (1810.11 ± 313.35) in rural area, Protein (gm) is (50.08 ± 7.59) in urban and (56.59 ± 9.82) in rural, Fats (gm) is (35.13 ± 8.17) in urban and (32.96 ± 8.88) in rural, Calcium (mg) is (418.16 ± 64.04) in urban and (475.27 ± 99.55) in rural, Iron (mg) (14.19 ± 2.88) in urban and (16.64 ± 3.91) in rural, Vitamin-C (mg) is (39.06 ± 24.69) in urban and (40.62 ± 19.82) in rural and β-carotene (µg) (1298.57 ± 695.73) in urban and (1761.60 ± 1108.63) in rural area. When nutrients intake is compared with RDA of ICMR it has been statistically highly significant difference in energy, protein, fat, calcium, iron and β-Carotene is observed. In case of vitamin-C it is not significant. On the other hand intake of protein, fat and vitamin-C of rural female farm labours was more than RDA. However other nutrients were below RDA, only fat intake was more in urban.

**Table 7:** Information of Hemoglobin level of female farm labours (n=500)

Sr. No.	Area	Hemoglobin Content (gm/dl)	t - value
1.	Urban	9.90 ± 1.39	2.61
2.	Rural	10.22 ± 1.32	

Significant at 0.01

From the above table, haemoglobin value of female farm labours as per area. Urban have (9.90 ± 1.39gm/dl) and the highest value was observed for rural area (10.22 ± 1.32gm/dl). Statistically significant difference was observed in urban and rural area.

### Conclusion

Difference in anthropometric measurements was very meager when compare between two areas. The BMI, MUAC and waist-hip-ratio were found out in the study were more than standard NCHS values of above Anthropometric measurements while height and weight values were deficient than NCHS standards values. On the basis of BMI, normal respondents were only 60%. Mean food intake of sugar & jaggery was more than of ICMR recommendations whereas mean food intake of other food groups was inadequate accordingly. The maximum percent adequacy is for sugar and jaggery while inadequate for other food groups. Nutrient intake of female farm labours was below when compare with RDA for energy, calcium, iron and β-carotene whereas equal to or more for protein, fat and vitamin-C. Highest percent adequacy was noted for fat intake while lowest for β-carotene. In case of female farm labours belong to urban, the hemoglobin levels is 9.90 gm whereas in rural 10.22 gm. Urban female farm labours were having more weight than rural female farm labours so indirectly it had influence on BMI, MUAC and WHR. Though the food intake is less due to poor dietary diversity with dominantly used of carbohydrates and fat based diet and a high prevalence of overweight. overall contribution of commercially prepared food towards fat intake of poor quality. This could be the impact of

**Table 6:** Information of percent adequacy of nutrient intake (n=500)

Sr. No.	Particular	Urban	Rural
1.	Energy (kcal)	78.19	81.17
2.	Protein (gm)	91.05	102.89
3.	Fat (gm)	140.52	131.84
4.	Calcium (gm)	69.69	79.21
5.	Iron (mg)	67.57	79.23
6.	Vitamin-C (mg)	97.65	101.55
7.	β-Carotene (µg)	27.05	36.70

From the above table, percent adequacy of nutrient intake of female farm labours, in case of energy is (78.19%) in urban and (81.17%) in rural, protein is (91.05%) in urban and (102.89%) in rural, fat is (140.52%) in urban and (131.84%) in rural, calcium is (69.69%) in urban and (79.21%) in rural, iron is (67.57%) in urban and (79.23%) in rural, vitamin-C is (97.65%) in urban and (101.55%) in rural and β-carotene is (27.05%) in urban and (36.70%) in rural. Only percent adequacy of fat was more in urban than rural.

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