Global Scientific JOURNALS

GSJ: Volume 8, Issue 2, February 2020, Online: ISSN 2320-9186
www.globalscientificjournal.com

NUTRITIONAL COMPOSITION OF FRESH SAMMA *(URTICA SIMENSIS)* LEAVES COLLECTED FROM FOUR OROMIYA DISTRICTS OROMIYA, ETHIOPIA

Berhe Assefa[1], Kebede Woldetsadik[2], Solomon Abera[3]

[1]Gambella Agricultural Research Institute, Gambella, Ethiopia.
[2]Haramaya University Vice President for Community Engagement & Enterprise Development,Haramaya University, Ethiopia
[3]Department of Food Science and Technology, School of Food Science, Postharvest Technology and Process Engineering, Haramaya University, Ethiopia.
4

***Corresponding Author: Berhe Assefa Gebrezgi, E-mail:** berheas4j@gmail.com

ABSTRACT

*Raw **Samma**(Urtica simensis) leaves of four genotypes obtained from four local districts(Chancho, Fitche, Debretsige and debrelibanos) were analyzed for their proximate and chemical composition. The ranges of proximate composition that included moisture, crude protein, crude fat, crude fibre, ash and total carbohydrate in raw leaves of the four genotypes (Debrelibanos, Fitche, Debretsige and Chancho) were found to be 84.80-86.40, 18.99-24.50, 2.84-7.01, 7.83-9.43, 19.39-29.48 and 23.33-41.53%, respectively. Ascorbic acid, condensed tannin, pH and Total soluble solid contents of these genotypes ranged 61.82-87.88, 31.80-37.09, 8.31-8.38 and 7.11-8.51,respectively. Similarly, iron, zinc and calcium ranged 36.52-38.40, 6.18-7.13 and 675.711.56 mg/100g, respectively. This study clearly showed that **Samma** leaves have higher micro and macro nutritional content than other commonly cultivated and consumed vegetables. Therefore, consuming this vegetable makes it inexpensive and high-quality nutrition source especially for the poor segment of the population where malnutrition is prevalent.*

Keyword: *Nutritional composition, Samma, Proximate composition, Urtica simensis.*

INTRODUCTION

Wild food plants play a very important role in the livelihoods of communities as an integral part of the subsistence strategy of people in developing countries. They serve as alternatives to staple food during periods of food deficit, as well as valuable supplement for nutritionally balanced diet and as alternative sources of income for many resources' poor communities (Zemede and Mesfin, 2001). Indigenous vegetables supply our body with minerals, vitamins, fibre, quality protein, colour, flavour and are recognized for their therapeutic value and certain hormone precursors (Gupta *et al*., 2005).

Wild vegetables form an important part of the diet just about every household in Africa. Various types of vegetables are mostly cultivated in small back or front yard gardens, but also increasingly in medium to large-scale commercial enterprises. The types of vegetables grown vary with agro-ecology and consumption preferences. Consumer preferences are influenced to an extent by culture, traditions and income available to the household (Sarah and Maina, 2008).

Wild vegetables have rescued thousands of hungry Ethiopians, even in recent years, as it takes much less time for the leaves and young shoots of these plants to become good for eating compared with grains (Zemede,1992). The frequent use of leafy vegetable foods in times of grain shortages in some localities may have led to the tendency to associate eating of leafy vegetables with famine, but their nutritional significance is being increasingly appreciated (Zemede, 1992; Louise, 2007). This long-standing tradition of vegetables in the diet will aid efforts to increase the use of fresh indigenous vegetables by the population (Bosch, 2004).

Stinging nettle (*Urtica* spp) is among wild vegetables used as food in many countries. They are popular, wild, green and widely available when other vegetables are not in season and throughout droughts. They are generally considered as a noxious weed but also used since ancient times as a source of food, fiber and medical preparations (Moody, 1986). Stinging nettle has been used as famine food in many areas of the world, from famine in North India (1783-

1884), Germany in 1816, the great potato famine in Ireland (1845-1849), famines in Scandinavia (1866- 1868), to famine in Ethiopia (1985) (Louise, 2007).Hence the objective of this study was to studyproximate and mineral compositions of fresh samma *(urtica simensis*) leaves and evaluate the suitability of ***Samma*** for consumption as a vegetable product.

MATERIALS AND METHODS

Description of Experimental Site and Materials

The study was conducted at Haramaya University. Proximate composition analysis such as crude protein, crude fiber, ash content, carbohydrate, moisture content, and anti-nutritional content (tannin) determination were carried out at food science laboratory. Crude fat analysis was carried out at the central laboratory. Mineral analysis was carried out at the soil laboratory.

The study was conducted on local stinging nettle (*Urtica simensis*, locally called ***Samma***) .Samples of ***Samma*** leaves grown in a greenhouse were used for the study. Proximate analysis of raw samples was undertaken on four different genotypes collected from four districts in North Shewa Zone of Oromiya National Regional State (Chancho, Debretsige, Debrelibanos and Fitche). About 2 kg of plant material was collected from the site in the morning, placed in plastic bags and brought to the laboratory for the experiment.

Sample Preparation

The edible part of raw ***Samma*** leaves, which was collected from four districts of oromiya was sorted and rubbed between hides to remove the stinging hairs which are responsible for the burning sensation on humans. The non-edible parts(stems)were removed and the leaves were washed with tap water and rinsed with de-ionized water.

Proximate Composition Determination

The moisture, pH, Total soluble solids (TSS) and vitamin C contents of the raw ***Samma*** leaves were analysed on the same day of sample collection. The proximate compositions such as, moisture content, crude protein, crude fat, ash content, crude fiber content and total carbohydrate of raw ***Samma*** was determined according to Association of Official Analytical Chemists (AOAC, 2000).

Proximate compositions of fresh ***Samma*** genotypes obtained from the four districts (Chancho, Debretsige, Debrelibanos and Fitche) were assessed.

Moisture Content Determination

Cleaned dishes were dried in an oven at 130°C for 1 hour and placed in desiccator for 20 minutes to cool to ambient temperature and its mass was weighed as (W_1). Representative fresh ***Samma***leaf samples (10g) was weighed with the dish (W_2) which was mass of sample with mass of dish before drying and dried at 100^{o}C for 6 hours then cooled in desiccators to room temperature. The mass after drying was measured as W_3, which is mass of sample with mass of dish after drying. The moisture content of the sample was calculated by using the following formula:

$$M.C = \frac{W_2 - W_3}{W_2 - W_1} X\ 100$$

Crude Protein Determination

The amount of crude protein in the leaves of ***Samma*** was determined according to AOAC (2000). Ground samples were analyzed for crude protein from each treatment using the micro-Kjeldahl method.

Crude Fat Determination

The crude fat analysis was determined by soxhlet extraction method according to AOAC (2000). Ground sample (3 g) was weighed and added into a thimble. The thimble with sample was placed in 50 mL beaker and dried in an oven for 2 hours at 110^{o}C. A 150-250 mL dried beaker was weighed and rinsed several times with petroleum ether.

Ash Content Determination

Total ash content of the leaves of ***Samma*** was determined by gravimetric method (AOAC, 2000). Crucible was cleaned, dried and ignited at 550 ^{o}C for 1 h and weighed (m_1). Oven dried ground sample (3 g) was weighed (m_2).

Crude Fiber Determination

The crude fiber was analyzed according to AOAC (2000). Ground sample (3 g) was weighed (m_1) and placed in 500 ml beaker. This was digested with 1.25% sulfuric acid, washed with

water, further digested with 1.25% sodium hydroxide and filtered in coarse porous (75 μm) crucible in apparatus at a vacuum of about 25mm.

Total Carbohydrate

The content of total carbohydrate of stinging nettle was determined by subtracting the sum of other constituents from 100.That is, Percent carbohydrate = 100 – (% moisture content + % crude protein + % fiber + % crud fat + % ash).

Calcium Content

The calcium content was determined by atomic absorption spectrophotometer (AOAC, 2000). Sample of 2 g was weighed in to ashing vessel (that has been pre-ignited at 550^{o}C and cooled in desiccator). The sample was carbonized over a blue flame of Bunsen burner and put in the muffle furnace at 500^{o}C until ashing was completed.

Iron Content

Iron content was determined by Atomic Absorption Spectrophotometer (AOAC, 2000). Sample (2.0 g) was taken in to the ashing vessel (that has been pre-ignited at 550^{o}C and cooled in desiccators).

Zinc Content

Zinc content was determined by Atomic Absorption Spectrophotometer (AOAC, 2000). Sample (2.0 g) was taken in to the ashing vessel (that has been pre-ignited at 550^{o}C and cooled in desiccators).

Methods of Data Analysis

Data analysis was done using appropriate statistical methods. Collected data was subjected to analysis of variance (ANOVA) using SAS statistical software. Whenever treatment differences are significant, means they were separated using the Least Significant Difference (LSD) test at 5% probably level.

RESULTS AND DISCUSSIONS

Composition of Fresh *Samma* Leaves

Proximate analysis

Moisture Content

Table 1 presents the proximate composition of the fresh leaves of the four ***Samma*** genotypes. There was significant (P<0.05) difference in the leaf moisture content among the ***genotype*** leaves. The highest moisture content (86.40%) was recorded in the fresh leaves of ***Samma***taken from Chancho, which was statistically at parity with Fitche genotype, while the lowest value (84.80%) was obtained from fresh leaves of Debrelibanos; which also did not statistically differ from the moisture content obtained from fresh leaves of Debretsige genotype.

The moisture content values of the fresh ***Samma*** leaves collected from the four genotypes were found to be higher as compared with the 57.2% reported by Florence *et al*. (2010) in *U.urens* as well as with the 76.8- 79% in *Urtica simensis* reported by Eskedar *et al*. (2013); but lower than those of lettuce (*Lactuca sativa*) (95.5%), Swiss chard (*Beta vulgaris*) (91.5%) and kale(*Brassica carinata*) (87.6%) (EHNRI, 1997).

The differences in moisture content among the ***Samma*** genotypes studied could probably be due to differences in growth behavior of the genotypes. In that genotypes with high moisture content could be late maturity types and, hence, have more succulence. On the other hand, low moisture content of the leaves could be attributed to earliness of the genotypes and higher dry matter accumulation in the shoots. Report by Eskedar *et al*. (2013) also showed variation in the moisture contents of fresh ***Samma*** leaves collected from Debreberhan, Fitch and Ambo, which were 78.9%, 79% and 76.8%, respectively. The relatively, lower moisture contents of these samples compared to those in the present study may be due to differences in the growing environment as well as plant growth stage at which the samples were taken.

Ash Content

The ash content varied significantly (P<0.001) among the genotypes of the ***Samma*** plant. The higher ash content (29.48%) was recorded from fresh leaves of ***Samma*** genotype from Chancho,

whereas the lower value (19.39%) was recorded at Fitche genotype as shown in Table 1. Genotypes from Debretsigie and Debrelibanos recorded intermediate values (21%) that varied statistically from the other two genotypes.

The ash content of the fresh ***Samma*** leaves collected from Chancho genotype was found to be higher compared with the 27.8% reported by Florence *et al.* (2010) in *U.urens* as well as 25.4-26.0% in *Urtica simensis* as reported by Eskedar *et al*. (2013). The differences in ash content among the ***Samma*** genotypes studied could probably be due to differences in mineral uptake and dry matter accumulation among the genotypes.

Crude Protein

The crude protein contents of the leaves of the four ***Samma*** genotypes are shown in Table 1. Chancho genotype was found to have significantly ($P< 0.001$) higher crude protein (24.5%) than those of the rest three genotypes with values of 18.99 to 20.39%, which were statistically on par.The crude protein contents obtained from the genotypes studied in this work were relatively lower than the values reported by Eskedar *et al.*, (2013) who observed more or less similar protein contents with mean value of around 26 g/100 g. Nevertheless, these values were higher than 18.4% crude proteins of *U. urens* as reported by Florence *et al.* (2010) and of different spinach cultivars whose crude protein content ranged from 8.1 to 20.3% (Nordeide *et al*., 1996; Bhardwaj *et al*., 2009).

Similarly, the protein contents of raw ***Samma*** genotypes were found to be higher as compared to commonly cultivated and consumed leafy vegetables in Ethiopia; such as lettuce (15.50%), Swiss chard (12.20%), kale (8.00%) and spinach (18.60%) (EHNRI, 1997). While the differences among the genotypes could be due to differences in their efficiency in the uptake of nutrients and synthesis of proteins, the overall high contents indicates that the leaf of ***Samma*** could be another cheap source of plant protein that could complement the scarce protein source from animal products and pulses for some sectors of our society.

Table 1: Proximate composition of fresh ***Samma*** leaves.

Source	MC (%)	ASH (%)	CP (%)	CFI (%)	CFA (%)	TCH (%)
Fitche	86.07 ± 0.18^{ab}	19.39 ± 0.35^{c}	20.39 ± 0.25^{b}	8.70 ± 0.21^{ab}	6.45 ± 0.08^{a}	35.54 ± 0.14^{c}
Chancho	86.40 ± 0.15^{a}	29.48 ± 0.30^{a}	24.50 ± 0.30^{a}	9.43 ± 0.33^{a}	7.01 ± 0.28^{a}	23.33 ± 0.39^{d}

D-liba	84.80 ±0.40^{c}	21.23±0.44^{b}	18.99±0.15^{b}	7.83±0.29^{c}	3.07 ±0.46^{b}	38.13 ±0.91^{b}
D-tsigie	85.03 ±0.57^{bc}	21.49±0.29^{b}	19.16±0.87^{b}	7.99±0.20^{bc}	2.84 ±0.52^{b}	41.53 ±0.82^{a}
LSD $_{0.05}$	1.20*	1.15***	1.58***	0.86*	1.23***	2.11***

MC= Moisture content, ASH=Ash content. CP= Crude protein, CFI=Crude fiber, CFA= Crude fat, TCH= Total carbohydrate, LSD= Least significance difference, *= Significant, ** = Highly significant, *** = Very highly significant.

Crude Fiber

Crude fiber was significantly varied (P<0.05) among the genotypes and highest fiber content (9.43%) was recorded from Chancho genotype, which is on par with Fitche genotype (Table 1).The lowest fiber value (7.83%) was recorded from the genotype of Debrelibanos, which was not statistical different with the fiber content of genotype from Debretsige. In agreement with this result, Eskedar *et al*, (2013) also reported significant variation in the crude fiber content of ***Samma*** genotypes, ranging from 8.5%- 9.4% in samples from Debreberhan and Ambo. However, the crude fiber contents in this study are very low as compared to that of *U.urens* (16.1%) reported by Florence *et al.* (2010).

On the other hand, the fiber contents of ***Samma*** is by far higher than those of the commonly cultivated leafy vegetables such as spinach (4.6%),lettuce (3.7%), Swiss chard (6.1%) and kale (7.5%)(EHNRI,1997). The relatively higher content of crude fiber in the leaves confirms that low starchy vegetables are the richest sources of dietary fiber(Agostoni*et al*., 1995; Mamun *et al.*, 2012) that has beneficial physiological effects (Mahmod, 1999; AACC, 2001) and genotypes with better composition could be selected and put under cultivation.

Crude Fat

Highly significant (P<0.001) differences were observed in the crude fat content of samma genotypes studied (Table 1). Similar to the crude protein content, significantly higher crude fat (7.01%) was recorded from fresh leaves of ***Samma*** genotype from Chancho, which was statistically on par with crude fat obtained from Fiche genotype. Lowest crude fat (2.84%) was obtained from fresh leaves of Debretsige genotype; however, this value did not statistically vary from the crude fat obtained from fresh leaves of genotype from Debrelibanos. Crude fat content of ***Samma*** leaves obtained from Chancho and Fiche are found to be comparable to the 7.3% reported by Florence *et al.* (2010) from*U. urens*. In general, the crude fat content of all genotypes

in this study was found to be higher than those of spinach (0.80%), lettuce (0.20%), Swiss chard (0.40%), kale (0.80%),and many other leafy vegetables(EHNRI, 1997; Bhardwaj *et al*., 2009).

Total Carbohydrate

The total carbohydrate contents of leaves of ***Samma*** showed significant (P<0.05) difference among the genotypes (Table 1). Debretsige genotype with a value of 41.53% was found to have significantly higher total carbohydrate than the rest three genotypes. While the lowest value (23.33%) was obtained from Chancho genotype, those from Fitche and Debrelibanos exhibited total carbohydrate contents of 35.54, and 38.13 %, respectively, which also significantly varied among each other.

The leaves of ***Samma*** genotypes exhibited low levels of carbohydrate, which is also comparable to values of 25-30% as reported by Eskedar *et al*. (2013) for ***Samma*** obtained from different areasof Ethiopia and for *U. urens* (Florence *et al.*, 2010). A possible explanation for the low carbohydrate content of **Samma** is that the species deposit most of their carbohydrate reserves in the tuberous root; therefore, the leaves are consumed for their mineral and other nutrient contents rather than for their carbohydrates (Duru *et al*., 2002).

Mineral Contents of *Samma* Leaves

Calcium Content

The calcium contents of the leaves of the four genotypes of ***Samma*** are shown in Table 2.Very highly significant (P<0.001) difference were observed in the calcium contents of the genotypes, Chancho showing the highest(711.56 mg/100 g), followed by Fitche, Debretsige and Debrelibanos with values of 704.74, 693.85 and 675.46 mg/100 g, respectively.

The calcium contents of the fresh ***Samma*** leaves collected from the four genotypes were found to be higher compared with 12.3 mg/100g reported by Florence *et al.* (2010) from *U. urens*, while the calcium content from the present study were found to be lower compared with 768.6-793.4 mg/100 g on dry basis reported by Eskedar *et al*. (2013) from *Urtica simensis*. The variation observed among ***Samma*** genotypes in this study might be due to differences in nutrient absorption capacity of the genotypes while deviation from those reported by Eskedar *et al*. (2013) could be due to differences in soil fertility levels on which the plants were grown.

Iron and Zinc Contents

Analyses of leaf samples revealed significant difference (P<0.05) in iron accumulation between the four genotypes of ***Samma*** plant (Table 2). Iron contents of ***Samma*** leaves recorded in genotypes from Debrelibanos and Chancho (38.4 and 37.81mg/100 g, respectively) were found to be statistically higher than those from Debretsige genotype (36.52 mg/100 g). The iron contents from Fitche genotypes was found to be intermediate and statistically at parity with all other genotypes. Likewise, significant variation was observed in zinc content of the genotypes (Table 2). Genotype from Chancho recorded the higher (7.13 mg/100 g) zinc content of leaves while those of Debrelibanos and Debretsige genotypes showed statistically lower values.

The iron content of ***Samma*** leaves in this study is found to be higher than from the values reported by Eskedar *et al.,* (2013) for other samma genotypes. Results of the studied nutrients shows that the ability of ***Samma***to accumulate high amounts of both macro (Ca) and micronutrient elements (Zn and Fe). It is also clear that the concentration of Ca and Fe were relatively higher followed by Zn in all the samples. Since most soil types of Ethiopia are moderately acidic to slightly basic, the plant is expected to have a better accumulation of micronutrients like iron and zinc (Kabata, 2004).

Comparing with other similar vegetables found in Ethiopia and elsewhere, the Fe and Zn content of ***Samma*** leaves are high. The respective amounts of Fe and Zn in Lagose Spinach (*Celosia argentea*), Lenghui (*Urtica dioica*) and Spinach (*Amaranthus Virids*) were 28.3 and 0.2 mg/100 g, 8.9 and 0.15 mg/100 g and 8.8 and 0.25 mg/100 g, respectively(Noor *et al*., 2008). The detection of the high concentration of Zn from trace metals next to iron in ***Samma*** may be because of the fact that these ions are readily transferred from the soil to plants and accumulate in the leavesof the plant (Kabata and Pendias, 2001). Thus, ***Samma*** could be good alternative source for Zn and Iron.

Table 2:Mineral content of fresh ***Samma*** leaves.

Genotype	**Ca (mg/100 g)**	**Fe (mg/100 g)**	**Zn (mg/100 g)**
Fitche	704.74 ± 0.17^{b}	37.52 ± 0.30^{ab}	6.81 ± 0.34^{ab}
Chancho	711.56 ± 0.39^{a}	37.81 ± 0.48^{a}	7.13 ± 0.21^{a}
Debrelibanos	675.46 ± 0.46^{d}	38.40 ± 0.12^{a}	6.25 ± 0.23^{b}

Debretsige	693.85 $\pm$0.23^{c}	36.52 $\pm$0.37^{b}	6.18 $\pm$0.12^{b}
LSD $_{0.05}$	1.09***	1.12*	Ns

Ca=Calcium, Fe=Iron, Zn=Zinc, and LSD=Least significance difference, *= Significant, ** = Highly significant, *** = Very highly significant

Chemical Properties of Leaves of *Samma*

PH Value

The pH values of the four ***Samma*** genotypes are shown in Table 3. All the values indicated some alkalinity with values of 8.31 to 8.38 in the genotypes, with no statistical difference (P>0.05) among them. However, the slightly higher pH (8.38) and lower (8.31) pH values were recorded from Debrelibanos and Fitche genotypes, respectively, indicate some how genetic difference in this trait. The result showed that ***Samma*** leaves have higher amount of pH value than other vegetables grow in Ethiopia and elsewhere (Bad Bug Book). This alkaline nature of the plant could be the reason to attract many local farmers to use as medicine for gastric problems.

Ascorbic Acid (Vitamin C)

As shown in Table 3, all genotypes were observed to have statistically (P<0.05) different ascorbic acid contents in their leaves. The highest ascorbic acid (87.88 mg/100 g) was recorded in genotype from Debretsige, followed by value of Fitche genotype. The least ascorbic acid value of 61.82 mg/100 g was recorded in Chancho genotype, which was exceeded by that of genotype from Debrelibanos with ascorbic acid value of 63.30 mg/100 g.

These higher ascorbic acid values are comparable with that of *Basella rubra* (83.7 mg/100 g), higher than that of Bonongwe and mowa (*Amaranthus hybridus*) (64 mg/100g) and Lenghui (*Urtica dioica*) (45.3 mg/100 g) (Nordeide *et al*., 1996; Muchuweti *et al*., 2009).The ascorbic acid content of raw ***Samma*** leaves were higher as compared to commonly cultivated and consumed green leafy vegetables in Ethiopia such as spinach(32.00 g/100 g), lettuce (6.00 g/100 g) and Swiss chard (18.00 g/100 g) and Kale (20.00 mg/100g) (EHNRI. 1997). However, the mean ascorbic acid contents of the studied genotypes were found to be lower than that of values from the ***Samma*** genotypes studied by Eskedar *et al*. (2013) which had values ranging from 82.65 -86.6 mg/100 g. The variation could be due to genotypic and growing environment differences in the two studies.

Total Soluble Solids

The total soluble solid contents of the leaves of the four ***Samma*** genotypes are shown in Table 3. Significant (P<0.05) differences were observed among the values of all genotypes and fresh leaves of genotype from Debrelibanos showed the highest total soluble solids (8.51 ^{o}Brix). On the other hand, the least TSS value of 7.11 ^{o}Brix was recorded in genotype from Fitche.

Anti-nutritional Contents of *Samma* Leaves

Significant (P<0.05) differences were observed in tannin contents of fresh leaves of ***Samma*** genotypes (Table 3). Debretsige genotype gave higher (37.09 mg/100g of sample) tannin content. The lower tannin contents from Fitche, Chancho and Debrelibanos however, were not statistically different from each other with the values of 31.97, 31.80 and 32.33 mg/100g, respectively. The values of tannin contents in the present study were higher than those reported by Eskedar *et al.* (2013) for leaves of ***Samma*** genotypes from Debreberhan, Ambo and Fitche genotypes, which were25.3, 27.0 and 28.2 mg/100 g, respectively, on dry weight basis.

Table 3:pH, AA, TSS and Tannin content of fresh *Samma* leaves.

Genotype	pH	AA (mg/100g)	TSS (^{o}Brix)	Tannin (mg/100 g)
Fiche	8.31 ± 0.01^{a}	85.53 ± 0.64^{b}	7.11 ± 0.06^{d}	31.97 ± 1.13^{b}
Chancho	8.34 ± 0.03^{a}	61.82 ± 0.26^{d}	8.30 ± 0.06^{b}	31.80 ± 0.29^{b}
Debrelibanos	8.38 ± 0.03^{a}	63.30 ± 0.20^{c}	8.51 ± 0.06^{a}	32.33 ± 0.55^{b}
Debretsige	8.37 ± 0.01^{a}	87.88 ± 0.52^{a}	7.52 ± 0.06^{c}	37.09 ± 0.78^{a}
$LSD_{0.05}$	0.07^{NS}	1.44***	0.19***	2.46***

pH= Power of hydrogen, AA=Ascorbic Acid, TSS=Total soluble solid, LSD=Least significance difference, NS = Not significance, *= Significant, ** = Highly significant, *** = Very highly significant.

CONCLUSIONS

Wild food plants play a very important role in the livelihoods of communities as an integral part of the subsistence strategy of people in developing countries. Locally available wild food plants serve as alternatives to staple foods during periods of food deficit and serve as valuable supplement to nutritionally balance diet for many resources poor communities. Nettle is one of wild plants found all over the temperate areas of the world and **Samma** (*Urtica simensis*), which is one of species of nettle endemic to Ethiopia, is used as potherbs in some areas of Ethiopia.

Therefore, the study was conducted to study the proximate and mineral compositions of fresh samma *(urtica simensis*) leaves and evaluate the suitability of ***Samma*** for consumption as a vegetable product.

This study clearly showed that ***Samma*** leaves have higher micro and macro nutritional content than other commonly cultivated and consumed vegetables. Therefore, consuming this vegetable makes it inexpensive and high-quality nutrition source especially for the poor segment of the population where malnutrition is prevalent.

However, since the study was conducted with only four genotypes, further study is suggested including more genotypes and other method of processing to come up with optimal processing for optimal nutritional and anti-nutritional contents of ***Samma***.

REFERENCES

Agostoni, C., Riva, E. and Giovannini, M. 1995. Dietary fiber in weaning foods of young children. *Pediatriology* 96: 1002-1005.

AOAC. 2000. Association of official analytical chemists, official method analysis (Vol, 2 17 th ed.) of AOAC. International Washington, DC, USA 925.09, 923.03, 979.09, 962.09, and 4.5.01.

Bhardwaj, R., Singh, R.K. and Sureja, A.K. 2009. Nutritionally rich wild vegetables of tribal Communities of north east India: Gaining insights on valuable traditional bicultural recourses. In: Proceedings of the international symposium on underutilized plants for food security, nutrition, and income and sustainability development. Jaenicke, H. and Ganry, J. (Eds). Volume1 International Society for Horticulture Science(ISHS), Belgium.

Bosch, C.H. 2004.*Urtica* massaica Mildbr, Prota 2: Vegetables/Legumes Record display *Bot.* 70(1-2): 28-39.

Duru, C.C. and Uma, N.U. 2002. Post-harvest spoilage of cormels of Xanthosoma sagitttifolia (L). *Journal of agriculture and food chemistry* 14: 277-283.

Eskedar Getachew, Gulelat Desse and Getachew Addis. 2013. Nutritional Profile of ***Samma*** (*UrticaSimensis* Steudel) Leaves Grown In Ethiopia; *International Journal of Science Innovations and Discoveries(IJSID)*Pp153-160.

Florence, J., Adedapo, A., Aliero, A. and Afolayan, A. 2010. Polyphenol and biological activities of leaves extracts of *Argemone subfusiformis* (Papaveraceae) and *Urtica urens* (*Urticaceae*) *Revistade Biological Tropical*. 58 (4): 25-28.

Food Composition Table for use in Ethiopia (EHNRI). 1997. Ethiopian health and nutrition research institute.

Gupta, S., Lakshmi, A.J., Manjunath, M.N. and Prakash, J. 2005. Analysis of nutrient and ant nutrient content of underutilized green leafy vegetables. Learning with Technology (*LWT)* 38: 339-345.

Kabata-Pendias A. 2004. Soil plant transfer of trace elements-an environmental issue. Geoderma, 122: 143–149.

Kabata-Pendias, A. and Pendias, H. 2001. Trace elements in soils and plants, Boca Raton, Florida, USA: CRC Press.

Louise, B.P, 2007. Stinging Nettle famine food and spring tonic. Roots and branches, the newsletter of Mennonite Historical Society of BC. ”What we have heard and seen we will pass to the next generation” (http://www.musikantendorf-hundeshagen.de/html/biogra.html).

Mahmod, F., 1999. Dietary fiber of some Bangladeshi foods and meals: A compositional analysis. INFS, University of Dhaka. Bangladesh.

Mamun Md. A. A., R. Ara, H. U. Shekhar, A. T. M. A. Rahim and Md. L. Bari,2012. Effect of Cooking on Selected Nutritional and Functional Properties of Red amaranths. (www.afabjournal.com).

Moody, B., 1986. The stinging truth about nettles.” *Drying times”* (www.dryit.com/nettles.html).

Nordeide, M.B., Hatoly, A., Folling, M., Lied, E. and Oshang, A. 1996. Nutrient composition and nutritional importance of green leaves and wild food resources in an agricultural district, koutiala, in southern Mali. *International Journal of Food Science and Nutrition* 47:455-468.

Sarah, M. and Maina, M, 2008. Vegetables in East Africa. Elewa Publications, Farming Resources Series; (www.elewa.org).

Zemede Asfaw and Mesfin Taddese. 2001. Prospects for sustainable use and development of wild food plants in Ethiopia. *Economic Botany* 55:47-62.Zemede Asfaw. 1992. The indigenous food plants, food preparations from indigenous crops and home gardens in Ethiopia. Unpublished project report for UNU.