

CONTENT OF MINERAL SUBSTANCES BETWEEN THE TWO ONION CULTIVARS

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Abstract

*The purpose of two years of work was the determination of some chemical elements in onion (*Allium cepa* L.) between the two cultivars: Stuttgarter-Netherlands and cultivar of Prizren-Kosovo in different periods of planting and various preservations conditions of bulbs at room temperature and +5(°C). In the first experiment year is planted the seed while in the second year was made the bulb.*

Is ascertain is a difference between cultivars in the content of minerals substances.

Key words: Cultivars, Stuttgarter-Netherlands, Prizren-Kosovo, onions.

1. INTRODUCTION

Onions is among the most ancient cultures known to mankind it also cultivated ancient peoples for which they have already used as food and they used as medicinal plants. In Kosovo the annual consumption of onions ranges close 14.929 tone, per capita is 7.46 kg. (Kaçi 2010). Content of dry material in fresh bulbs varies from 8-12% while in conservation bulbs 14-18%, fresh bulbs is affluent with carbohydrates 6-8%, proteins 05-1.5% ,and mineral materia. Onion unless food is also used in the treatment and prevention of a number of diseases including cancer, coronary heart disease, obesity, diabetes, hypercholesterolemia type 2, hypertension, cataract and gastrointestinal disorders for example: colic, flatulent colic and dyspepsia , (Lanzoti 2006).

2. MATERIAL AND METHODS

2.1 MATERIAL.

It is used (seeds) planting for both cultivars (Stuttgarter-Netherlands) and (Prizren-Kosovo) with germination abilities 85-95 %. Also in the second year are planted bulbs.

Photo 1. seeds for cultivation of onion bulbs



Seeds, P. Kosovo



Seeds, Sh. Netherlands

2.2 METHOD

Experimental area is divided into two parts, in first year 2011 is planted the seeds of (Stuttgarter-Netherlands) cultivar and (Prizren-Kosovo) cultivar while in the second year 2012 is planted bulbs for both cultivars.

The size of the area for planting the seed is divided into two parts for two cultivars with six (6) square meter from three repeats, the deadlines between two surfaces experimental planting has been two weeks. The harvest of bulbs was made at 28.07.2011 of the two cultivars where four samples taken with 2.5 kg weight and stored in the agriculture-Vegetable Laboratory at the Faculty of Agriculture and Veterinary, Prishtinë.

The first sample of (Stuttgarter-Netherlands) cultivar bulbs were preservation at room temperature and second sample of (Stuttgarter-Netherlands) were preservation at temperature +5(°C), also for (Prizren-Kosovo) cultivar bulbs the first sample preservation at room temperature and second sample were preservation at temperature +5(°C).

Planting of bulbs is made in April 2012, during vegetation are also taken other agrotechnics provision to protect the plants. Onions for the two cultivars were harvested in August 2012, where taken four samples with weight 1kg and were sent to the laboratory to analyze the content of chemical elements: magnesium (Mg), calcium (Ca), sodium (Na) and potassium (K), the results were processed statistically.



Photo 2. Experimental surface during cultivation of onion bulbs

3. RESULTS AND DISCUSSION

Based on two years of work on the Influence of cultivar, planting deadlines and preservation conditions of bulbs in quality of onions for (Stuttgarter-Netherlands) cultivar and (Prizren-Kosovo) cultivar, analyzes show that these factors have affected the quality, content of mineral substances, magnesium (Mg), calcium (Ca), sodium (Na) and potassium (K).

The results show a difference between cultivars in the materials-mineral content.

The average value of magnesium (Mg) for (Stuttgarter-Netherlands) cultivar is 9.45%, while the average value of magnesium (Mg) of (Prizren-Kosovo) cultivar is 7.40%, the difference in the content of this chemical element is 2.05% more higher to (Stuttgarter-Netherlands) cultivar.

Also, the average value of calcium (Ca) has difference in content between the two cultivars (Stuttgarter-Netherlands) which is (35.16%) and (Prizren-Kosovo) cultivar which is (48.00%), the difference of this value is (12.84 %) more higher to(Prizren-Kosovo)cultivar.

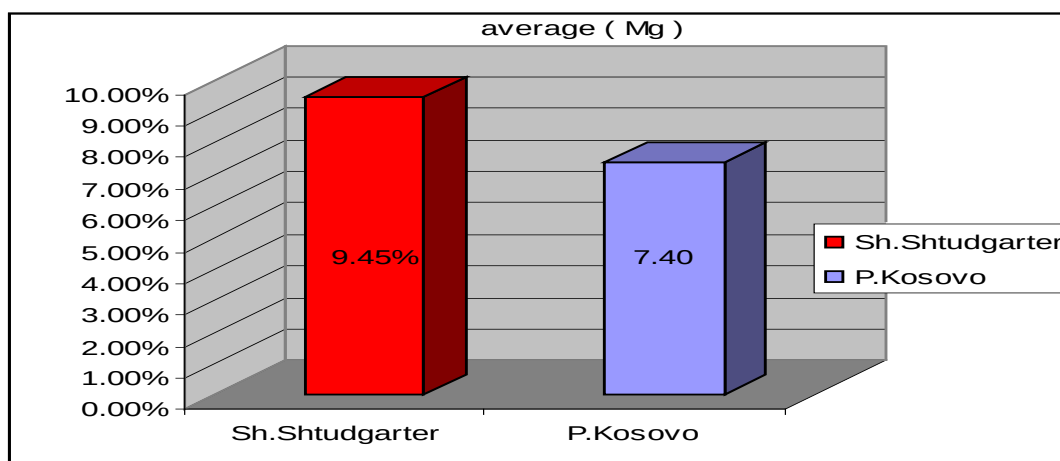
The average value of Sodium (Na) has difference between the two cultivars (Stuttgarter-Netherlands) which is (17.50%) and (Prizren-Kosovo) cultivar which is (35.71%) the difference of this value is (18.21 %) more higher to(Prizren-Kosovo) cultivar.

The average value of Potassium(K) has difference between the two cultivars (Stuttgarter-Netherlands) which is (196.00%) and (Prizren-Kosovo) cultivar which is (223.33%) the difference of this value is (27.33%) more higher to(Prizren-Kosovo) cultivar.

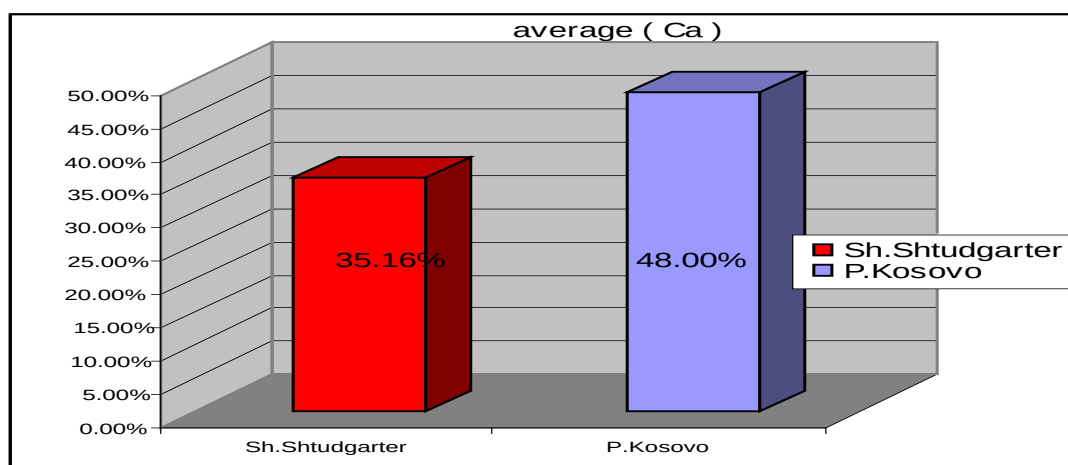
The results for Potassium(K) (825) and Sodium (Na) (33) the (Millikan 2012), coincide with our results. Th results of onions for elements (Mg 9.5%), (Ca, 30%),(K200%), (Na 10%):(Cunningham et al. 2001) results similar to our results.

Based on the results obtained, it can be concluded that the (Prizren-Kosovo) cultivar is more advanced with mineral substances that we have analyzed (Ca,Na,K),compared with (Stuttgarter-Netherlands) which resulted in only the element of magnesium (Mg) have higher value compared to the (Prizren-Kosovo) cultivar.

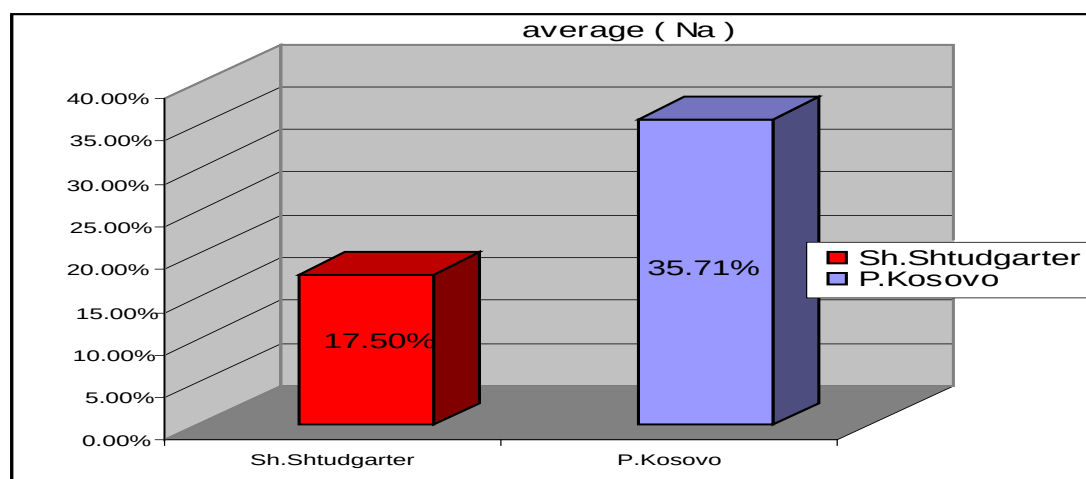
Results for the parameters analyzed in the graph 1,2,3,4,



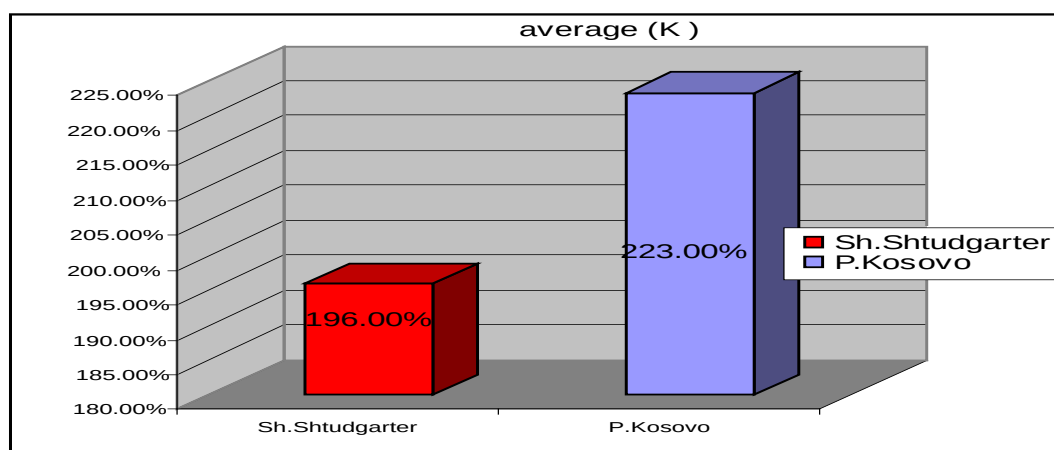
Graph. 1. The content of (Mg) cultivar. Sh-Netherlands, P-Kosovo



Graph. 2. The content of (Ca) cultivar. Sh-Netherlands, P-Kosovo



Graph. 3. The content of (Na) cultivar. Sh-Netherlands, P-Kosovo



Graph. 4. The content of (K) cultivar. Sh-Netherlands, P-Kosovo

The results for the two cultivars statistically processed are presented in tabular form with numbers 1 and 2.

The difference between minimum and maximum value in the content of mineral substances of Mg,Ca,Na,K for both cultivars is not significant for the probability level $LSD < (0.01)$, dhe $< (0.05)$.

Tab.1. Descriptive statistics of the onion cultivar of (Shtutgarter, Netherlands)

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std.Error	Statistic	Statistic
Mg	6	3.30	7.40	10.70	9.4500	0.47381	1.16060	1.347
Ca	6	51.00	17.00	68.00	35.1667	7.48072	18.32394	335.767
Na	6	26.00	8.00	34.00	17.5000	3.92216	9.60729	92.300
K	6	89.00	145.00	234.00	196.0000	11.91078	29.17533	851.200

Mg,Ca,Na,K, $LSD < 0.05 = (**)$, Mg,Ca,Na,K, $LSD < 0.01 = (**)$,

Tab2. Descriptive statistics of the onion cultivar of (Prizren, Kosovo)

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std.Error	Statistic	Statistic
Mg	6	7.60	2.90	10.50	7.4067	1.15206	7.963	7.963
Ca	6	24.00	37.00	61.00	48.0000	4.31068	111.492	111.492
Na	6	30.70	18.30	49.00	35.7167	5.15037	159.158	159.158
K	6	159.00	148.00	307.00	223.3333	22.92403	3153.067	3153.067

Mg,Ca,Na,K, LSD < 0.05= (**),Mg,Ca,Na,K, LSD < 0.01= (**),

4. FINDINGS

Based on two years of study commencing production of bulbs of the two cultivars (Stuttgarter-Netherlands) and (Prizren-Kosovo) in 2011 and planting bulbs in 2012 in the south of Kosovo respectively in Suharekë, influence of cultivars, planting time and preservation conditions bulbs have influenced to the content of mineral substances respectively (Mg),(Ca),(Na),(K) between cultivars.



Photo 3. eksperimentnale surface during onion cultivation

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