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Research and Lab Test of Some Wheat Varieties from Hungary of Peja Region

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Abstract: The object of study is investigation of suitability of certain cultivars of wheat (Triticum aestivum L) of Hungary. In research have been 5 cultivars of wheat: Subo, Kolo, Marshall, Beres, meanwhile as comparative cultivar Europe 90. Investigations were conducted in Dukagjin Plain (in Arbnesh in agricultural institute research farm of Kosova, Peje-Dukagjini Plain, Research, have been tested yield (kg/ha), weight,(of 1000 seeds in gram), hectoliter weight (kg), protein content (%), humidity (%), gluten and sedimentation. Agro-climatic and pedological data in Kosova, compared with yields obtained in culture wheat show no use of genetic potential of cultivars that are cultivate in. For this reason should be applied a contemporary agro-technics to be use genetic potential, and got higher yields. The results had indicated that there were significant statistical differences of different levels for researched features to all cultivars in plots compared with the standard (Europe 90) and between localities.

Keywords: winter wheat, weight of 1000 seeds in gram, hectoliter weight kg, yield kg/ha

Intruduction

Wheat (*Triticum aestivum* L.) is annual plowing culture from family *Poaceae* (*Gramine*) which is cultivated mostly in world. Current forms derived from some form of wild wheat (Triticum ovate, Triticum monococcoides and Egylops Tricoccoides), which are created most current varieties [1] [2]. Wheat is not only the most important arable plant, but also the most important agricultural production and is generally the most important output of labor and human activity in the world. Most types of current wheat varieties derived from regions of the Asian continent. Wheat has prevalent role in mankind food, so it economical importance is primary and strategically, meanwhile it user value, biological, human food, bio-productivity, and industry is irreplaceable [7] [13]. Economical important of wheat seed can be assessed from diversity of manufacture and profit of industrial products as are: flour, bread, dough, confectionary, cakes, starch, alcohol, dextrose, cellulose, glutamine, stick, paper, cardboard, covering, beer industry, drugstore, feedstuff etc [16]. Wheat cultivation and produce in this quantity in Kosova is aim and obligation to fulfill needs and suchlike requests for wheat. Wheat produce, in one hand wheat producer ensure rentable production and material income, ensure food for family and in other hand contribute in increase fund of general food which each day is become strategyc article of present world [15] [4]. Given the role and importance of wheat as a crop plant important field in our country, our study was conducted and intended to in vitro wheat cultivars to investigate these parameters, weight of 1000 seeds, weight hektolitar yield, humidity proteins, glutenin, sedimentation which from the research have satisfying results.

Economic importance of wheat

In the world's total production of arable crops, cereals navy participated with 51% of all cultivated surface with different cultures around 1.5 billion / ha, this seen as important cereals (wheat, barley, rice, corn, rye, oats, etc.). While wheat as crop only occupies 1/3 of all grain surfaces [3] [10]. Kosova lies in the central part of the Balkans, 2.1 mil. Resident, 10.077 km^2 total area, 400,000 ha of exploitable 200,000 ha cereals, wheat and corn, with some rye and barley continental and Mediterranean climates. Kosova according to agro-ecological conditions and terrestrial production is divided in two directions: Dukagjini Plain: 330-500m LD, rainfall 780 mm / year, Temp. 11.5 ° C and the Plain of Kosova: 500-600 m LD, rainfall 640 mm / year, Temp. 10°C.

Materials and Methods

Experiments were set according to the method of randomized blocks in three replications. The area of each experimental plot was 10 m^2 (10 m length x 1 m width) [6][9]. Research carried out in Kosova's agro-climatic region (in Arbnesh, Kosova Institute of Agriculture research farm, Peja Dukagjini Plain, and Pestova Kosova Plain, private property company "Pestova". Planting is done with experimental planter plots Hege type 80. Investigated parameters are: Weight of 1000 seeds (g), Weight hektolitare (kg) Yield (kg/ha), moisture content (%), protein content (%), Gluten, sedimentation [5] [8]. In tracking these parameters on grain quality, many factors affect the external environment such as: planting time temperature, humidity respectively irrigation, method of feeding, respectively the use of fertilizers, planting wheat seed size and depth of plantingsystem of cultivation and subsistence farming [12] [11].

Results

In lab condition to wheat cultivars are researched these parameters: weight of 1000 seeds, hectoliter weight, Content of protein, gluten and sedimentation to wheat cultivars.

Table 1. Wheat cultivars tested parameters

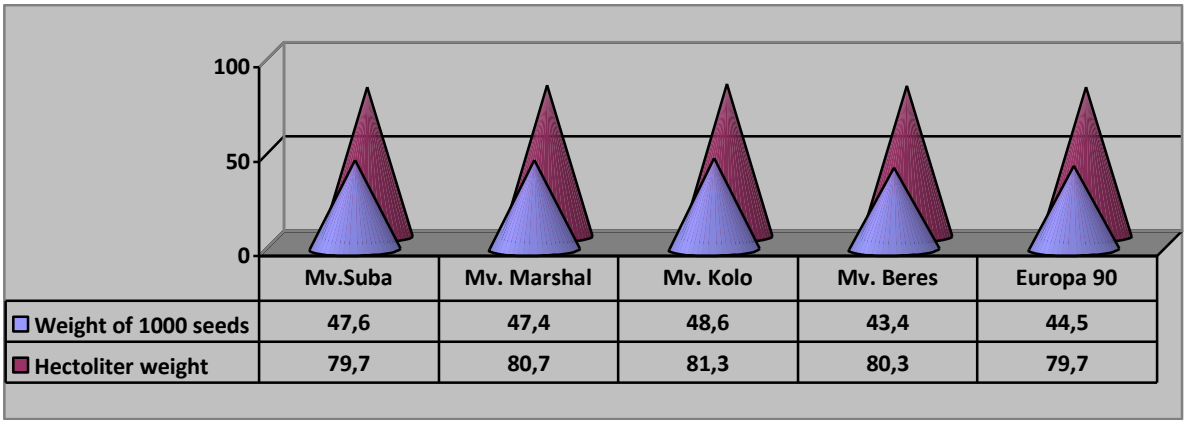
Cultivars	Locality	Weight 1000 seeds (gr)	Hectoliter weight (kg)	Yield kg/ha
		Wheat		
Mv. Suba	Pejë	47.60	79.70	7.800
Mv. Marshal	Pejë	47.40	80.70	7950
Mv. Kolo	Pejë	48.60	81.30	7750
Mv. Beres	Pejë	43.40	80.30	7500
Europa 90	Pejë	44.50	79.70	6200

From table 4 is seeing there have been emphasized differnces beteween test wheat cultivars in relation with standard cultivars (Evropa 90)

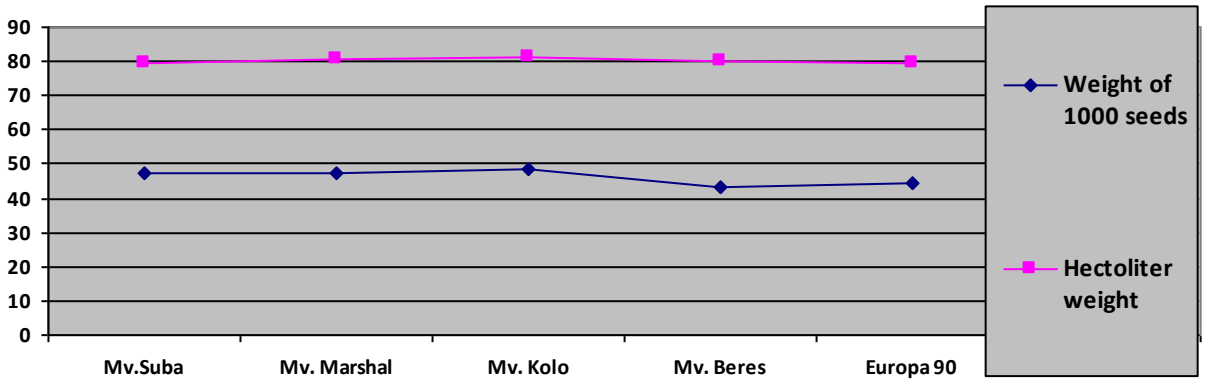
- Regarding weight of 1000 seeds. In general higher weight of 1000 seeds (absolute weight) is asceratin to cultivar Mv.Kolo (48.60 gr) while less weight of 1000 seeds (absolute weight) is ascertain to cultivar Mv. Beres (43.40 gr) beside standard (Europa 90, - 44.50 gr)

- Regarding hectoliter weight (kg), are ascertain differences between test cultivars and among standard cultivars and in this direction higher hectoliter weight was cultivar Mv. Kolo 81.30kg meanwhile less hectoliter weight to cultivar Mv. Subo 79.70 kg beside standard cultivar Europa 90 – (79.70 kg).
- Regarding yield (kg/ha) . from research of those varieties, productivity mass has had Mv. Marshall with 7950 kg/ha while less productivity Bersh 7500 kg/ha beside standard cultivar Europa 90 – (6200 kg/ha).

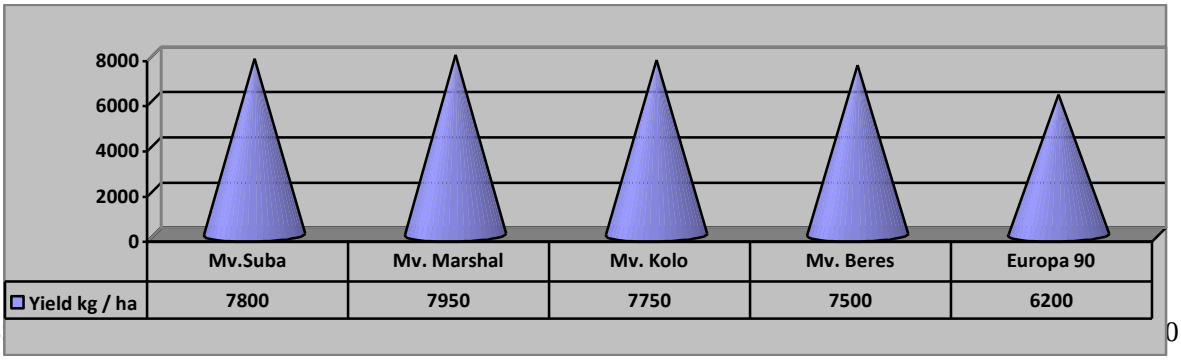
Graphs 1. Weight of 1000 seeds, hectoliter weight.



Graphs 2. Weight of 1000 seeds, hectoliter weight.



Graphs 3. Yield kg / ha



Graphs 4. Yield kg / ha

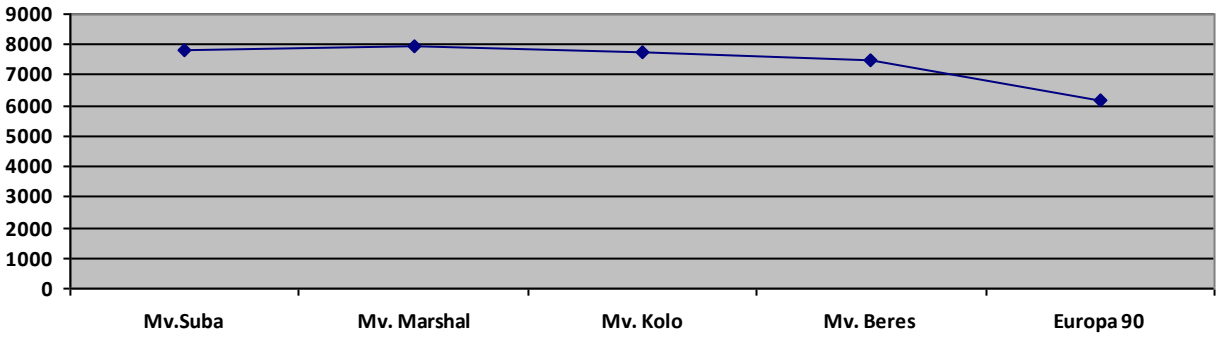


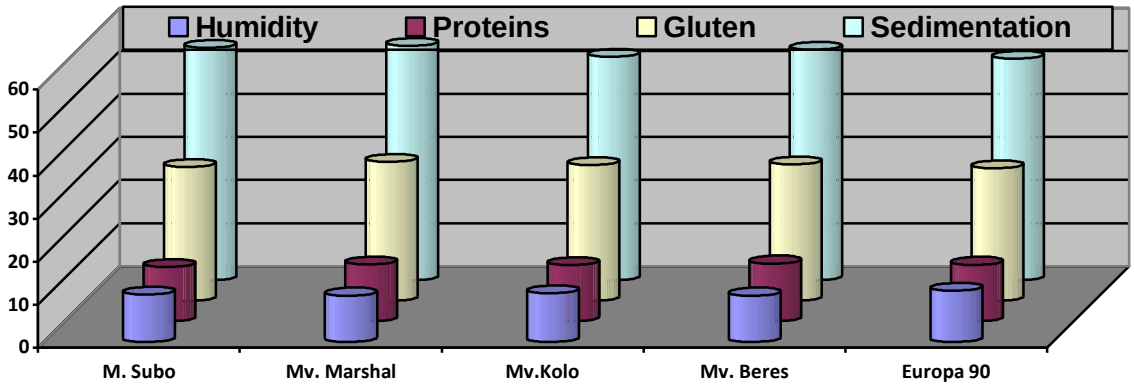
Table 2. Content of protein, gluten and sedimentation to wheat cultivars

Cultivars	Locality	Humidity (%)	Protein (%)	Gluten	Sedimentation
Mv. Subo	Pejë	10.9	12.6	31.0	54.0
Mv. Marshall	Pejë	10.7	13.2	32.2	54.4
Mv. Kolo	Pejë	11.2	13.0	31.5	51.9
Mv. Beres	Pejë	10.7	13.4	31.6	53.5
EVROPA 90	Pejë	11.8	13.1	30.8	51.4

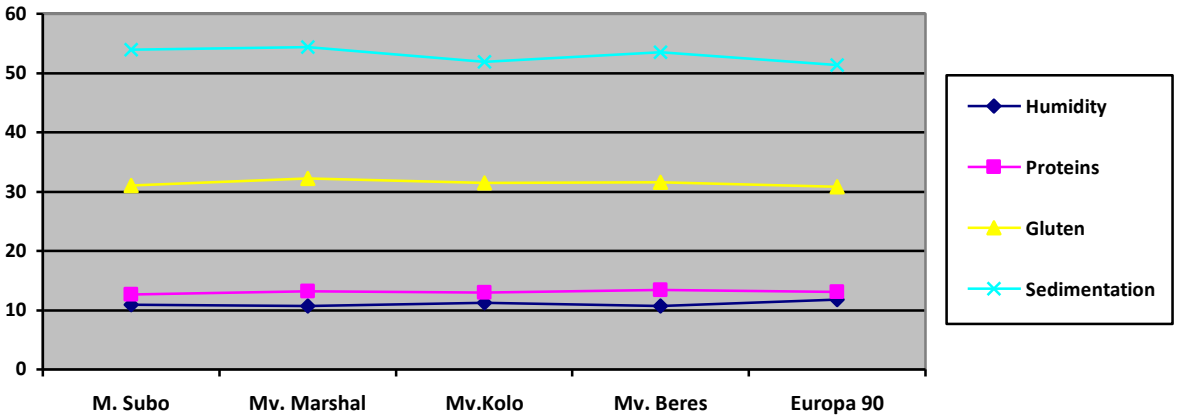
From table 5. It cab be seen that there has been emphasize differences between test cultivars of wheat in relation with standard cultivars (Evropa 90)

- Regarding humudity content. In general less content of humudity is ascertain to cultivar Mv. Beres (10.7 %) meanwhile higher content of humudity to cultivar Mv. Kolo (11.2 %). beside standard cultivar (Europa 90, - 11.8%)
- Regarding protein weight (%), are asceratin differences between searched cultivars and among standard cultivars and in this direction higher procentuage of protein was to cultivar Mv. Beres (13.4 %) while less procentuage of protein was cultivar Mv. Subo (12.6 %). beside standard cultivar Europa 90 - (13.1 %).
- Regarding content of gluten are asceratin differences between researched cultivars and among standard cultivars and in this direction higher procentuage of gluten has been to cultivar Mv. Marshal (32.2) while less to cultivar Mv. Subo (31.0). Beside standard cultivar Europa 90 - (30.8).
- Regarding sedimentation are ascertain differences between researched cultivars and among standard cultivars and in this direction higher percentuage of sedimentation has been to cultivar Mv. Marshal (54.4) meanwhile less procentuage to cultivar Mv. Kolo (51.9) beside standard cultivar Europa 90 - (51.4).

Graphs 5. Presenation of humudity, protein, gluten.



Graphs 6. Presenation of humudity, protein, gluten and sedimetation



Conclusion

Based of lab test of wheat originated from Hungary can be concluded:

1. To the test cultivars of wheat there has been emphasize differences between wheat test cultivars in relation with standard cultivars (Evropa 90), regarding weight of 1000 seeds. In general higher weight of 1000 seeds (absolute weight) is ascertain to cultivar Mv.Kolo (48.60 gr) meanwhile less weight of 1000 seeds (absolute weight) is ascertain to cultivar Mv.Beres (43.40 gr) beside standard cultivar (Europa 90, - 44.50 gr).
2. Regarding hectoliter weight (kg), are ascertain small differences between test cultivars and among standard cultivars and in this direction higher hectoliter weight have been to cultivar Mv. Kolo 81.30kg meanwhile less hectoliter weight to cultivar Mv. Subo 79.90 kg beside standard cultivar Evropa 90. 79.70 kg.
3. Regarding yield (kg/ha). From research of these varieties higher mass productivity has been to Mv. Marshall me 7950 kg/ha meanwhile less productivity Beres 7500 kg/ha beside standard cultivar Europa 90 – (6200 kg/ha).

4. Regarding humudity in %. In general less weight (% humudity) is ascertain Mv. Beres 10.7 % meanwhile higher variety Mv. Kolo 11.2 % beside standard Evropa 90 (11.8%)
5. Regarding content of protein are ascertain small differences between test cultivars and among standard cultivar and in this direction higher procentuage has cultivar Mv. Beres 13.4% meanwhile less percentuage cultivar Mv. Subo 12.6% beside standard cultivar Evropa 90 (13.1).
6. Regarding gluten are asceratin small differences between test cultivars and among standard cultivar and in this direction higher weight was to cultivar Mv.Marshal 32.2, while less weight to cultivar Mv. Beres 31.0.beside standard cultivar Evropa 90 (30.8).
7. Regarding sedementation are ascertain small differences between test cultivars and among standard cultivar and in this direction higher was to cultivar Mv. Marshal 54.4, meanwhile less to cultivar Mv. Kolo 51.9 beside standard cultivar Evropa 90 (51.4).
8. Kosovo's agro-climatic and pedologyc data, compared with obtained yield in wheat culture shows for no use of genetic potential to cultivars which are cultivate in. For this reason should applied contemporary agrotechnics to use genetic potential and to got higher yield. Kosovo has good agro-ecologycal condition for cultivation of cereals.

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