STUDIES CONCERNING SOWING DENSENESS ON CONTENT IN MOIST GLUTEN AT THE ARIESAN, TURDA 2000 AND ARDEAL WINTER WHEAT SORTS

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Abstract. *This present paper presents the studies upon the influence of different sorts of sowing denseness on content in moist gluten at three sorts of winter wheat from Tarnaveni, Mures County, in 2005, having in view the best establishment of the sowing denseness.*

Key words: sowing denseness, winter wheat, moist gluten

INTRODUCTION

Wheat is belonging to those plants of a major importance, both throughtout the world and in Romania, being the main bread grain on the earth.

The chemical compositions of grain wheat and before all the panification features, they are determined by a complex genetic, ecological and technological factors, respectively the biological resources of the cultivated genotypes, of the climate, soil and orography, as well as of the level of the applied technologies (the rotation of crops, the preparation of the soil, the fertilization of the soil, sowing, the tilling of the ground and harvesting) (Salontai Al., 1982)

An emanation of these reasons represents the research which makes the objective of this doctor's thesis, with the object of establishing interaction between some autochthonous wheat genotypes and technological factors in ecological conditions from Tarnaveni, Mures County, situated in Tarnava region, for the expansion of the productivity of the yield production and the improvement of the panification quality of these cereal crops.

MATERIAL AND METHOD

The experiment was made in Coroisinmartin, Mures County between 2004 and 2006.

The experiment was organized after the method of the subdivided parcels of bifactorial type with random location, the experimental factors being the following:

- Factor A, the genotype, with divisions: a1-Ariesan; a2-Turda 2000; a3-Ardeal
- Factor B, sowing denseness, with divisions: b1- 300 germinal grains/square metre; b2- 400 germinal grains/square metre; b3- 500 germinal grains/square metre; b4- 600 germinal grains/square metre.

From the combinations of the factors and parcels resulted an expriment of the type 3x4=12 variants.

In model interpretation, there was found the mean of the all the variants. The sowing area of a parcel was 36,25 square metre, respectively 10 metres length harvesting and 3,625 metres width (the width of a SUP 29 sowing-machine) and the experiment was repeated three times.The content in moist gluten was determined according to 90-88 State Standard (STAS) through washing with sodic chloride. The study statistics of the experimental results were made through the analysis of variability.

RESULTS AND DISCUSSION

The results obtained after the determination in the laboratory are presented in table 1, respectively diagram 1.

Analysing the data presented in table 1, respectively diagram 1, it is noted that the highest value concerning the content in moist gluten was obtained at the Ardeal sort (V9).

At the Ariesan sort the highest values have those variants which have the sowing denseness of 300, respectively 600 germinal gains/square metre. At the Turda 2000 sort the highest values have those variants which have the sowing denseness of 300, respectively 600 germinal gains/square metre. At the Ardeal sort the highest values have those variants which have the sowing denseness of 300, respectively 400 germinal grains/square metre.

The results obtained after the determination in the laboratory relating to the interaction of the two factors taken in research are presented in table 2, respectively diagram 2. Analysing the data from table 2, respectively diagram 2 it can be established that both in view point of the used genotype and from point of view of sowing denseness there is no significant difference between sorts.

It is seen that at the Ariesan sort the content in gluten is the highest at the denseness of 300, respectively 600 germinal grains/square metre, at the Turda 2000 sort is at the denseness of 600, respectively 300 germinal grains/square metre and at the Ardeal sort at the denseness of 300, respectively 400 germinal grains/square metre.

Table 1

The content in moist gluten according to the genotype and the sowing denseness (2005)

The variant	The combination	Content in gluten			Mean		Difference	Significance
		R 1	R 2	R 3	%	%		
		%	%	%				
1	a_1b_1	35,80	35,90	35,80	**35,83**	**115,3**	+ 4,76	***
2	a_1b_2	32,20	32,80	32,70	**32,57**	**104,8**	+ 1,49	***
3	a_1b_3	28,00	28,10	28,00	**28,03**	**90,2**	- 3,04	000
4	a_1b_4	35,70	35,90	35,50	**35,70**	**114,9**	+ 4,62	***
5	a_2b_1	30,00	30,20	30,00	**30,07**	**96,7**	- 1,01	000
6	a_2b_2	28,00	28,00	27,90	**27,97**	**90,0**	- 3,11	000
7	a_2b_3	28,00	28,00	27,80	**27,93**	**89,9**	- 3,14	000
8	a_2b_4	32,00	32,20	32,00	**32,07**	**103,2**	+ 0,99	***
9	a_3b_1	36,00	36,20	36,00	**36,07**	**116,1**	+ 4,99	***
10	a_3b_2	29,60	29,80	29,60	**29,67**	**95,5**	- 1,41	000
11	a_3b_3	28,00	28,60	28,00	**28,20**	**90,7**	- 2,88	000
12	a_3b_4	28,80	28,90	28,80	**28,83**	**92,8**	- 2,24	000
13	$\overline{x}$	**31,00**	**31,22**	**31,00**	**31,08**	**100,00**	**0,00**	

DL 5% 0,21
DL 1% 0,29
DL 0,1 % 0,38

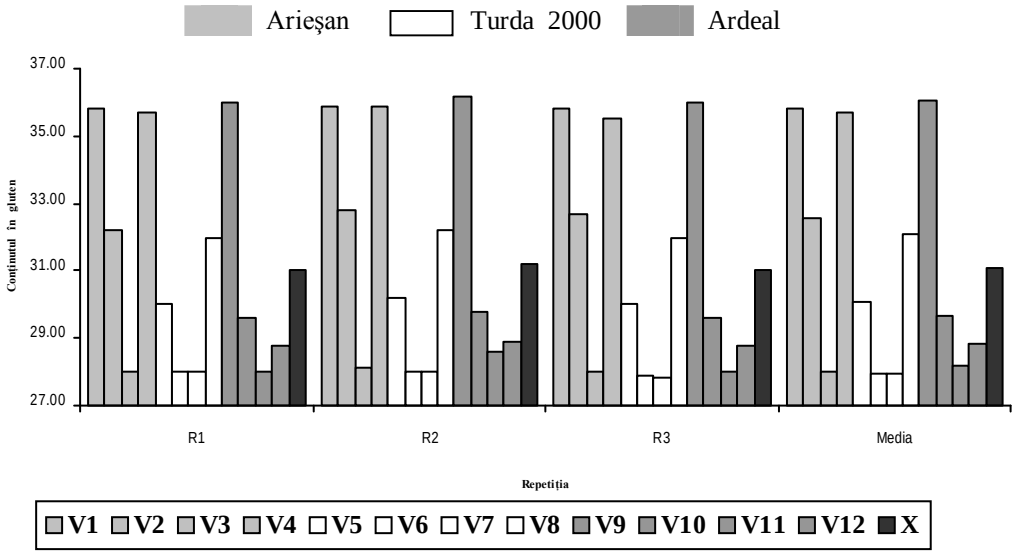

Diagram 1. The content in moist gluten according to the genotype and the sowing denseness (2005)

Table 2

The content in moist gluten according to the genotype and the sowing denseness (2005)

Factor ,, A ,, (the sort)	Factorul ,, B ,, (sowing denseness) 300 b_1	400 b_2	500 b_3	600 b_4	The means of factor ,, B ,, Content in gluten	%	Difference	Significance
ARIEŞAN	35,83	32,57	28,03	35,70	**33,03**	106,3	1,95	-
TURDA 2000	30,07	27,97	27,93	32,07	**29,51**	95,0	- 1,57	-
ARDEAL	36,07	29,67	28,20	28,83	**30,69**	98,8	- 0,.39	-
$\overline{\mathbf{X}}$	**33,99**	**30,07**	**28,05**	**32,20**	**31,08**	**100,00**	**0,0**	
%	109,4	96,8	90,3	103,6	**100,00**	DL 5%		3,99
Difference	2,91	- 1,01	- 3,03	1,12	**0,0**	DL 1%		6,04
Significance	-	-	-	-	**Mt.**	DL 0,1%		9,71

DL 5% 0,21
DL 1% 0,29
DL 0,1 % 0,38

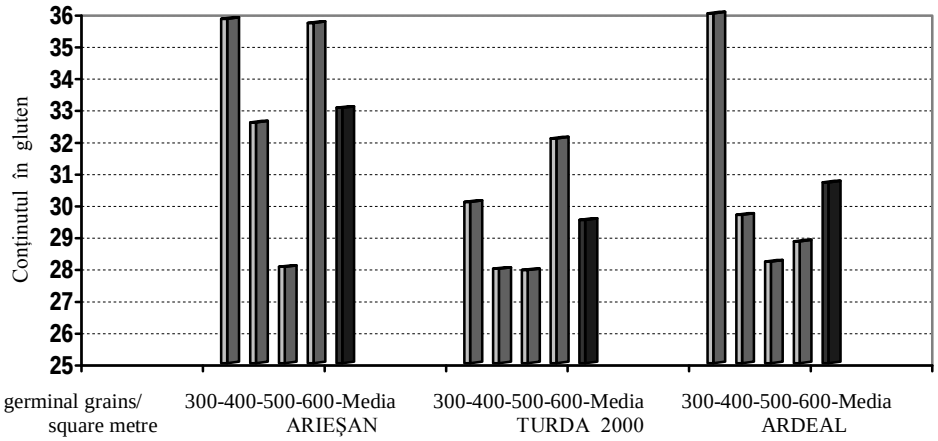

Diagram 2. The content in moist gluten according to the genotype and the sowing denseness (2005)

CONCLUSIONS

In the area where the research was effected, in 2005, the content in gluten was very closed at the three sorts.

The best results at the Ariesan sort was achieved when the sowing denseness is of 300, respectively 600 germinal grains/square metre.

In the case of Turda 2000 sort better results are obtained when the sowing denseness is of 300, respectively 600 germinal grains/square metre.

The Ardeal sort reacted upon more favourable at the sowing denseness of 300, respectively 400 germinal grains/square metre.

It can be stated that concerning the content in moist gluten, the three sorts taken in research react favourable upon at denseness of 300 germinal grains/square metre, reducing the expenses per hectare regarding the quantities of used seeds.

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