RESEARCH CONCERNING THE VARIATION OF SOME FEATURES DEPENDING ON THE CULTIVAR, FERTILISATION, AND CULTIVATION AREA IN TRITICALE

CERCETĂRI PRIVIND VARIAȚIA UNOR CARACTERE ÎN FUNCȚIE DE SOI, FERTILIZARE ŞI ZONA DE CULTURĂ LA TRITICALE

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Abstract: *The paper contains data concerning the variation of some features depending on cultivar and fertilisation in the hill area of north-west Mehedinți County, in which adapted cultivars of triticale, Titan, Tril, Stil, and Impuls, compared to the Alex wheat cultivar. We present data concerning the impact of fertilisation on plant length, spike length, number of spikelets, and number of grains per spike.*

Rezumat: *Lucrarea cuprinde date privind variația unor caractere în funcție de soi şi fertilizare în zona colinară din nord-vestul județului Mehedinți, la care soiurile zonate de triticale, Titan, Tril, Stil şi Impuls, comparativ cu soiul de grâu Alex. Sunt prezentate date referitoare la influența fertilizării asupra lungimii plantelor, lungimii spicului, a numărului de spiculețe şi de boabe din spic.*

Key words**:** *triticale,cultivars, morphological characters*
Cuvinte cheie: *triticale, soiuri, caractere morfologice*

INTRODUCTION

In the last years, through the official list of cultivars in Romania, they acknowledged a considerable number of triticale cultivars.

In order to establish the structure of cultivars suitable for the hill area of north-western Mehedinți County, we carried out research concerning the main features having an impact on crop quantum.

MATERIAL AND METHOD

Research had in view the triticale cultivars Titan, Tril, Stil, and Impuls compared to the Alex wheat cultivar, cultivated on two agri-funds: a_1- $N_{50}P_{80}K_{60}$ and a_2 – $N_{100}P_{80}K_{60}$.

The pre-emergent plant was grain peas.

The trial was of the bi-factorial type organised after the sub-divided plot method with three replications, in which factor A with two graduations was represented by fertilising level, and factor B with five graduations was represented by the biological material under study.

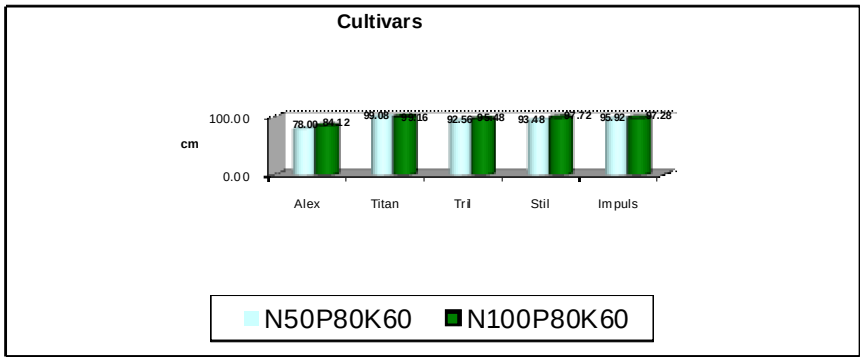
RESULTS AND DISCUSSIONS

Figure 1 shows that plant length varied depending the fertilisation level, between 78.00 cm (N_{50}) and 84.12 cm (N_{100}) in the Alex wheat cultivar and between 99.08 (N_{50}) and 99.16 cm (N_{100}) in the Titan cultivar. In the other three triticale cultivars the values were intermediary, with a height increasing trend in all of them depending on nitrogen rate increase.

Figure 2 shows the evolution of the spike length depending on the factors mentioned above. We can see that this feature is less influenced by the fertilisation level in the studied area, the variation of the values having smaller amplitude, i.e. 8.04 (Tril- N_{50}) and 8.90 (Impuls- N_{100}).

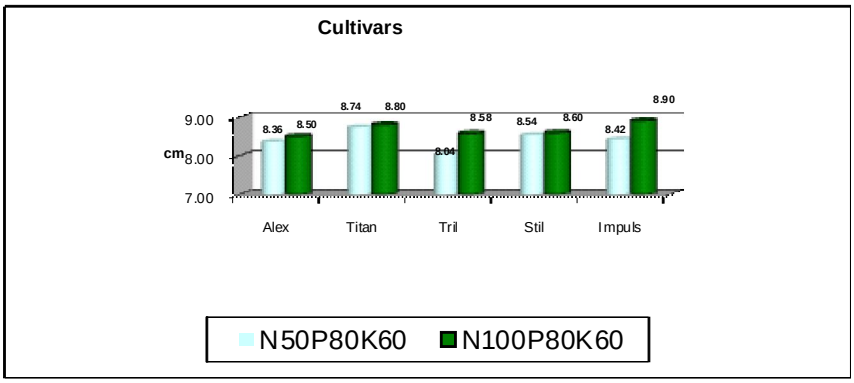
The number of spikelets per spike is shown in figure 3. The smallest number of spikelets was in the Alex wheat cultivar, and the highest one in the triticale cultivar Impuls, followed by the cultivar Titan.

In the Tril and Stil cultivars, on both agri-funds, the values were close.



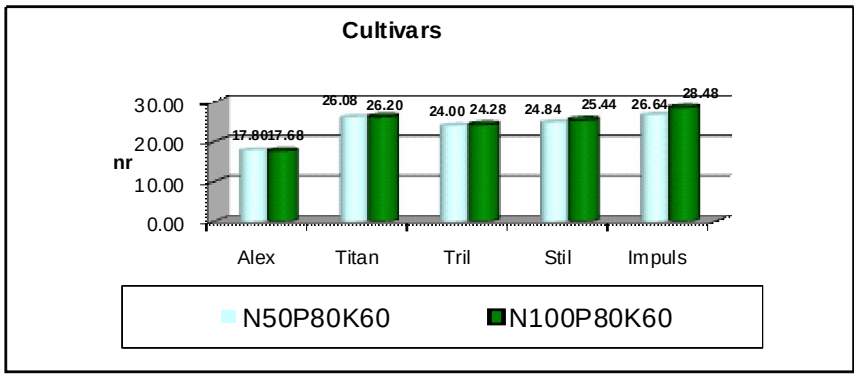
	ALEX		TITAN		TRIL		STIL		IMPULS	
S^2	7.28	12.91	29.31	7.73	7.29	9.29	8.01	19.64	9.75	18.04
S	2.7	3.59	5.32	2.78	2.7	3.05	2.03	4.43	3.12	4.25
S_X	0.11	0.14	0.21	0.11	0.11	0.12	0.11	0.18	0.12	0.17
S%	3.46	4.27	5.37	2.80	2.92	3.19	3.03	4.53	3.27	4.37

Fig. 1. Variation of the plant length depending on cultivar and fertilisation in the Podeni area (Mehedinti County)



	ALEX		TITAN		TRIL		STIL		IMPULS	
S^2	0.27	0.16	0.52	0.32	0.22	0.29	0.2	0.17	0.35	0.5
S	0.52	0.4	0.72	0.57	0.47	0.54	0.45	0.42	0.59	0.71
S_X	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.03
S%	6.22	4.71	8.24	6.48	5.85	6.29	5.27	4.90	7.01	7.98

Fig. 2. Variation of the spike length depending on cultivar and fertilisation in the Podeni area (Mehedinti County)

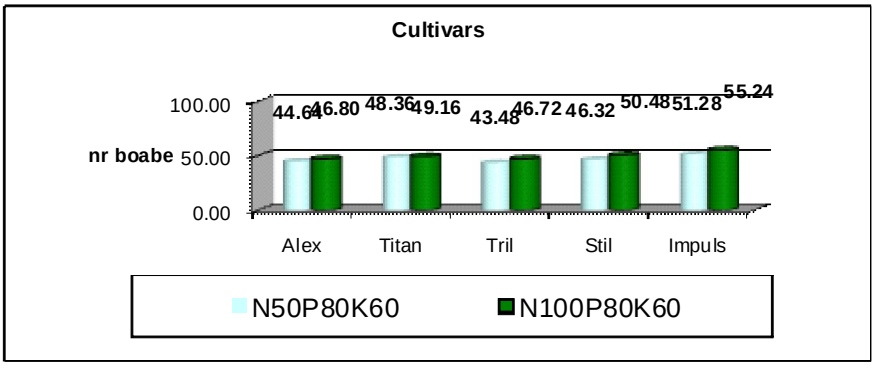


	ALEX		TITAN		TRIL		STIL		IMPULS	
S^2	0.72	1.5	1.03	1.36	0.72	3.56	3.81	3.21	3.99	4.33
S	0.85	1.22	1.02	1.17	0.85	1.89	1.95	1.79	2	2.08
S_X	0.03	0.05	0.04	0.05	0.03	0.08	0.08	0.07	0.08	0.08
S%	4.78	6.90	3.91	4.47	3.54	7.78	7.85	7.04	7.51	7.3

Fig. 3. Variation of the number of spikelets depending on cultivar and fertilisation in the Podeni area (Mehedinti County)

Figure 4 shows that the largest number of grains per spike was in the Impuls cultivar, followed by the Titan cultivar. The values recorded by the Alex wheat cultivar were sensibly close to those in the triticale cultivar Tril.

Doubling the nitrogen rate in all the cultivars favourably influenced the number of grains per spike. The most favourable answer to N_{100} fertilisation compared to the N_{50} fertilisation was in the Impuls and Stil cultivars.



	ALEX		TITAN		TRIL		STIL		IMPULS	
S^2	48.15	48.56	51.19	26.45	16.81	63.08	5.9	16.09	27.32	25.7
S	6.94	6.97	7.15	5.14	4.1	7.94	2.43	4.01	5.23	5.07
S_X	0.28	0.28	0.29	0.21	0.16	0.32	0.10	0.16	0.21	0.20
S%	15.55	14.89	14.78	10.46	9.43	16.99	5.25	7.94	10.20	9.18

Fig. 4. Variation of the grains depending on cultivar and fertilisation in the Podeni area (Mehedinti County)

CONCLUSIONS

1. Results point out that in the research area it is possible to expand into cultivation triticale cultivars as they are superior to the Alex wheat cultivar from the point of view of the numbers of grains per spike, a determining feature in crop levels.

2. The features we analysed point out the favourable reaction of the studied cultivars to N_{50-100} fertilisation on an agri-fund of $P_{80}K_{60}$, which is due to the low fertility potential of the soil on which we carried out research.

3. Doubling nitrogen rate from N_{50} to N_{100}, though increasing plant height, had no negative impact on fall resistance in the climate conditions of the research year.

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