

THE RESULTS OF COMPARATIVE CULTURES WITH MAIZE HYBRIDS IN THE REGION OF CARBONATE ALLUVIAL SOIL FROM THE WESTERN PART OF THE COUNTRY

REZULTATELE CULTURILOR COMPARATIVE CU HIBRIZI DE PORUMB ÎN ZONA ALUVIOSOLULUI CARBONATIC DIN VESTUL ȚĂRII

C.CHIOREANU, I. BORCEAN

Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara

Rezumat: Cercetările s-au desfășurat în zona foarte favorabilă pentru cultura porumbului din județul Arad. Lucrarea cuprinde recoltele obținute în perioada 2003-2006, la Șagu Arad, la 16 hibrizi de porumb cu perioadă diferită de vegetație și recoltele obținute în teritoriul Utviniș, din același județ, pentru 21 hibrizi de porumb. Procentul ridicat al hibrizilor aparținători mărcii Pioneer ne-a determinat a utiliza hibrizii acesteia. Recoltele de boabe au fost cuprinse între 4616 kg/ha și 72,89 kg/ha la Șagu și între 7553 kg/ha și 10592 kg/ha în zona Utviniș.

Abstract: The researches have been done in the very favourable region for maize cultivation from Arad County. The paper contains the yields obtained during the period 2003-2006 in Șagu Arad for 16 maize hybrids with different vegetation period and the yields obtained in the region Utviniș from the same County, for 21 maize hybrids. The high percentage of hybrids belonging to the Pioneer brand has determined us to use the hybrids of this class. The grain yields were of between 4616 kg/ha and 72,89 kg/ha in Șagu and of between 7553 kg/ha and 10592 kg/ha in the region Udvinis.

Key words: maize, grains, comparative crops with hybrids.

Cuvinte cheie: porumb, boabe, culturi comparative cu hibrizi.

INTRODUCTION

Maize is one of the most important crops for Romania, a country that around 1955 had 25% of Europe's fields cultivated with maize and 4.5% of the world's. At present, the maize cultivated surfaces have been reduced to about 2.5 million ha.

The official hybrids catalogue shows us that in the last years over 300 hybrids have been used for cultivation. These hybrids belong to very different precocity groups, which creates difficulties for the cultivators when it comes to selecting the best hybrids for a certain region.

MATERIALS AND METHOD

In the Șagu region there have been cultivated the following 16 hybrids and in the Utviniș area there have been cultivated 21 hybrids, all of them having different vegetation periods. The precursory cultivated plant during the entire experimental cycle was the wheat, this rotation also being the most used in this area.

The fertilization has been done with N₂₀₀P₁₀₀K₁₀₀, an agrifond that should ensure the manifestation of the production potential for the studied hybrids. The seeding density was of 65.000 for the extra early and early hybrids, of 60.000 for the semi early hybrids and of 55.000 for the semi late.

RESULTS AND DISCUSSIONS

The synthesis of the results obtained during the experimental study shows the following aspects regarding the results from the Sagu area (Table 1).

- The following hybrids had yields between 4500-5000 kg/ha: Colomba (4614 kg/ha), Stira (4632 kg/ha) and Evelina (4986 kg/ha).

- Yields between 5000 kg/ha and 6000 kg/ha have been obtained for the following hybrids: Vasilica (5118 kg/ha), PR36R10 (5212 kg/ha) PR38H67/X0961P (5153 kg/ha), PR38A24 (5357 kg/ha), PR37D25 (5430 kg/ha), Monalisa (5451 kg/ha), Danella (5716 kg/ha) and PR38a67/X0910N (5916 kg/ha).

- yields higher than 6000 kg/ha have given the hybrids Helga (6334 kg/ha), Florencia (6645 kg/ha), PR 6453kg/ha and PR36N70 (7218 kg/ha).

In the Utvinis area we obtained the yields given in Table 2 out of which it results that: the lowest yields of between 7000 kg/ha and 8000 kg/ha were obtained for the Monalisa (7223 kg/ha), Stira (7912 kg/ha), Evelina (7670 kg/ha) and Vasilica (7553 kg/ha) hybrids.

Yields between 8000 and 9000 kg/ha were obtained for the hybrids PR38A24 (8567 kg/ha), PR37D25 (8199 kg/ha) and PR35P12 (8245 kg/ha).

It is worth noting that nine hybrids have given yields of between 9000 and 10000 kg/ha (PR38H20, Danella, X0971T, PR37M34, PR36R10, PR36N70, PR36K67 and PR35Y54) and two hybrids with yields of over 10.000 kg/ha PR36B08 910379 kg/ha) and PR34N43 (10592 kg/ha).

Table 1

The synthesis of the yield results obtained for the comparative crops from Sagu, Arad County, during the experimental cycle 2003- 2006

Hybrid	Yield Kg/ha	%	Difference	Signification
Field average	5575	100		
Monalisa	5451	98	-124	
PR38A24	5357	96	-218	
Danella	5716	102	141	
Stira	4632	83	-943	000
Evelina	4986	89	-589	000
PR37D25	5430	97	-145	
PR38A67/X0910N	5916	106	341	XX
PR38H67/X0961P	5153	92	-422	00
Ribera	4967	89	-608	000
Helga	6334	114	759	XXX
PR36R10	5212	93	-363	00
Colomba	4614	83	-961	000
Vasilica	5118	92	-457	000
PR36N70	7218	129	1643	XXX
Florencia	6645	148	1070	XXX
PR35P12	6453	116	878	XXX

DL 5% = 251 kg/ha DL 1% = 339 kg/ha DL 0.1% = 450 kg/ha

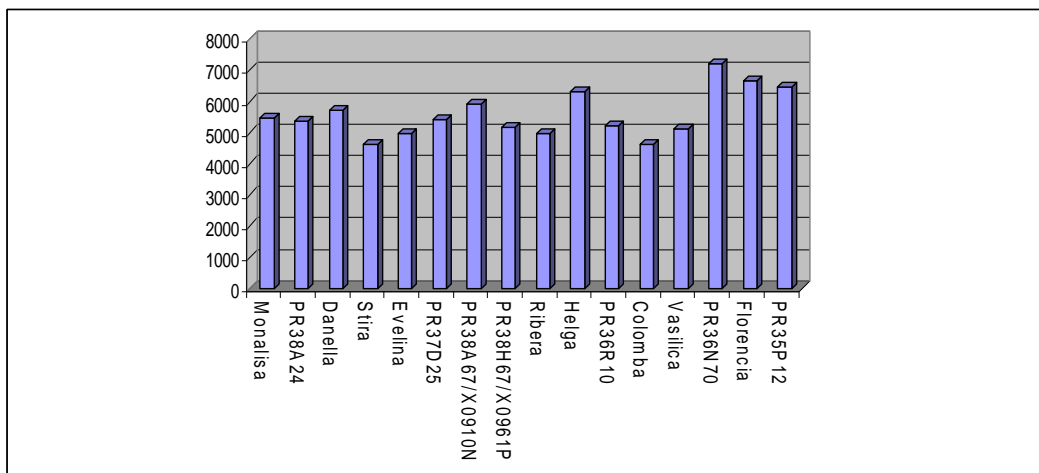


Fig.1. The synthesis of the maize yield obtained in Sagu during the experimental cycle 2003-2006

Table 2

The yield results obtained for the comparative crop in Utvinis, Arad County

Hybrid	Yield Kg/ha	%	Difference Kg/ha	Signification
Field average	9179	100		
PR38H20	9193	100	14	
MONALISA	7223	79	-1956	000
PR38A24	8567	93	-612	000
DANELLA	9107	99	-72	
STIRA	7912	86	-1285	000
EVELINA	7670	83	-1509	000
PR37D25	8199	89	-980	000
X0971T	9548	104	369	X
PR38H67	10040	109	861	XXX
PR37M34	9718	106	539	XXX
X01002F	10953	119	1774	XXX
PR36610	9253	101	74	
COLOMBA	10263	112	1084	XXX
VASILICA	7553	82	-1626	000
PR36NN70	9426	103	247	
FLORENCIA	10060	110	881	XXX
PR36K67	9648	105	469	XX
PR36B08	10379	113	1200	XXX
PR35P12	8245	90	-934	000
PR35Y54	9211	100	32	
PR34N43	10592	115	1413	XXX

DL 5% = 282 kg/ha DL 1% = 377 kg/ha DL 0.1% = 498 kg/ha

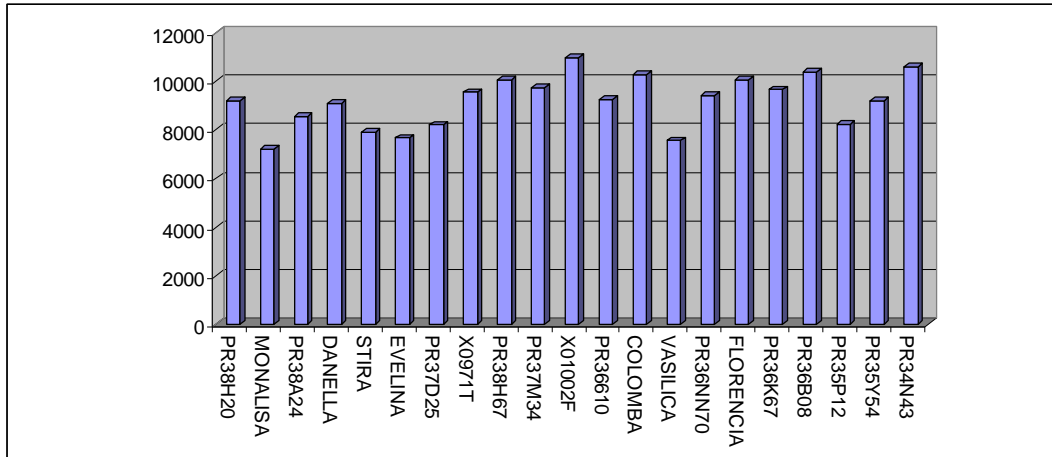


Fig.2. The maize yield obtained in Utvinis

CONCLUSIONS

It results that for both areas the hybrids Monalisa and Helga can be used for maize / wheat crop rotation, and for the maize - spring crops rotation there can be used the semi late tested hybrids.

LITERATURE

1. CHIOREANU C. – Studiu privind elaborarea structurii hibrizilor de porumb pentru principalele zone pedoclimatice din vestul țării. Teză de doctorat, USAMVB Timișoara, 2007.
2. BORCEAN I., DAVID GH., BORCEAN A., - Tehnici de cultură și protecție a cerealelor și leguminoaselor, Ed. De Vest, Timișoara, 2006.