THE RESULTS OF THE COMPARATIVE SUNFLOWER HYBRID CROPS OBTAINED DURING THE EXPERIMENTAL CYCLE 2005-2007

REZULTATELE CULTURILOR COMPARATIVE CU HIBRIZI DE FLOAREA SOARELUI OBȚINUTE ÎN CICLUL EXPERIMENTAL 2005-2007

M. BÎTE, I. BORCEAN

Banat's University of Agricultural Sciences and Veterinary Medicine, Timişoara

Rezumat:*În lucrare sunt prezentate rezultatele de recoltă, variația masei a 1000 boabe, conținutul și producția de ulei, obținute în condițiile aluvisolului din teritoriul Recaș. Hibrizii luați în studiu au fost Favorit, Splendor, Performer ,PR64A44, PR63A90, PR64A83, din USA și hibrizii Banat și Valentino, din Serbia. Nivelul recoltelor medii pe ciclul experimental a variat între 1740 kg/ha (hibridul Favorit) și 2821 kg/ha (PR63A90).*

Abstract:*The paper presents the crop results, the mass variation of 1000 grains, the oil content and production, obtained under the conditions of the alluvial soil found on the territory of Recaș. The studied hybrids were Favorit, Splendor, Performer, PR64A44, PR63A90, PR64A83 from the USA and the hybrids Banat and Valentino from Serbia. The level of medium crops on an experimental cycle has varied between 1740 kg/ha (for the Favorit hybrid) and 2821 kg/ha (PR63A90).*

Key words: *sunflower – comparative hybrid crops.*
Cuvinte cheie: *Floarea soarelui – culturi comparative cu hibrizi.*

INTRODUCTION

Now, the cultivation of sunflower hybrids predominates on large geographic areas. These are more productive, have a higher content of oil and kernel, are more resistant against diseases and make better use of the vegetation conditions than the cultivars.

The official cultivars' catalogue contains over 80 hybrids, which makes it difficult for the cultivators to choose the most adequate cultivars for the area they work, which justifies the researches done in this field of activity.

MATERIALS AND METHODS

The comparative crop has contained 10 hybrids from 4 countries, three of which originating in Europe (Romania, Serbia and Germany) and the USA.

The type of soil was the very thick moderate gleic alluvial soil.

The precursory cultivated plant was the winter wheat. The fertilization has been done with $N_{80}P_{80}K_{80}$.

The culture technology was the current one, the plant density was of 50.000 plants/ha.

RESULTS AND DISCUSSIONS

The synthesis of the results obtained from the combined hybrid sunflower crop is presented in Table 1.

It results that, although one of the three experimental years was less favourable, the average yields obtained during the cycle 2005-2007 have been situated between 1740 kilos/ha (for the Favorit hybrid) and of over 2800 kilos/ha for the hybrids Aldaba (2850kilos/ha) and PR63A90 (2646 kilos/ha).

From the hybrids created in Novi Sad, the Valentino has distinguished itself by producing 2550 kg/ha, presenting a yield increase of 46%, respectively a difference of over 800 kg/ha, which is a very significant one as compared with the Favorit hybrid.

Table 1

The synthesis of the results obtained from the combined hybrid sunflower crop during the experimental cycle 2005-2007

HYBRID	SOURCE	Yield Kg/ha	%	Difference Kg/ha	Signification
FAVORIT	ROMANIA	1740	100		
SPLENDOR	ROMANIA	2420	139	680	XXX
PERFORMER	ROMANIA	2249	129	509	XXX
TIMIŞ	ROMANIA	2189	125	449	XXX
ALDABA	GERMANY	2850	163	1110	XXX
PR64A44	USA	2634	151	894	XXX
PR63A90	USA	2821	162	1081	XXX
PR64A83	USA	2646	152	906	XXX
BANAT	SERBIA	2349	135	609	XXX
VALENTINO	SERBIA	2550	146	810	XXX

DL 5% = 208 kg/ha DL 1% = 286 kg/ha DL 0.1% = 386 kg/ha

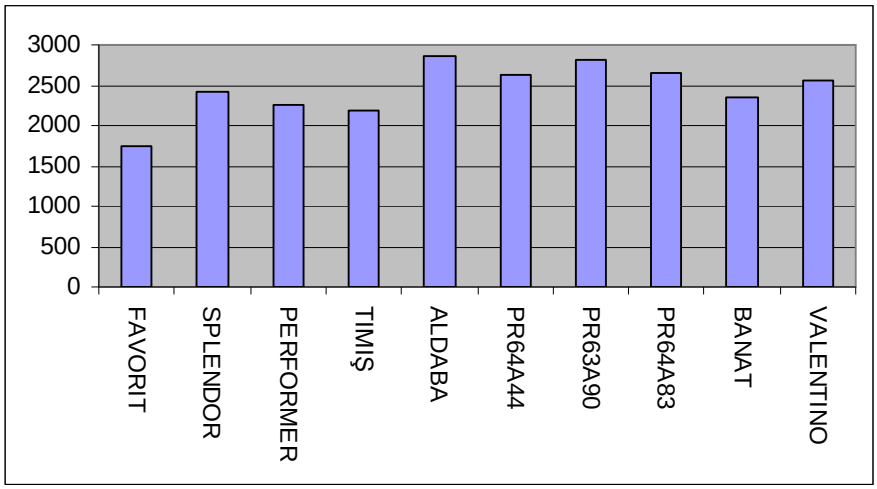

Figure 1. The synthesis of the results obtained from the combined hybrid sunflower crop during the experimental cycle 2005-2007

Among the local hybrids, the best behaviour has been noticed in the case of SPLENDOR, a hybrid with a production which surpassed by 39% the production of the reference cultivar, which means a very significant difference of 680 kg/ha.

The mass of 1000 grains has varied between 59 g (PR64A44) and 68 g SPLENDOR. A high MMB of 66-67 g also appeared at the hybrids ALDABA, VALENTINO, TIMIŞ and PERFORMER.

The results of the experimental cycle 2005-2007 recommend the following hybrids for the mentioned area: ALDABA, PR63A90, PR64A83, PR64A44, VALENTINO and SPLENDOR.

The oil content obtained during the mentioned experimental cycle was the following: FAVORIT 52,5%, VALENTINO 48,3%, BANAT and PR64A83 cu 48,1%, PR63A90 – 47,8%, , PR64A44 – 47,1%, ALDABA 46,0%, PERFORMER 46,1%, TIMIŞ 45,5% and SPLENDOR 45,4% (fig. 2.)

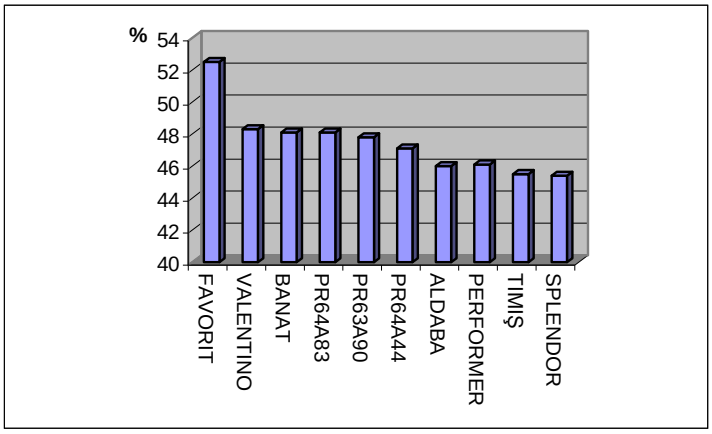

Figure 2. The oil content during the experimental cycle 2005-2007

The experiments regarding the oil production synthesis are given in table 2.

Table 2

The oil production synthesis during the experimental cycle 2005-2007

HYBRID	Yield Kg/ha	%	Difference Kg/ha	Signification
FAVORIT	1740	100		
SPLENDOR	2420	139	680	XXX
PERFORMER	2249	129	509	XXX
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PR63A90	2821	162	1081	XXX
PR64A83	2646	152	906	XXX
BANAT	2349	135	609	XXX
VALENTINO	2550	146	810	XXX

DL 5% = 215 kg/ha DL 1% = 289 kg/ha DL 0.1% = 299 kg/ha

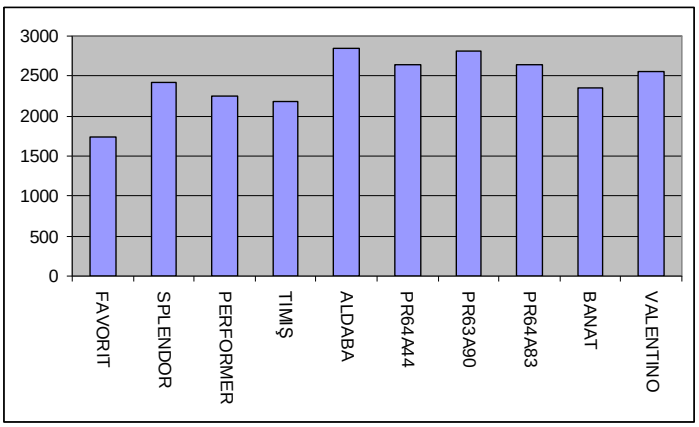

Figure 3. The oil production during the experimental cycle 2005-2007

The results show that the oil production has been influenced not only by the oil content, but also by the achene production. The highest oil productions have been obtained in the case of the hybrids with the highest achene production, which is of over 2800 kg/ha (PR63A90 and ALDABA), and the lowest oil production has been obtained in the case of the FAVORIT hybrid, which had the lowest achene production, which is of only about 1700 kg/ha. This happens despite the fact that it has the highest average oil content, that is of over 52%.

CONCLUSIONS

1. Yields of over 2500 kg/ha have been obtained in the case of the hybrids ALDABA, PR64A83, PR64A44 and VALENTINO. That is why these can be recommended to be mainly cultivated in this area.

2. The highest oil content has been measured for the hybrids FAVORIT (52,5%) and VALENTINO, BANAT and PR64A83 with over 48%.

3. The highest oil production of over 1300 kg/ha has been obtained for the hybrid ALDABA and PR63A90.

LITERATURE

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