

RESEARCH ON THE BEHAVIOUR OF NEW RICE CULTIVARS AND PERSPECTIVE LINES DEVELOPED AT THE NARDI FUNDULEA AND THE REC CHIRNOGI

CERCETĂRI PRIVIND COMPORTAREA NOILOR SOIURI DE OREZ ȘI LINII DE PERSPECTIVĂ CREATE LA I.N.C.D.A. FUNDULEA ȘI C.E.O. CHIRNOGI

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Abstract: Romania is located at the North limit of rice cultivation area. The rice could be cultivated in a narrow area of 40 km, from Turnu Severin to Braila, as well as in Banat – Banloc. Although is a tropical crop, the rice has a special ecological plasticity, fact that allows the crop extension from equator to the latitude of 48° N and from the sea level till 1500-1800 m altitude, in areas with temperatures over 10°C at germination and over 15°C during vegetation till ripening. In Romania, main important are cultivated genotypes which must reach the maturity till autumn hoarfrosts. Twelve genotypes with variable vegetation period were tested in order to find the most adequate ones from cultivation area Oltenița-Chirnogi.

Rezumat: România este situată la limita nordică a zonei de cultură a orezului, acesta putând fi cultivat pe o fâșie lată de cca. 40 km, care se întinde de la Turnul Severin la Brăila ,precum și în Banat la Banloc. Deși este o plantă de origine tropicală orezul are o plasticitate biologică deosebită , fapt ce a permis extinderea culturii de la Ecuator până la latitudinea 48° N, și de la nivelul mării până la 1500-1800 m altitudine ,în zona în care se asigură o temperatură minimă de peste 10° C la germinație și peste 15 °C în perioada de vegetație până la coacere. În țara noastră o mare importanță prezintă genotipurile cultivate care trebuie să ajungă la maturitate până la căderea brumelor din toamnă. De aceea s-au experimentat 12 genotipuri cu o lungime a perioadei de vegetație variabilă ,urmînd să fie depistate cele pretabile la cultură în zona Oltenița –Chirnogi.

Key words: rice, crop area, sowing time, genotype, submersion, water level, rice fitting out, yield cost, benefit.

Cuvinte cheie : orez, zonă de cultură, epocă de semănat, genotip, submersie, nivel de apă, amenajare orizicolă, cost de producție, profit.

INTRODUCTION

The rice occupies the second place in the world as cultivated area after wheat and the third place as total cereal yield after wheat and maize.

This is way the crop must be reinforced also in Romania using Romanian cultivars and an improved technology by cooperation with the advanced countries (Italy, Spain, and France).

MATERIAL AND METHOD

In order to establish the cultivars and perspective lines released at NARDI Fundulea and REC Chirnogi, during 2003-2005 a mono-factorial experiment was performed based on randomized blocks with the following genotypes:

V₁=Dunarea;

V₂=Polizesti 28;

V₃=Zefir;

- V₄=Elida;
- V₅=Magic;
- V₆=F40 (F18 x I.R.28);
- V₇=F42 (Sesilla x Timis53);
- V₈=F47 (Nucloriza x C.I. 1166)
- V₉=F34 (Coral x Linia 10);
- V₁₀=M 352;
- V₁₁=F45 (Hg 249 x F38);
- V₁₂=F43 (Franta 3 x C.I. 1166)

A crop technology recommended under conditions of the Chirnogi area was used.

To correctly evaluate the tested genotypes, the economical indicators had also processed, knowing that their value depends firstly by the ratio between achieved yield value and used resources.

RESULTS AND DISCUSSION

The yield results were processed for each year and during whole period. Figure 1 presents the behaviour of the new rice cultivars and some perspective lines during 2003-2005.

One can ascertain that:

- Line F47 is a perspective one, yields that could be achieve exceeding 80 q/ha.
- Another perspective line with yields around 80 q/ha is F40.
- High yields of 77-79 q/ha could be obtained by the registered cultivars Magic and Elida.

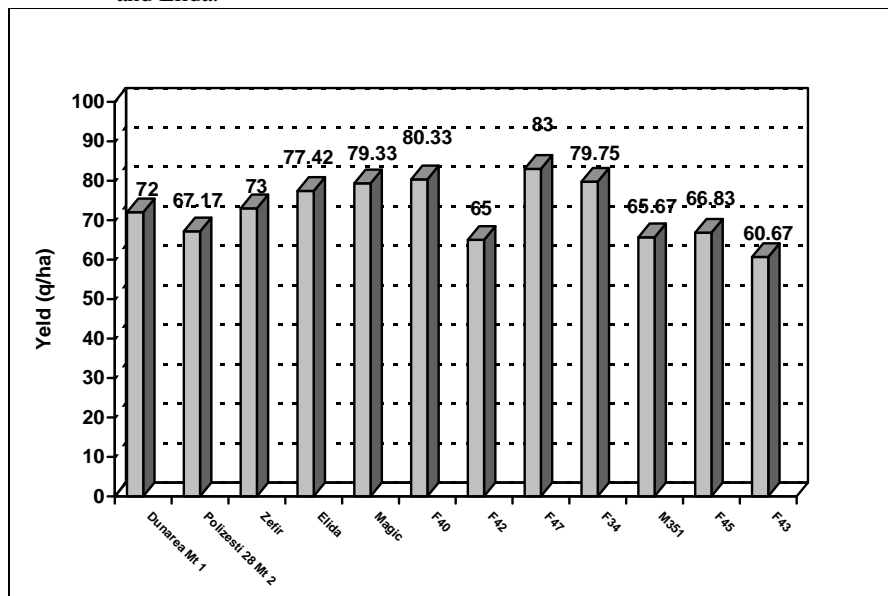


Fig 1 Behaviour of new rice cultivars and perspective lines released at NARDI Fundulea and REC Chirnogi during 2003-2005

Figures 2 and 3 present the values of yield cost and of gross benefit during 2003-2005. The smallest values of yield cost and the highest values of the gross benefit were registered by genotypes F47, F40 and Magic.

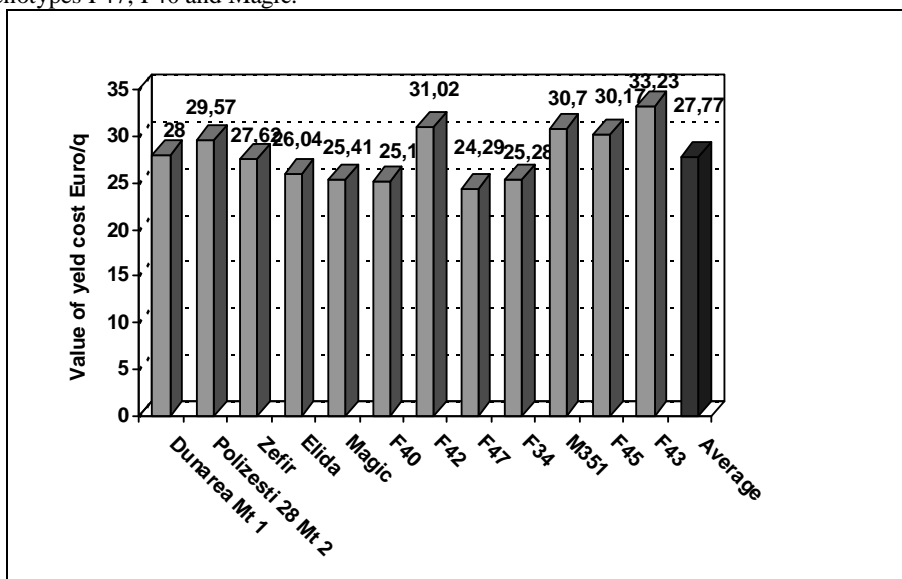


Fig. 2 Value of yield cost , in rice , during 2003-2005

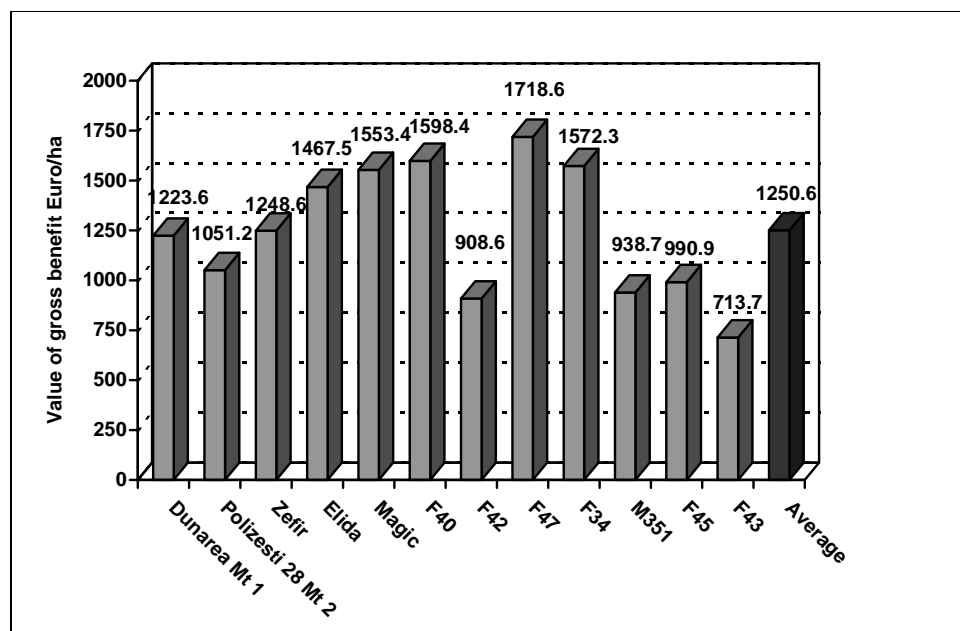


Fig. 3 Value of gross benefit , in rice , during 2003-2005

CONCLUSIONS

The researches performed during 2003-2005, in a mono-factorial experiment based on randomized blocks had in view the behaviour of 12 genotypes.

Based on results, the line F47 is considered as important perspective one allowing yields higher than 80 q/ha.

Another perspective line with yields around 80 q/ha is F40.

High rice yields, of 77-79 q/ha could be achieved by registered cultivars Magic and Elida.

The morphological and physiological traits of recommended cultivars are adequate to achieve high yields.

Thus, line F47 has a vegetation period of 115 days, a short height of 87 cm, with good resistance to lodging, high fertility of 91.3%, very high processing efficiency (69%), the highest protein content (7.5%) and very high starch content (74.7%).

The cultivar Magic is recommended based on its adequate traits: vegetation period of 118 days, fertility of 82.2%, processing efficiency of 63%, protein content of 7% and starch content of 71.1%.

LITERATURE

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