

RESEARCH ON THE BEHAVIOUR OF CERTAIN OILSEED RAPE VARIETIES IN GĂTAIA AREA

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Abstract - Research on the behavior of certain oilseed rape varieties in Gătaia area

The study monitored the behavior of some rapeseed varieties in terms of oilseed rape yield and for their introduction in the culture. The study was conducted over a period of three years 2008-2010, in the Gătaia area of Timis county. For testing five varieties of oilseed rape (Alaska, Attila, Triangle, Digger, Milena) were selected. The soil of the experimental field was a vertic-preluvosol, medium clay loam/loam clay on medium fine clays. In the first year of experimentation (2008), the smallest oilseed rape yields have been recorded due to important deviations in this area. Under these conditions the oilseed rape yield ranged between 569 kg/ha and 732 kg/ha. The oilseed rape yield level of the second year of study (2009) ranged between 984 kg/ha and 1142 kg/ha, slightly higher than the previous year. In 2008 the highest oilseed rape yield of 732 kg/ha was obtained from variety Milena, followed by Alaska with a yield of 640 kg/ha, while the lowest oil-seed rape yield (569 kg/ha) was obtained from the variety Digger. In 2009 the highest oilseed rape yield (1149 kg/ha) was obtained from the variety Triangle, and the lowest oil-seed rape crop (984 kg / ha) was obtained from variety Alaska.

Research results show that by the introduction of the most suitable varieties in the culture, respecting the fertilizer recovering capacity of the varieties at the determination of the fertilization conditions and respecting the zonal optimum planting period, rape is a crop with real opportunities for expansion in the reference areas.

Key words: rape, variety, crop, soil

INTRODUCTION

Rape is regarded as one of the most important oil crops from *fam. Cruciferae*.

The expansion in culture is due to the progress in the chemistry of oilseed composition, in the same time with the increase in seed-oil content.

Rapeseed chemical composition is influenced by genetic factors (variety), environmental conditions and applied technology (CAMP, 2005).

Nowadays a special attention is given to vegetable oils by using them as motor fuel (CAMP, 2005). TEMMER (1996) lists four advantages which advocate their use as alternative fuels: 1 - renewable energy, 2 - an alternative product for agriculture, 3 - a fuel-toxic, biologically degradable, 4 - closed CO₂ cycle. Rape is now a culture with fluctuating yields due to drought frequency in the sowing period, lower resistance to winter, the emergence in recent years during the late flowering forms, pests and diseases specific attack, susceptibility to shaking.

For Romania the researches reveal that good yields can be obtained with densities of 80-110 plants/sqm (BÎLTEANU, 1993, 2001, MAA, 1990), which is realised by the sowing of

120-150 seeds/sqm (BÎLTEANU, 2001), this characteristics ranks the rape among species that maintain and even raise the soil fertility.

MATERIAL AND METHODS

The study was conducted over a period of three years 2008-2010, in the Gătaia area of Timis county.

The soil of the experimental field was a vertic-preluvosol, medium clay loam/loam clay on medium fine clays.

During the years of 2008-2010 research aimed at the behavior of rapeseed varieties in terms of oilseed rape yield for their introduction in the culture. In this sense, the comparative cultures were held, organized by the “strips” method in three repetitions.

The varieties studied were: Alaska, Attila, Triangle, Digger, Milena. Before sowing the field was ploughed with a disc harrow to refine the seed bed for sowing. Period of sowing was the last decade of August with 80 germinable seeds/sqm. The row distance was 12.5 cm and the sowing depth 2 cm.

Fertilization with phosphorus at a dose of P80 was performed before field preparation and nitrogen fertilization dose of N100 was performed on two occasions: first on the frozen ground in February at a dose of N66, while the remaining dose in the second half of March.

In the third decade of March the postemergent herbicide Lontrel 300 was applied in a dose of 0.4 l/ha. Sampling was done in the last decade of June directly from the chain to combine parcels variants.

RESULTS AND DISCUSSION

Results of oilseed rape yield in the experimental year 2008

This year produced the lowest oilseed rape yield, due to the winter conditions and rainfall excess in the last two months of the growing season. Under these conditions the field mean had a value of 638 kg/ha. The differences in yield, compared with field average, were low in all varieties, without significance.

Table 1. Seed-oil rape yield in the 2008 year

Variety	Oilseed rape yield kg/ha	%	Difference kg/ha	Significance
Milena	732	115	94	-
Alaska	640	100	2	-
Triangle	639	100	1	-
Field mean	638	100	-	Mt.
Digger	569	89	-69	-
Attila	611	96	-27	-

DL 5 % = 106 kg/ha; DL 1% = 150 kg/ha; DL 0,1 % = 218 kg/ha

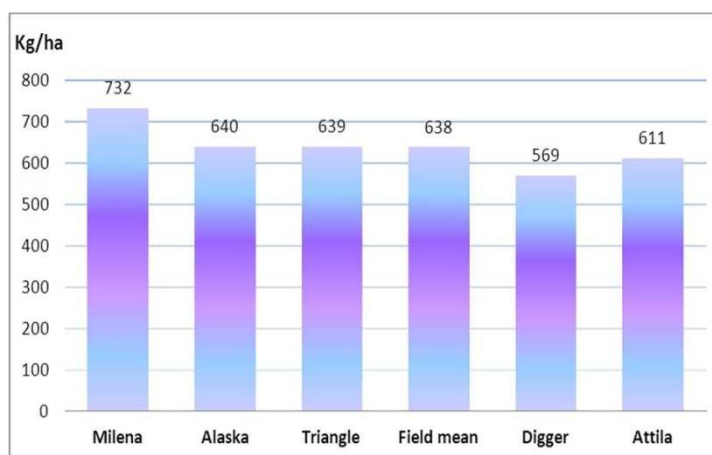


Figure 1. Oilseed rape crop (kg/ha) obtained in the 2008 year from Gătaia

Results of oilseed rape yield in the experimental year 2009

The results of the second year of the study showed that for four varieties the oilseed rape yield was higher than 1000 kg/ha as follows: Milena (1142 kg/ha), Alaska (1104 kg/ha), Triangle (1074 kg/ha) and Attila (1019 kg/ha). The lowest oilseed rape yield with a value of 984 kg/ha resulted in the variety Digger.

Table 2. Seed- oil rape yield in the 2009 year

Variety	Oilseed yield kg/ha	%	Difference kg/ha	Significance
Milena	1142	107	78	-
Alaska	1104	104	40	-
Triangle	1074	101	10	-
Field mean	1064	100		Mt.
Digger	984	92	-80	-
Attila	1019	96	-45	-

DL 5 % = 113 kg/ha; DL 1% = 161 kg/ha; DL 0,1 % = 233 kg/ha

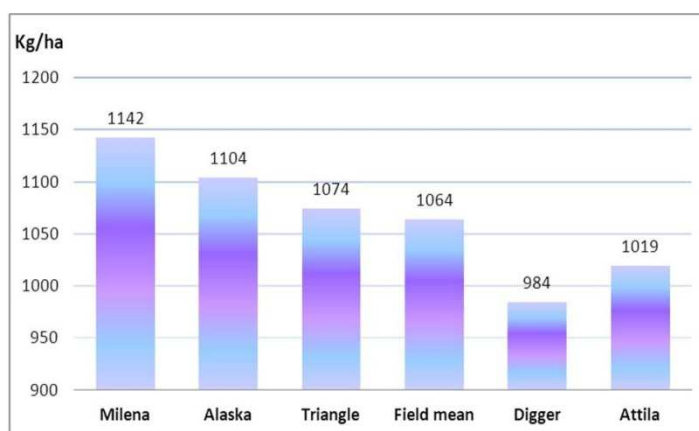


Figure 2. Oil-seed rape crop (kg/ha) obtained in the 2009 year from Gătaia

Results of oilseed rape yield in the experimental year 2010

In the 2010 year it appears that, compared to the field average of 948 kg/ha, the harvest differences recorded in all tested varieties are lower, without signification, except variety Milena who recorded a very significant difference. In this context a difference can not be made in order to recommend a variety for cultivation.

Table 3. Seed-oil rape crop in the 2010 year

Variety	Oil-seed rape crop kg/ha	%	Difference kg/ha	Semnification
Milena	1139	120	191	XX
Alaska	975	103	27	-
Triangle	960	101	12	-
Field mean	948	100		Mt.
Digger	868	96	-41	-
Attila	907	92	-80	-

DL 5 % = 108 kg/ha; DL 1% = 153 kg/ha; DL 0,1 % = 221 kg/ha

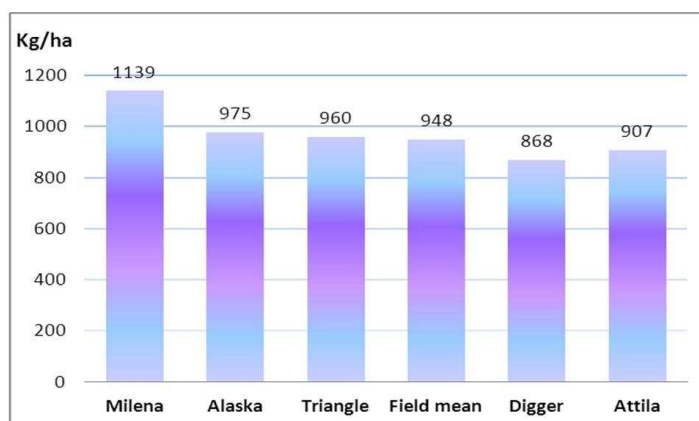


Figure 3. Oilseed rape yield (kg/ha) obtained in 2010 from Gătaia

CONCLUSIONS

1. Seed-oil rape yield from Gataia was between 1004 kg/ha for variety Triangle and 833 kg/ha for variety Attila, due to lower seed yield.
2. In the conditions of vertic preluvosol from Gătaia the highest oilseed rape yield (1142 kg/ha) was obtained in 2009 at the variety Milena and the lowest seed-oil rape yield (569 kg / ha) was recorded in 2008 at the variety Digger .

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