RESULTS CONCERNING THE INFLUENCE OF SOWING PERIOD ON CROPS IN AUTUMN-SEEDED *Camelina sativa* L.

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Abstract. *In Romania, this plant is unknown as a crop. It is present on academic experimental plots and in some agricultural research stations, though its vegetation features needs allow it to be cultivated on greater areas, particularly in less fertile areas. Researches on sowing time concerned only autumn-seeded cameline, spring-seeded cameline sowing time being known. The optimal interval for sowing cameline is October 5-10. An increase of 34% in yield in comparison with the interval September 15-20 was registered in the period September 25-30; an increase of 54% was registered in the period October 5-10, and of only 44% in the period October 15-20.*

Keywords: autumn-seeded, *Camelina sativa* L

INTRODUCTION

Cultivated for over 2000 years, this species has been of particular interest particularly during the last years due to the high seed oil content from which they extract very special features oil used in the production of bio kerosene. Cameline oil has been used mainly as a medicine and less as a food; this is why using this oil to produce bio kerosene does not compete with using it as a food. Not using it as a food is an advantage of cultivating this crop; thus, the species can be cultivated on lands that are not traditionally reserved to the cultivation of food crops.

MATERIAL AND METHOD

Research regarding the influence of sowing time on autumn-seeded cameline was organised within the Didactic Station in Timişoara, within a mono-factorial experiment with four sowing times:

V_1 – 2nd decade of September;

V_2 – 3rd decade of September;

V_3 – 1st decade of October;

V_4 – 2nd decade of October.

Sowing technology in cameline is still to be clarified; this is why we sowed 1-2 cm deep in the soil, at a rate of 8 kg/ha of seed. Row distance was 12.5 cm. Maintenance works consisted in harrowing after sprouting and tillage when the plants were 7-10 cm tall.

RESULTS AND DISCUSSION

Yield results in 2014 in autumn-seeded cameline depending on sowing time are shown in Table 1 below.

Table 1

Yield results in autumn-seeded cameline depending on sowing time (2014)

Variant	Crop kg/ha	%	Difference kg/ha	Significance
E I. 15 - 20 IX	1561	100	Mt.	-
E II. 25 - 30 IX	2132	136	571	xxx
E III. 5 - 10 X	2370	151	809	xxx
E. IV 15 - 20 C	2310	147	749	xxx

DL 5% = 46 kg/ha;

DL 1% = 69 kg/ha;

DL 0.1% = 119 kg/ha

To note that sowing in the 2nd decade of September is too early: this variant produced the lowest crop.

Delaying the sowing with 10 days, i.e. until the 3rd decade of September, produced an increase in yield of 36%, i.e. a difference of 571 kg/ha, a difference statistically ensured as very significant.

In the variant sowed in the 1st decade of October, we obtained the highest yield: 2,370 kg/ha, i.e. 51% more than in the variant sowed in the 2nd decade of September or a very significant difference of 809 kg/ha.

The influence of sowing time on the branching rate is shown in Figure 1 below.

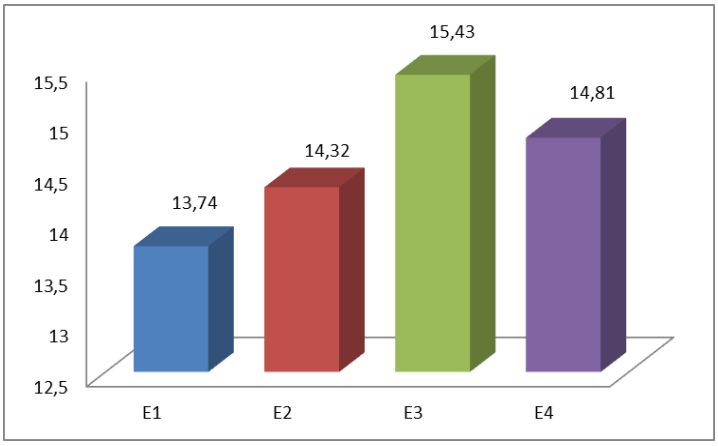

Fig. 1. Number of branches during sowing time
in autumn-seeded cameline

We can see that, in 2014, a year favourable to the crop, the number of branches was less influenced during the studied interval, ranging between 13.74 and 15.43.

The influence of sowing time on the number of siliques is shown in Figure 2.

It is obvious that, in all sowing times, the number of siliques reached its highest level, i.e. between 138.42 in the variant sowed in the 2nd decade of September and 164.26 in the variant sowed in the 2nd decade of October; this shows that sowing should be done in the 1st decade of October.

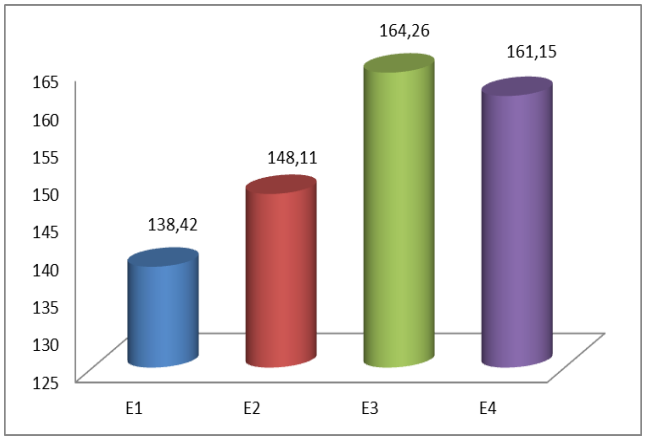

Fig. 2. Number of siliques per plant depending on the sowing time
in autumn-seeded cameline

The influence of the sowing period on the 1000-grain weight is shown in Figure 3 below.

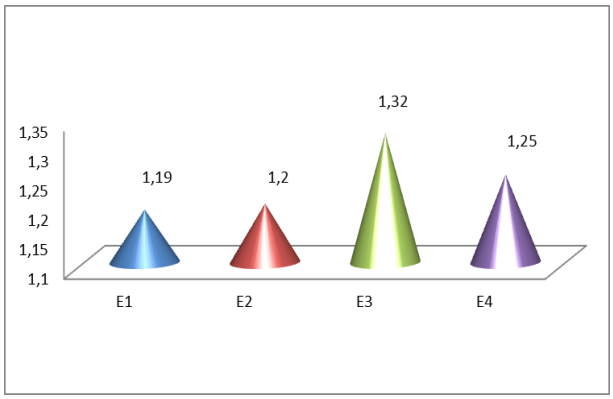

Fig. 3. Variation of 1000-grain weight depending on sowing time in autumn-seeded cameline

The close correlation between 1000-grain weight and crop size points out the importance of this production element. Sowing time influenced the 1000-grain weight within close limits, i.e. between 1.19 g and 1.32 g.

CONCLUSIONS

The duration of vegetation period in autumn-seeded cameline was 247 days; the vegetation period was prolonged with almost a week because of the rainfalls.

The number of branches depending on sowing time ranged between 13.74 and 15.43; the number of siliques per plant ranged between 138.42 and 164.26, and the 1000-grain weight ranged between 1.19 g and 1.32 g.

The sowing time in autumn-seeded cameline pointed out the interval October 5-10 as optimum. The increase in yield depending on sowing time during the interval September 25-30 was 36%; during the interval 5-10 September was 51%; and during the interval 15-20 October, only 47%.

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