# RESEARCH CONCERNING SEED PRODUCTION IN BASIL (*Ocimum basilicum* L.)

# CERCETĂRI PRIVIND PRODUCEREA DE SĂMÂNȚĂ LA BUSUIOC (*Ocimum basilicum* L.)

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***Abstract:*** *Research was carried out on the Carani territory, in the Vinga High Plain (Arad County), on a mollic decarbonated preluvosoil. Seed yield in the five biotypes under study varied between 134.00 kg/ha in the De Novi Sad provenance (the Viridis form), and 611.00 kg/ha in the De Şag provenance. The already adapted cultivars – Geea and Basilica – yielded between 426 and 523 kg/ha of seeds each.*

***Rezumat:*** *Cercetările s-au efectuat în Câmpia Înaltă a Vingăi teritoriul Carani, pe un sol de tip preluvosol molic decarbonatat. Producţia de sămânță la cele cinci biotipuri luate în studiu a variat între 134 kg/ha la provenienţa De Novi Sad forma Viridis şi 611 kg/ha la Provenienţa De Şag. Soiurile zonate Geea şi Basilica s-au înscris cu producţii de sămânță cuprinse între 426-523 kg/ha.*

***Key words:*** *Ocimum basilicum,*
***Cuvinte cheie*:** *Ocimum, basilicum, producerea de sămânță.*

## INTRODUCTION

*Ocimum basilicum* has been cultivated for the first time in India, some 4,000 years ago, from where it spread to other parts of the world. It is a plant important for its aerial part (*herba basilica*), that contains up to 0.50% essential oil. The plant has broad uses in the perfume industry and in the cosmetics industry, as well as in folk medicine. To get the seeds necessary in order to set crops, they organise seed plots on which they apply the same technology as in edible crops. In very favourable areas, the seed yield from 1 ha of crops can ensure the necessary seeds for 50 to 100 ha of crops.

## MATERIALS AND METHODS

Research aimed at producing seed from the following basil cultivars: Basilica, Geea, De Şag provenance, De Novi Sad provenance (the *Viridis* form), and the De Novi Sad provenance (the *Violaceum* form).

The technology we applied was the current one, with the following mentions: the pre-emergent plant was beans, fertilising was done with $N_{50}P_{60}K_{40}$ , sowing was done at a row spacing of 50 cm, and at a plant spacing of 20 cm. trials were organised after the stripe method with three replications.

Results were calculated in accordance with the setting methods of the trial in the field.

## RESULTS AND DISCUSSIONS

Research results concerning the production of seed are shown in Figure 1. We can see that, during the three experimental years, the highest seed yield was in the De Şag provenance, which overrun the seed yield of the Basilica cultivar with 48% in the year 2004, with 34% in the year 2005, and with 49% in the year 2006. The adapted cultivars Basilica and Geea yielded, in all experimental years, seed yields between 400 and 550 kg/ha. The lowest yield during the experimental cycle was in the De Novi Sad provenance (the *Viridis* form) in which yield was below 200 kg/ha.

Synthesis of results concerning seed yield is shown in Table 1 and in Figure 1. To note the high yields in the Geea cultivar and in the De Şag provenance. Thus, seed yield in the Geea cultivar was higher with 22.00% than that of the control cultivar, i.e. a very significant difference of about 100 kg/ha. The lowest seed yield, over 600 kg/ha, superior to that of the control cultivar with 43.00%, was in the De Şag provenance, the only provenance with good chances of being expanded in the studied.

*Tabel 1.*

The synthesis of the results obtain in 2004+2006 experimental cycle in Carani area depending on the seed production

| Specification | Cultivars (provenience) | | | | |
|---|---|---|---|---|---|
| | Basilica | Geea | Prov. De Şag | Prov. De Novi Sad forma *Viridis* | Prov. De Novi Sad forma *Violaceum* |
| Yield kg/ha | 426 | 523 | 611 | 134 | 275 |
| % | 100 | 122 | 143 | 31 | 64 |
| Diference kg/ha | | 94 | 185 | -292 | -151 |
| Significance | | XXX | XXX | 000 | 000 |

DL5%=42 kg/ha DL1%=61 kg/ha DL0,1%=92 kg/ha

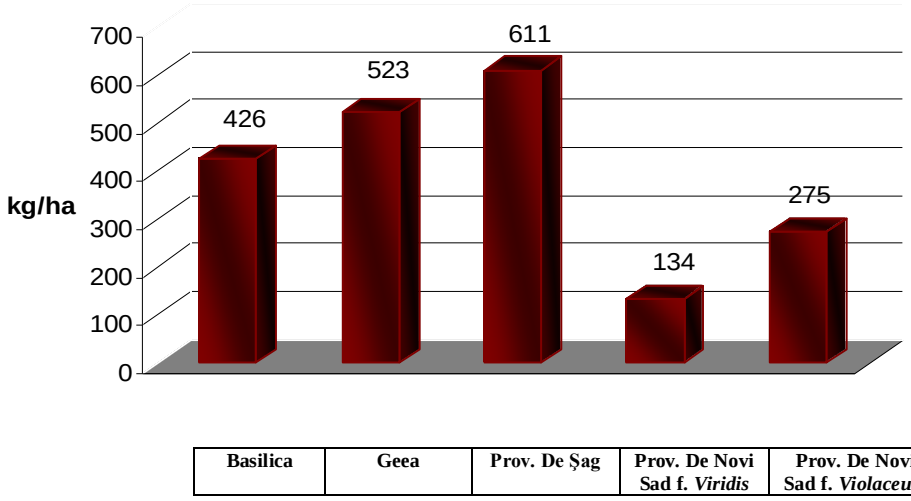
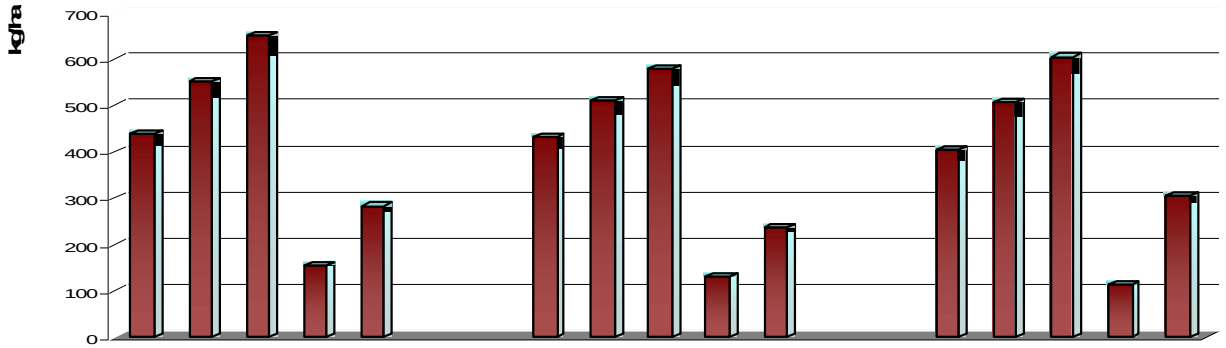



Figure 1.2 The production of seed depending of genotip in Carani area




| | Basilica | Geea | Prov. De Şag | Prov. De Novi Sad *Viridis* | Prov. De Novi Sad *Violaceum* |
|---|---|---|---|---|---|
| X | 440 | 551 | 652 | 156 | 283 |
| % | 100 | 125 | 148 | 35 | 64 |
| Diferenc e | | 111 | 212 | -284 | -157 |
| **2004** | | | | | |

| | Basilica | Geea | Prov. De Şag | Prov. De Novi Sad Viridis | Prov. De Novi Sad *Violaceum* |
|---|---|---|---|---|---|
| X | 433 | 512 | 580 | 131 | 237 |
| % | 100 | 118 | 134 | 30 | 54 |
| Diferenc e | | 79 | 147 | -302 | -196 |
| **2005** | | | | | |

| | Basilica | Geea | Prov. De Şag | Prov. De Novi Sad Viridis | Prov. De Novi Sad *Violaceum* |
|---|---|---|---|---|---|
| X | 405 | 507 | 605 | 114 | 306 |
| % | 100 | 125 | 149 | 28 | 75 |
| Diferenc e | | 102 | 200 | -291 | -99 |
| **2006** | | | | | |

Figure 1.1. The production of seed registered in Carani area

## CONCLUSIONS

If we observe the cultivation technologies specific to basil crops – adapted cultivars Basilica and Geea – we can get, from 1 ha of seed plots, the amount of seed necessary to set 80 to 100 ha of crops.

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