ABSTRACT

The production of seeds and seedlings includes the full range of scientific activities (observations, measurements and experiments) and applications (analysis, design and management) in agriculture and other economic sectors which process and markets the agricultural and agro-industrial products and focuses on the recovery , preservation or restoration of natural, human and financial resources that are specific to the local and regional agroecosystems.

The necessity of using seeds with physical and biological superior properties is one of the basic requirements for obtaining higher productions in terms of quantity and quality. The biological attributes define the qualitative aspect, the genetic ability of seed to have a high vital potential. Besides these, seed quality and value of use is complemented by features as : authenticity, purity, faculty and germination energy, power to cross, humidity and plant health.

In our country it follows to ensure the seed production industry with selected seeds of the most valuable varieties. Those which are dealing with the production and the use of seeds must respect and apply the rules on the control of seed quality.

The control action in the field of the seed crop is done by state inspectors who check: the location cultures (if respects the rotation and spatial isolation), the authenticity of a grown variety, plant health, proper application of technologies to the culture and the works of collection, preparation and storage of seeds.

Before entering into the production, seeds are analyzed at the laboratories organized in each conty (belonging to The Territorial Inspector for Quality Control of Seed and Planting Material), which are established knowing the rules of STAS's, the main attributes whose values are certified in a report.

Thus, this issue requires the development of a bean seed crops with secure crops from year to year and every year, without the need to „stock up" too big, which requires *the optimization of the dwarf bean seed crop by conducting studies and research on some technological links*.

Therefore, by the analysis of experimental factors, we decided to establish the following :

- wich is the most appropriate assortment of varieties (2-3 modern cultivars) that are suitable for cultivation in order to obtain seed in the climatic conditions of Iaşi county;
- which is the setting schedule and the optimal plant density, in order to obtain high quality productions and economically efficient;
- the modern fertilization regime which povides the best possible vegetation, vigorous, uniform and healthy plants that will produce the maximum of quality production and with high economic efficiency;
- the extend to which technological factors will influence seed quality and the indicators that give genetic and biological value for the studied varieties.

To achieve the objectives have been conducted two series of experiments in the SDE, at horticultural farm „V. Adamachi" , Iaşi, in 2009 – 2012. In the first series of experiments had been studied three experimental factors, as follows: cultivar, age of establishment and fertilization regime.

In the second series of experiments were studied two experimental factors : cultivation and crop density. The results will provide theoretical and practical solutions for the production specialists on some elements for the support of the related principles of optimization technology for the seed production in dwarf garden beans.

Based on studies in the thesis I came to the following relevant conclusions:

- The climatic conditions in Iaşi aren't limited for vegetable cultivation in the field, with the exception of the monthly and annual rainfall average, which will be supplemented by irrigation. This was confirmed during the experimental period by the deficit of 276,6 mm.
- The morphological and systematic soil surveys have made in the teaching field of the Department of Vegetable to distinguish a chernozem soil type (CZ), cambic (cb), epicalcaric (ca), gradually (XRG), formed on a pelic mold. The limiting factors of soil fertility of this type are represented by high content of clay and the soluble salts.
- The physico-chemical properties of soil are optimal, which means that the soil has a good and very good buffering capacity , what ensures its stability in terms of agrochemical and crop nutrition, but they must be maintained and improved through improvement works in the vegetable inpatient setting from USAMV, Iaşi.
- The range studied in terms of the growth type belongs to the Phaseolus vulgaris L. var. nanus L., dwarf port, species with the height ranging from 35 – 40 cm in Bergold and Maxidor cultivars, 45 – 50 cm in Scylla and Minidor cultivars. Jutta, Saxe and

Slendererette varieties in the three experimental years have achieved an average plant height of 40 – 45 cm.

- All cultivars are presented as upright bush form with four or five branches, with growth driven, without issuing glib strains.
- In the conducted study there has been a positive correlation between the number of branches and pods per plant production.
- Maxidor, Saxe and Slenderette cultivars showed an increased resistance to the bean common burns and five of the seven species used in the experiments exhibited resistance to the bean anthracnose as follows: Jutta, Scylla, Maxidor, Slenderette and Bergold.
- The assortment precocity ranges from very easrly (Bergold), in early (Maxidor, Saxony) and semi early (Jutta, Scylla, Minidor and Slenderette), which causes enlargement converse for garden bean cultivation in Moldova.
- In the mature fruit color technology, we cand say that three cultivars have yellow pods (Maxidor, Minidor and Slenderette) and four with green pods (Jutta, Scylla, Saxe and Bergold).
- The potential for production of the set is varied from 7 t / ha (Bergold) to 14 t / ha (Minidor and Scylla).
- 1000 grain weight ranged from 200 – 215 g (Bergold) at 390 – 410 g (Saxony). The seed with MMB of 250 – 290 g were obtained between other cultivars (Jutta, Scylla, Maxidor, Minidor and Slenderette).
- Regarding the influence of cultivar on seed production can be said that the highest yield was achieved with the Scylla variety – 2469 kg/ ha, with a difference from the average experience of 461kg / ha.
- Depending on the age of creation, production of seeds from the garden beans, varied from 1944 kg / ha for the first period, 2101 kg / ha for the second period, the increase of production is 93 kg / ha.
- The results on the influence of fertilization on seed production in dwarf garden beans reveal that production can vary within wide limits rehearsals, and from 1716 kg / ha in variant N40, P50, K50 from 2361 kg / ha in the variant N40, P75, K75, the average in the three years of study ranged from 1902 kg / ha in variant N40, P50, K50 to 2119 kg / ha in variant N40, P75, K75.

- The interaction effect on seed production in seven led garden bean cultivars and three epochs of creation reveal it ranged from 1532 kg / ha for sowing Bergold 30.05 on up to 2617 kg / ha at the Scylla cultivar sown in 15.05 era.
- The interaction on seed production in the garden beans determined by cultivar and fertilization regime in 2009 – 2012 highlights the positive effect of fertilization with N40, P75, K75 at the Scylla variety, with the average yields of 2589 kg / ha. Productions were achieved above the average of the experience by Minidor variety wih increases towards the 462 kg / ha.
- The average production of seeds in 2009 – 2012 varied from 1617 kg / ha for Bergold to 2537 kg / ha for Scylla, confirming the results obtained in the first series in the analysis.
- As earliness is noted Bergold variety, as total production stand out Scylla and Saxe varieties that performs significantly differences from the total production average of the experience.
- The average production of seed from dwarf garden beans increased to 1980 kg / ha in the case of density of 286,000 pl / ha up to 2259 kg / ha in the density of 362,000 pl. /ha. The version set to 476000 plants / ha has achieved an average production of 2133 kg / ha, similar to the average experience (2124 kg / ha), considered statistically insignificant.
- The interaction effect on seed production in garden beans determined by the cultivar and crop density on each repetition emphasize that it ranged from 1323 kg / ha in the variant (Bergold x 286000 plants / ha) to 2823 kg / ha in the variant Scylla x 362000 / ha, where the mean of the experiment was 2124 kg / ha.
- The results on the influence of cultivar and fertilizer regime on physical purity of seed experiments show that variations in purity ranged from 98,1% (Jutta x N39, P78, K38) and 99,7 % (Bergold x N40, P50).
- The influence of cultivar and fertilization regime on humidity in dwarf garden beans seeds emphasize that it ranged from 11,2% for the combination of factors Jutta x N40, P75, K75 and 13,3 % at Saxe variety fertilized with N40, P50, results thus obtained are lower than those of STAS 814 / 1981.
- The results on the influence of cultivar and fertilizer regime on MMB's for the 21 experimental variants emphasize that it ranged between 189 g at the Bergold variety, fertilized with N40, P50 and 355,4 g for the Saxe fertilized with N40, P75, K75, which is very important indicator, especially for the calculation of the norm of seed per hectare.

- The results on the influence of variety x treatment combinations of fertilization on the hectoliter seed mass emphasize that it ranged between 70,o kg / hl for the combination Saxe x N40, P75, K75 and 82,1 kg / hl for the Bergold variety fertilized with N40, P50, indicator to take into account at the storage of seeds.
- Regardless of cultivar and fertilization regime, total germination has a value above 90%, which fall the garden bean seed in the first grade quality.
- The cultural value of the seed for the 21 experimental variants ranged from 89,0/% for Jutta cultivar fertilized with N39, P78, K38 and 94,7% in the Slenderette combination x N40, P75, K75.