

Враховуючи інтенсивність росту сосни звичайної у випробних культурах за висотою та діаметром істотної різниці не виявлено. За висотою переважає Чернігівське походження. Проте за селекційними категоріями та категоріями Крафта існує істотна різниця між походженнями. Слід наголосити що найкраще плодоношення у випробних культурах і 1978 і 1980 року створення у Київського походження.

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INFLUENCE OF GROWTH REGULATORS ON THE FORMATION OF STEM'S HEIGHT, SPROUTS OF FIRST AND SECOND ORDER OF MEDICAL SURGERY'S PLANTS

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Among the 25 cultivated in Ukraine medicinal plants, the marigold is one of the most multi-tone. According to far incomplete data, the average annual needs of the domestic chemical and pharmaceutical industry in the raw materials of marigold make up 700 tons. The amount of collected raw materials amounted to 25.9 tons in 2013. Medicinal herbs (marigold) are grown today in small areas, moreover, with rather low yields. Among the reasons for the low productivity of inflorescences of medicinal herbs, the lack of low-energy technologies for their cultivation, — adapted to modern conditions, with strengthened elements that contribute to the biologization of the production process and where costs of chemical and man-made resources (mineral fertilizers, plant protection products, etc.) are reduced, does not rank the last place. No less important reason is the violation of the relationship between the main macro nutrients in the general background of a significant reduction in their available forms in the soil [5].

In addition, increasing the productivity of agricultural plants due to the introduction of mineral fertilizers and using of pesticides often leads to a deterioration of the quality of products and the ecological state of agroecosystems [1].

Application of biologically active drugs makes to replace partially mineral fertilizers (or reduce the dose of their using) and increase the rate of their applying by plants [2, 3].

Widespread introduction of agricultural production of medicinal marigolds, as modern needs of the national economy demand, is possible only with the application of environmentally safe sources and mineral nutrition of this crop [4].

The purpose of research was to detect the effect of growth regulators on the formation of the stem's height, the number of first and second order shoots in varieties of medicinal native and foreign breeding marigolds.

One of the main structural elements of the productivity of medicinal marigolds is the number of shoots of the first and second order (Fig. 1).

In 2014 the formation of the number of first-order shoots in medicinal marigolds, the highest value in the variant without the preparation had a Ryzhik variety - 10 units, while the coefficient of variation was 8.7%. Using the growth regulator Mars -ELBi, the best varieties were Mahrova 2000-10 units and Natalia 10 units with a variation coefficient of 7.9 and 6.1% respectively. Using the Benefit controller with a number of shoots of 9 units and a variation coefficient of 8.4% - Mahrova variety of 2000 units.

In 2015 the number of first-order shoots in the experiment without the drug was the most significant for the Natalian variety - 12 units and a variation coefficient of 7.2%. In application the Mars -ELBi regulator, the Mahrova variety 2000 - 12 units showed the best with a

variation coefficient of 6.3%. The application of the growth regulator Benefit yielded better results for the Natalia variety with a variation coefficient of 6.9% and a number of twelve shoots.

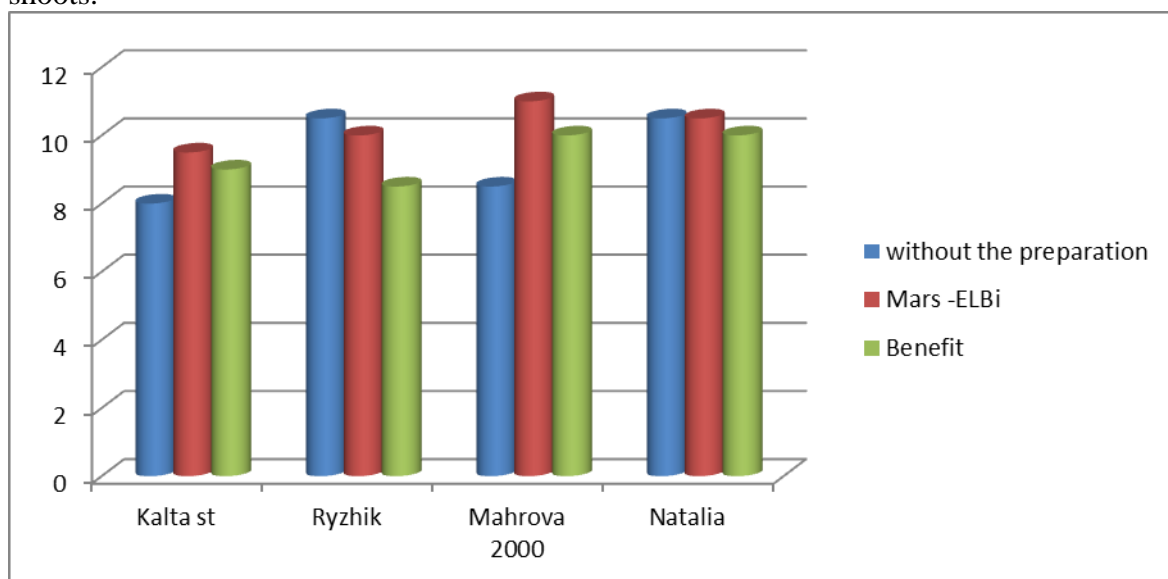


Fig.1. Influence of growth regulators on the formation of second-order shoots in varieties of medicinal grasses (2014-2015).

The number of branches of the second order changed under the influence of the action of growth regulators, using in experiments. Comparing the data obtained on average over two years, we have the following results. The smallest value of this indicator can be noted in the standard of Kalta, in the variant without a preparation - 20.5 units, and the highest value in the variety of Mahrova 2000 - 28 units. Applying the drug Mars -ELBi, the smallest indicator was noted for the Ryzhik variety 27.0 units, the largest is 34 units in the Makhrovaya 2000 variety. The Benefit values for growth regulator were as follows: 25.5 units of Kalta and 37 units in the variety of Mahrova 2000.

During two years' research, the variation of the structure's elements of the crop of medicinal marigolds' varieties, the best number of shoots of the first and second order were noted in the varieties of Mahrova 2000 and Natalia, processed by the growth regulators of Mars -ELBi and Benefit.

References:

1. Anishin L.A. Emistim, Agrostimulin and others / Village News, 2002 - No. 48, P.4.
2. Viger S.M. Phytocidology with the basics of cultivation and application of phytoncid and medicinal plants / S.M. Viger - K.: "Ruta", 2009. – 184 p.
3. Kvaschuk O.V. Medical plant growing / O.V. Kvaschuk, V.Y. Khominf, V.M. Komarnitsky - Kamyanets-Podilsky, "Medobory-2006", 2011. - 256 p.
4. Brunching Ion. The study on the influence of some technological elements on its production and its quality at *Calendula officinalis* L. Autoreferate of the doctoral thesis in agriculture: 06.01.09 - Phytotechnology / Ion Brânzilă; State Agricultural University of Moldova. - Chisinau. - 2005. - 24 p.
5. Mushroom G. Medicinal Plants for Your Health / G. Musteta I. Brunch. - Chisinau: TC. - 2002. - 30 p.