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Options accumulation of biochemical components in fresh fragrant fennel leaves outlet.

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ABSTRACT

In the article the research results of fragrant dill 2006-2016 samples, biochemical composition defined in fresh rosette leaves, parental emphasis original forms, depending adapt to environmental factors. Meteorological background that allows realizing the potential of genetic samples. Flexible and stable characteristics for a new generation of varieties biochemical components (dry matter, total sugars, ascorbic acid), which is guaranteed to provide a high quality product.

Keywords: fennel leaves, fragrant dill, biochemical.

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INTRODUCTION

Reed (*Anethum L.*) type Dill scented (*Anethum graveolens L.*) is an annual, cold resistant aromatic plant. Its distribution due to the presence in it of essential oil, which were produced from ripe dried fruit, where it is content is 4-6% and of biochemical components in the outlet leaves.

Furthermore, sweet fennel refers to plants that are not only use in food every day fresh and processed forms but also has great medicinal potential.

For the literary analysis of scientific papers of famous scientists L.G. Dudchenko [1], O.Yu. Barabash [2], Z.D. Sych [3], T.K. Gorovoi [4], N.V. Glumovoi [5], O.A. Koroblovoi [6], V.M. Minarchenko [7], N.G. Kostenko [8] of sweet fennel is a source of vitamins and medical biochemical components, it is used to enhance the secretion of digestive glands division, motility of the digestive tract, it improves appetite, promotes the normalization of metabolism in the body. Used for the treatment of obesity, liver disease, gall bladder, kidney, anatsidnyh with gastritis, flatulence.

The above properties of sweet fennel encourage at IVM of NAAS scientists conduct research on sourcing with a set of components for creating new, sustainable generation against disease productive varieties. More than 60 years working in this area scientist's institution they create varieties of sweet fennel Kharkivskyyi 85, Pakhuchiyi and Sanat that were listed in the State Register of plant varieties suitable for dissemination in Ukraine. [9] In recent years, the breeding work aimed at determining the adaptive capacity of the gene pool by which create varieties with high yield they form regardless of the weather conditions during the growing season. Therefore, the selection of components for parental selection is based adaptation samples to extreme environmental factors. In addition, an important factor for us was the highlight meteorological background that allows realizing the genetic potential of the original sample. The content of biochemical components in the outlet leaves and provide stable and plastic components.

EXPERIMENTAL

From 2006 to 2016, the analysis of the economic characteristics and biochemical composition of the parent form Sanat variety of sweet fennel. The regularities of formation in the field (sowing third decade of April) yield of green leaf rosettes in the phase of technical maturity (20-25 cm height of outlet calf). Content in her dry matter, total sugar, vitamin C, which were determined by the ISO 4958: 2008 Fruits, vegetables and products of their conducted. Method for determination of ascorbic acid. ISO 4953-2008 acid hydrolysis method [10,11sch. statistical analysis conducted on methods G.L. Gromyko and B.A. Dospekhov [12, 13], breeding work conducted by techniques T.K Gorovoi [14].

RESULTS AND DISCUSSION

The research found variability (min-max) content in the outlet sweet fennel leaves dry matter 12.01-17.42%, 1.19-2.21% total sugars, ascorbic acid 98.01-121.81 mg / 100. The difference by 5.41%, 1.02%, 23.81 mg / 100 g (Table 1). Signs attributed to stable dry matter content and ascorbic acid with a coefficient of variation $V = 10.13\%$ and 6.46% respectively.

Table 1: The biochemical composition of fresh dill leaves outlet sweet variety Sanat

YEARS	THE AMOUNT OF ACTIVE TEMPERATURES, °C	THE AMOUNT OF PRECIPITATION, MM	DRY MATTER, %	TOTAL SUGAR, %	ASCORBIC ACID, MG/100 G
2006	2732,3	403,4	13,54	1,49	112,34
2007	2882,1	324,7	17,08	1,74	117,72
2008	2795,0	348,4	17,42	1,56	120,41
2009	2831,8	278,3	14,37	2,21	107,26
2010	3288,0	212,4	16,25	1,84	98,01
2011	2906,4	412,3	14,95	2,09	121,81
2012	2945,6	453,1	15,63	1,19	112,21
2013	2938,5	383,8	14,81	1,63	114,19
2014	2910,3	304,6	16,39	2,04	109,57

2015	2929,3	263,7	16,14	1,47	118,62
2016	2957,1	420,0	12,01	1,73	108,40
SSD ₀₅	-	-	1,8	0,21	11,8
V,%	-	-	10,13	17,69	6,46

Determined meteorological background (sum of active temperatures 2882,1 ° C and precipitation 324.7 mm) 2007 by which plants accumulate more dry matter 17.08%, 1.74% total sugars, ascorbic acid 117.72 mg / 100 g and 2010 where dry matter 16.25%, 1.84% total sugar by the amount of active temperatures, 3288,0 ° C and rainfall 212.4 mm. In 2011, more than the total accumulated 2.09% sugars, ascorbic acid 121.81 mg / 100 g (amount of active temperatures, 2906,4 ° C and rainfall 412.3 mm), while in 2014 the total sugar 2.04% (the amount of active temperatures, 2910,3 ° C and rainfall 304.6 mm). The best accumulation biochemicals plant rosette leaves of fragrant dill isolated background in 2007 the amount of active temperatures 2882,1 ° C and rainfall 324.7 mm.

Depending on the analysis of the main technological characteristics outlet leaves yield of grade Sanat. Proved that feature varied over the years of research from 27,00 t / ha to 29.85 t / ha yield as closely related (r) 0,7 of dry matter content then we analyzed the variability of yields depending on rainfall SCC = $\Sigma / (\Sigma \text{ act. } t-r \times 0.1)$ (Figure 1).

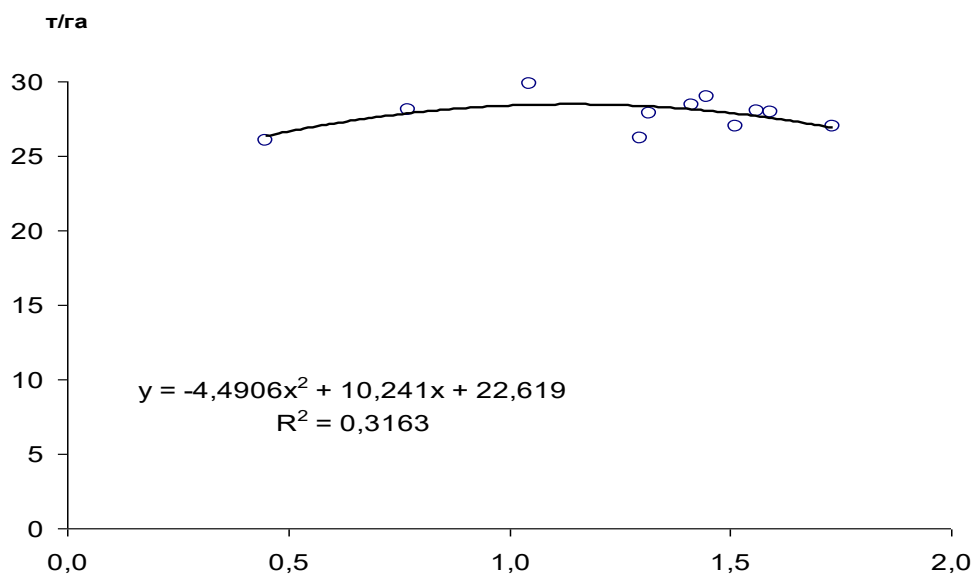


Fig. 1 Dependence yield outlet leaves of fragrant dill Sanat variety of hydrothermal coefficient (2006-2016)

CONCLUSION

Given these parameters adaptive features parental original forms by using between varietal hybridization and selection in generations created of line dill fragrant Chirik and Sheva with the corresponding vitamin C 93.12 and 89.3 mg / 100 g, which does not change depending on the conditions of the growing season. For a new generation of complex varieties of dry matter, total sugar and ascorbic acid in the outlet leaves of sweet fennel is effective meteorological background (the sum of active temperatures 2882.1 ° C and precipitation 324.7 mm) SCC = 1.13.

By stable characteristics (V = 10.13% and 6.46%) classified as dry matter content, and ascorbic acid.

REFERENCES

- [1] Dudchenko L. G. Pryano-aromaticheskie i pryano-vkusovoye rasteniya / Dudchenko L. G., Kozyakov A. S., Kryvenko V.V. – K. : Naukova dumka, 1989. – 304 s.

- [2] Barabash O. Yu. Zelenni ta bagatorichni ovochevi kultury / O. Yu. Barabash, S. T. Gutyrya. – K. : Agrarna nauka, 1997. – 52 s.
- [3] Sych Z. D. Garmoniya ovochevoi krasoty ta korysti / Z. D. Sych, I. M. Sych. – K. : Asteyi, 2005. – 192 s.
- [4] Ulyanych O. I. Zelenni ta pryano-smakovi ovochevi kultury / O. I. Ulyanych. – K. : «Diya», 2004. – S. 55-56.
- [5] Glumovaa, N. V. Biokhimicheskie osobennosti perspektivnykh pryanoaromaticeskikh rasteniyi Krymskogo regiona / Glumova N. V., Galukh L. V., Nemtinov V. I. // Ovochivnytstvo I bashtannytstvo : Mizhvid. temat. nauk. zb-k. – Kh., 2002. – Vyp. 47. – S. 338 – 343.
- [6] Korableva O. A. Biokhimicheskaya kharakteristika pryanoaromaticeskikh rasteniyi v usloviyakh introduktsii v usloviyakh Polesya Ukrainy / O. A. Korableva // Ovochivnytstvo I bashtannytstvo : Mizhvid. temat. nauk. zb-k. – Kh., 2003. – Vyp. 48. – S. 304 – 309.
- [7] Minarchenko, V. M. Atlas likarskykh Roslyn Ukrainy (khronologiya, resursy ta khronologiya) / V. M. Minarchenko, I. A. Tymchenko. – K. : Fitosotsiotsentr, 2002. – 172 s.
- [8] Kostenko N. P. Biologichni osoblyvosti ta agrotekhnika vyroshchuvannya vydiv Roslyn anisu zvychayinogo, kmynu zvychayinogo, koriandru posivnogo, fenkhelyu zvychayinogo, kropu zapashnogo / N. P. Kostenko // Sortovyvchennya ta okhorona prav na sorty roslyn. – 2012. – № 1. – S. 40 – 43.
- [9] Derzhavnyi reestr sortiv roslyn, prydatnykh dlya poshyrennya v Ukraini – Kyiv: 2016. [Elektronnyi resurs] – Rezhym dotupu:
- [10] DSTU 4958:2008 Frukty, ovochi ta produkty ikh pereroblyannya. Metod vyznachennya askorbinovoi kysloty. – 2008. – 4 s.
- [11] DSTU 4953-2008, Frukty, ovochi ta produkty ikh pereroblyannya. Metod kyslotnogo gidrolizu – 2008. – 5 s.
- [12] Gromyko G. L. Statystyka / G. L. Gromyko. – M.: Moskovskiyi universitet, 1981. – 408 s.
- [13] Dospekhov B. A. Metodika polevogo opyta / B. A. Dospekhov. – M. : Agropromizdat, 1985. – 351 s.
- [14] Suchasni metody selektsii ovochevykh I bashtannykh kultur [Tekst] / [Za red. Gorovoi T.K., Yakovenka K.I.]. – Kh. : IOB UAAN, 2001. – S. 465–500.