

RESEARCH ON THE QUALITY YIELD OF HERBAL MINT (*Mentha piperita* L.) UNDER THE INFLUENCE OF MINERAL AND ORGANIC FERTILIZATION IN CLIMATE CONDITIONS IN S.C.D.A. LOVRIN

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REZUMAT: Având în vedere faptul că fertilizarea este una din măsurile care, aplicate corespunzător, duc la creșterea producției și implicit a calității acesteia, multe cercetări efectuate în ultimul timp s-au axat pe găsirea unor formule optime pentru aceasta. Lucrarea de față își propune să analizeze efectul fertilizării organice și chimice asupra producției de herba la mentă (*Mentha piperita* L.). Din analiza rezultatelor privind producțiile de herba, se constată că aceasta este influențată mai mult de fertilizarea organică decât de cea chimică. Diferențele dintre variante privind producția de herba este mai evidentă în cazul fertilizării organice. Din analiza rezultatelor privind producția de herba la mentă se constată că în majoritatea variantelor experimentale realizate prin utilizarea fertilizării organice, producția de herba depășește 18000 kg/ha. Cele mai mari valori ale producțiilor de herba la mentă se înregistrează la varianta cu fertilizare organică și chimică plus fertilizare foliară – 25200 kg/ha.

Cuvinte cheie: mentă, fertilizare organică, calitate, producții herba.

ABSTRACT: Given the fact that fertilization is one of the measures which, properly applied, lead to increased production and hence its quality, more research carried out lately have focused on identifying the optimal formula. This paper aims to examine the effect of organic and chemical fertilization on the production of herba in mint (*Mentha piperita* L.). The analysis yields results on herba, it appears that it is influenced more by organic fertilization than the chemical. Differences between the versions on the production of herba is more evident in organic fertilizer. Analyzing the results of the mint herba production shows that in most experimental variations achieved through the use of organic fertilizer, production of herba exceeding 16000 kg/ha. The highest values of production of herba in mint variant is recorded and chemical fertilizer plus organic foliar fertilizer - 25200 kg / ha.

Keywords: mint, organic fertilizer, quality, yield herba.

1. INTRODUCTION

Peppermint (*Mentha piperita*) is one of the most popular and widely consumed aromatic and medicinal plants by people. The reason that peppermint is so popular is that it spreads a great smell nice, but mostly because it is an excellent herb tea that gives a great taste. Being a plant originating in northern Europe, is found in spontaneous, instead it is cultivated on large areas in many parts of the world. Peppermint oil contains high levels of essential active menthol.

The volatile oil of peppermint and the other components of the plant have stomachic action, carminative, choleric, cardiotonic, analgesic.

Menthol is widely used in the preparation of toothpaste and mouth washes because of soft properties, antiseptics and the correction of taste and smell.

Peppermint essential oil is widely used in food, the preparation of liqueurs, candies, which prints an odor and a pleasant.

Proper fertilization with manure, which is the best fertilizer for mint (especially on poor soils), depending on soil applied doses of 20-40 t / ha (incorporated by plowing), it is very important not only for quality production, but also to maintain and improve the productive potential of soil. Herba and foil production is influenced by the technology applied (especially fertilization) that determines the quality and increase production.

2. MATERIAL AND METHOD

Experience has been placed in the experimental field of research Lovrin resort. The experimental field was located on a chernozem soil type. The experiments were

RESEARCH ON THE QUALITY YIELD OF HERBAL MINT (*Mentha piperita* L.)

bifactorial type, to repeat the concluding annual cycle so that the experimental field in the first year we have experience, second year and third year.

Variety Columba used in experiments:

FACTOR A - organic fertilization - 20 t / ha

a1: N₀P₀K₀

a2: N₆₀P₆₀K₆₀

a3: N₉₀P₉₀K₉₀

a4: N₁₂₀P₉₀K₉₀

a5: N₁₂₀P₉₀K₉₀ + foliar fertilization

FACTOR B – unfertilized organic

a1: N₀P₀K₀

a2: N₆₀P₆₀K₆₀

a3: N₉₀P₉₀K₉₀

a4: N₁₂₀P₉₀K₉₀

a5: N₁₂₀P₉₀K₉₀ + foliar fertilization

3. RESULTS

Results obtained in the production of herba mint in the experimental field of S.C.D.A. Lovrin

In table 1 and, figure 1 is presented the average yields herba, the mint produced in the experimental field of S.C.D.A. Lovrin.

Production in each experimental variant was cleansed of impurities and weighed. Computation and interpretation of results was done by variance analysis method. (N. N., Săulescu 1967).

Table 1

Influence of organic and mineral fertilization on the production of the mint herba

A – fertilizare organică + chimică	Recolta kg/ ha	%	Diferența kg/ ha	Semnificația
a1 N0P0K0	12000	100	-	
a2 N60P60K60	14066	117	2066	
a3 N90P90K90	16133	134	4133	xxx
a4 N120P90K90	17133	143	5133	xx
a5 N120P90K90 + FF	18666	156	6666	xxx

DL5%= 2571 kg/ha; DL 1% = 3655 kg/ha; DL 0,1% = 5292 kg/ha.

Table 1 and figure 1 show that yield at the mint herba is positively influenced by increasing nitrogen rates up to

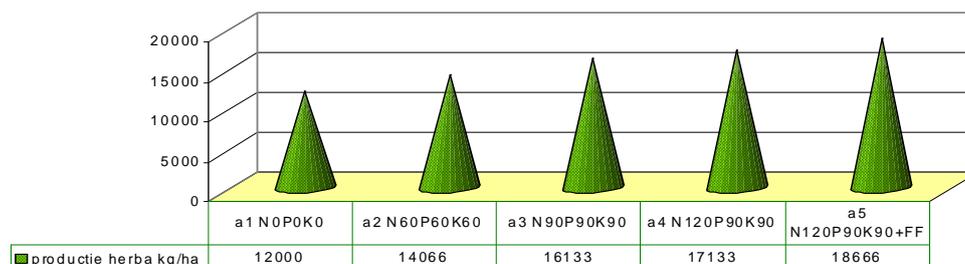


Fig. 1. Changes in production of herba, the mint produced the version with the organic fertilizer S.C.D.A. Lovrin.

120 kg / ha, which is the highest production growth. It is worth noting that the production of foliar fertilization on peppermint herba achieve a production of 18666 kg / ha which is obtained from the witness increased production of 6666 kg / ha. It is noted that the production increases made in versions with 120 or 120 kg / ha N, + foliar fertilizer of 5133 kg / ha respectively 6666 kg / ha are statistically significant and very significant as distinct. In the variant fertilized with 90 kg / ha nitrogen production growth rate is obtained as very significant statistically. The lowest production was obtained variant herba N0P0K0 12,000 kg / ha, and was not statistically.

The results of the mint production under the influence fertilization herba mineral. If seeding, organic fertilization, total average production of herba obtained from mint is different than the production version which was made organic and mineraly fertilized.

Table 2

Herba productions under the influence of chemical fertilization on peppermint S.C.D.A. Lovrin

B – fertilizare minerală	Recolta kg/ ha	%	Diferență a kg/ ha	Semnificația
b1 N0P0K0	13333	100	-	
b2 N60P60K60	14866	111	1533	x
b3 N90P90K90	16133	121	2800	xxx
b4 N120P90K90	17533	132	4200	xxx
b5 N120P90K90 + FF	18466	138	5133	xxx

DL5%= 1325 kg/ha; DL 1% = 1884 kg/ha; DL 0,1% = 2728 kg/ha.

Analysis results show that when seeding with mineral fertilizer, the best yields were obtained in variant fertilization N120P90K90 + FF 18466 kg / ha, followed by variants N120P90K90 to 17533 kg / ha, N90P90K90 to 16133 kg / ha are all as very significant statistically. If we obtained a variant production N60P60K60 14866 kg / ha, with an increased production of 1533 kg / ha, being assured that statistically significant. In unfertilised variant showed the lowest production - 13333 kg / ha and is not statistically assured. It is worth noting that the production of chemical fertilization on peppermint herba decreases each variant, compared with production of herba achieved through organic and mineral fertilization.

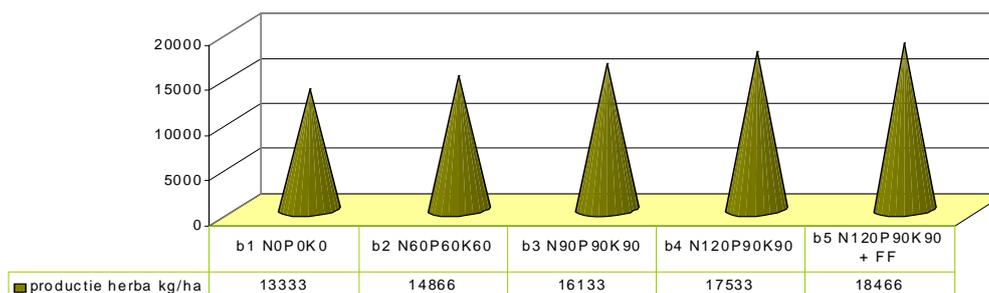


Fig. 2. Changes in yield of herba, the mint produced under the influence of chemical fertilization S.C.D.A. Lovrin.

4. CONCLUSIONS

In the experimental field S.C.D.A. Lovrin have registered good results in the production of herba mint. Yields were different from the one variant to another under the influence of fertilization (organic and mineral).

A careful analysis of the results on the production quality of herba shows that the best crops in mint herba were recorded under the influence of organic fertilization.

It is worth noting that the mineral fertilization, production decreases at mint herba each variant, compared with production of herba achieved through organic and mineral fertilizers.

Organic fertilization on peppermint culture influences both quality and quantity of production of herba mint in terms of the SCDA Lovrin.

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