RESEARCH ON THE INFLUENCE OF SOME TECHNOLOGICAL FACTORS ON THE PRODUCTION OF *AMARANTHUS SP.* OBTAINED IN TEIUȘ AREA, ALBA DISTRICT

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Abstract: *Romania, is currently looking for new plants which have a high potential crops need to have reduced requirements for resources (especially water and fertilizer), to withstand adverse environmental conditions, have a high growth rate and energy efficiency, produce substances that can be used in energy, food and industrial domain, and are participating and enhancing biodiversity in agricultural ecosystems. The Amaranthus species are cultivated as "pseudo cereals" because of their high content of carbohydrates, proteins and fats, comparable or even superior to cereals. The tested cultivars were Golden Giant, Plenitude, Amont, and Hopi Red Dye. The interaction between the regime of irrigation, fertilization regime and variety on production, show that the varieties Golden Giant and Hopi Red Dye have lost production if irrigated, regardless of the type of fertilizer used. Amont variety has a distinct increase of production significantly over witness. Production of Amaranthus spp. Is significantly influenced by the factor variety, and the factors fertilization and irrigation with influences nesemnifcative.*

Keywords: *Amaranthus, fertilization, irrigation, production.*

INTRODUCTION

Amaranthus sp. can be used as a cereal for grains, or as a vegetable for leaves, and it has great potential as fodder plant. It has high content of protein, carbohydrates and fats. Pseudocerealele may be of importance in economic terms as it may provide a solution to the development of sustainable agriculture in countries whose natural resources are depreciating, and the population is growing. Pseudocerealele represents an alternative to organic farming system based on crop rotation, which aims, among other things, preserving biodiversity, environmental risk management and food security.

MATERIALS AND METHODS

The results obtained describe experimental culture founded near the town of Teiuş area, positioned in the central eastern Alba district.

The average annual temperature is 9,7o C with maximum values recorded in July.

In the experiment four species of *Amaranthus* were used: Amont (*Amaranthus cruenthus*), Golden Giant (*Amaranthus hypochondriacus*), Hopi Red Dye (*Amaranthus hypochondriacus*), Plenitude (*Amaranthus hypochondriacus*).

The experimental design is of trifactorial type (2x3x4), placed in three repetitions.

RESULTS AND DISCUSSIONS

The analysis of productions had in view the interpretation of the values determined and obtained depending on the individual influence of tehnological factors considered, as well as on the influences caused by the interaction of factors.

The Plenitude sort records the greatest production increases, 1344,99 kg/ha, in irrigation conditions, whereas the Golden Giant sort, in irrigation conditions, records a decrease in production of 360,73kg/ha.

Table 1

The interaction between the regime of irrigation, fertilization regime and variety on production (kg / ha) of Amaranthus spp., In 2015, the Teius, Alba County

Variant	Average yield (kg/ha)	Relative yield (%)	Difference (kg/ha)	Significance of the differences
a1 b1 c1	1836.85	100.0	0.00	Mt.
a2 b1 c1	1290.08	70.2	-546.77	000
a1 b1 c2	2181.67	100.0	0.00	Mt.
a2 b1 c2	4318.96	198.0	2137.29	***
a1 b1 c3	653.32	100.0	0.00	Mt.
a2 b1 c3	1410.86	216.0	757.55	***
a1 b1 c4	1491.39	100.0	0.00	Mt.
a2 b1 c4	1135.21	76.1	-356.17	000
a1 b2 c1	3264.27	100.0	0.00	Mt.
a2 b2 c1	1275.76	39.1	-1988.51	000
a1 b2 c2	2012.47	100.0	0.00	Mt.
a2 b2 c2	2543.03	126.4	530.56	***
a1 b2 c3	985.53	100.0	0.00	Mt.
a2 b2 c3	1512.33	153.5	526.77	***
a1 b2 c4	1936.48	100.0	0.00	Mt.
a2 b2 c4	1520.78	78.5	-415.70	000
a1 b3 c1	2019.80	100.0	0.00	Mt.
a2 b3 c1	3472.90	171.9	1453.10	***
a1 b3 c2	2512.34	100.0	0.00	Mt.
a2 b3 c2	3879.47	154.4	1367.13	***
a1 b3 c3	1360.56	100.0	0.00	Mt.
a2 b3 c3	1172.76	86.2	-187.80	000
a1 b3 c4	1267.52	100.0	0.00	Mt.
a2 b3 c4	1368.30	108.0	100.78	***

DL (p 5%)	47.10
DL (p 1%)	66.59
DL (p 0.1%)	99.51

Note: a_1-neirigat, respectiv a_2-irigat; b_1-nefertilizat, b_2-fertilizat cu gunoi de grajd (organic), b_3-îngroșământ complex (NPK), c_1-Golden Giant, c_2-Plenitude, c_3-Amont, c_4-Hopi Red Dye.

CONCLUSIONS

Variety Plenitude recorded the highest increases (60.2%) under irrigation, and the Golden Giant sorts, under irrigation conditions, recorded a decrease of 15.2% of production.

The fertilizer complex brings no significant increase of production at the Hopi Red Dye sort, and in the case of the sort Plenitude the fertilizer intake decreases production with 54.41 kg / ha if fertilized with the complex (NPK), and 972.56 kg / ha when fertilized with organic stable manure.

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