AMINO ACIDS CONTENT OF ZEA MAYS EVERTA PERLAT 625 IN IRRIGATED AND NOT IRRIGATED SYSTEM

CONȚINUTUL ÎN AMINOACIZI LA ZEA MAYS EVERTA PERLAT 625 ÎN SISTEM IRIGAT ŞI NEIRIGAT

OLIMPIA PANDIA, SARACIN ION

University of Craiova, Faculty of Agricultural
Corresponding author: Olimpia_pandia@yahoo.com

Abstract: *The importance of capitalization of corn grains Zea Mays Everta Perlat 625 and their commercialization, led to detailed research of the content of amino acids at corn hybrid Perlat 625. Taking into account the genetic dowry of that hybrid, in the two systems irrigated and not irrigated the quantity and quality of amino acids and essential amino acids and their connection in the two systems. As in proteins can be found 23 different amino acids which plays important role in obtaining qualitative production at corn grains, it will be imposed getting more significant results, to improve their quality: protein substances*

Rezumat: *Importanța valorificării boabelor de porumb Zea Mays Everta Perlat 625, şi omercializarea lor, a condus la cercetarea amănunțită a conținutului de aminoacizi la hibridul de porumb Perlat 625. Ținând cont de zestrea genetică a hibridului respectiv s-a urmărit în cele două sisteme irigat şi neirigat, cantitatea şi calitatea de aminoacizi şi aminoacizi esențiali şi legătura acestora în cele două sisteme. Deoarece în proteine se găsesc 23 de aminoacizi diferiți care joacă un rol important în obținerea de producții calitative la boabele de porumb, se impune obținerea de rezultate cât mai semnificative, pentru îmbunătățirea calității acestora.*
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Key words: *amino acids, hybrid, qualitative production*
Cuvinte cheie: *substante proteice, aminoacizi, hibrid, producție calitativă*

INTRODUCTION

Protean substances from corn grain belong to globulins, prolamin and glutein, methionine was also observed, an essential amino acid together with lysine and tryptophan increase the alimentary quality of this one, expecting from corn, the increase of the protein content at 12-15%. With this paper, the author attempts to emphasis the economic importance of corn for pop corn but also the nutrient value for human, for zoo technical sector, in the industry of bio fuels, etc.

MATERIALS AND METHOD

Studies have been realized as part of the Central Laboratory of Faculty of Agriculture from Craiova, having as determination material the amino acids from corn grains at hybrid *Zea mays* Everta Perlat 625, which was cultivated at the Botanical Garden part of the University. The chemical analyses of corn grains emphasized differential quantities of amino acids on corn grains that were cultivated in the two systems: irrigated and not irrigated.

ANALYSIS OF EXPANSION WITHIN THE LABORATORY

At hybrid Perla 625, depending on the production of grains was calculated the content in amino acids in kg/ ha. The determination of analyses was realized through the method of spectrophotometry and chromatography, after preliminary the tests that were analyzed have been dried in the kiln. The acids: monoaminomonocarboxylic - were studied: alanine, valine, leucine, isoleucine and oxydrilats and sulfurhydrate of acids from the group of monoaminomonocarboxylic have been studied: serine, treonine, cysteine, methionine. From

monoaminomonodicarboxylic acids have been studied: aspartic, glutamine. From diaminomonocarboxylic acids: arginine and lysine. An important aromatic amino acid that was studied was thyeozin and from heterocyclic amino acids has been studied: tryptophan, proline and histidine.

Table 1

The contents in amino acids expressed as kg/ha (a function of the crop grains production) and Perlat 625 hybrid

Amino acid	Irigated sistem g/100g s.u.	Amino acid contents (kg/ha)
aspartic	0,694	4,476
threonina	0,415	2,677
serina	0,492	3,173
glutamina	1,3	8,385
prolina	0,66	4,257
cisteina	0,38	2,451
glicozina	0,46	2,967
alanina	0,81	5,225
valina	0,485	3,128
metionina	0,14	0,903
izoleucina	0,41	2,645
leucina	1,015	6,547
tirozina	0,618	3,986
phenilalanina	0,521	3,360
histidina	0,52	3,354
lizina	0,442	2,851
arginina	0,666	4,296
Total aa	10,028	64,681
Total aae	4,768	30,754

Figure 1. *Zea Mays Everta* Perlat 625

Table 2

The contents in amino acids expressed as kg/ha (a function of the crop grains production) and Perlat 625 hybrid

Amino acid	Irigated sistem g/100g s.u.	Amino acid contents (kg/ha)
aspartic	0,671	2,021
threonina	0,412	1,241
serina	0,482	1,452
glutamina	1,29	3,885
prolina	0,64	1,928
cisteina	0,378	1,139
glicozina	0,41	1,235
alanina	0,793	2,389
valina	0,491	1,479
metionina	0,142	0,428
izoleucina	0,329	0,991
leucina	0,928	2,795
tirozina	0,611	1,840
phenilalanina	0,631	1,901
histidina	0,394	1,187
lizina	0,415	1,250
arginina	0,634	1,910
Total aa	9,651	29,069
Total aae	4,402	13,259

In the not irrigated system of culture can be observed significant values of the aspartic acid, proline, alanine, leucine, thyrozin, phenilanin and arginine (g/100 g S.U.). This content reported to the production of grains, we obtain values (Chart 1) expressed in kg/ha, which reached 29,069 kg/ha total amino acids and the value of 13,259 kg/ha at essential amino acids.

In the irrigated system of production, the content at 100 g s.u., presents significant values at the same amino acids, existing a significant difference at the amount of amino acids, as well as essential amino acids of almost 300g, and at hectare the difference is of about 7 kg/ ha at essential amino acids.

Figure 1. *Zea Mays Everta* Perlat 625

For quantitative determination of amino acids have been used the chromatographic method.

Essential amino acids are those amino acids which can be synthesized only in the vegetable kingdom. They are of a special importance because in their absence specific proteins that are necessary to the organism can not be synthesized. From the class of essential amino acids is a part: valine, leucine, isoleucine, phenilalanin, treonin, methionine, lysine, tryptophan,

histidine. It was observed the dose of tryptophan which was read at photocolormeter with red filter and will be compared with the standard curve made with casein.

Dosing the lysine was determined and read at spectrophotometer, and aromatic amino acids have been identified through xanto protein reaction.

CONCLUSIONS

- The content in amino acids presents values that are superior depending on the culture system in favor of the irrigated one, being observed low levels of the amino acids in the hybrid Perlat 625.
- We recommend for production the hybrid Perlat 625, in irrigation conditions
- The main protein of the corn grain will be characterized by an increased content of glutaic acid obtained in both systems, on second place being leucine.
- It is also recommended the cultivation of this hybrid with a shorter period of vegetation because are richer in protein substances than late hybrids.

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