UO‘T: 635.652.2:581.19+575.22.2

ODDIY LOVIYA TURI BOSHLANG‘ICH MANBALARI VA F_1, F_2 DURAGAYLARIDA URUG‘ TARKIBIDAGI ERKIN AMINOKISLOTALAR MIQDORI

Tursunova Nilufar Mo‘ydinovna
Biologiya fanlari falsafa doktori (PhD)
Chirchiq davlat pedagogika universiteti
nilufar.azimova.85@inbox.ru

DOI: https://doi.org/10.5281/zenodo.17536828

Annotatsiya. *Ushbu maqolada oddiy loviya turining mahalliy va xorijiy navlari, ulardan olingan F_1-F_2 duragaylarining urug’ida aminokislotalar miqdori natijalari tahlil qilinganda, ota-ona manbalardan Belaya fasol navida boshqa navlarga nisbatan yuqori ko‘rsatkichlarni, ya’ni, asparagin kislota (1,047 mg/g), glutamin (8,47 mg/g), treonin (1,39 mg/g), alanin (7,96 mg/g), metionin (1,00 mg/g), gistidin (6,38 mg/g) miqdorining yuqori ekanligi, F_1 duragaylaridan glitsin (0,993 mg/g), alanin (6,393 mg/g), prolin (1,66 mg/g), sistein (2,167), F_2 duragaylarda alanin (7,170 mg/g), fenilalanin (3,976 mg/g) erkin aminokislotlar miqdori yuqori bo‘lishi qayd etildi.*

Kalit so‘zlar: *oddiy loviya, duragay, nav, oqsil, aminokislota, alanin, gistidin, valin, treonin.*

Abstract. *In this article, when analyzing the results of amino acid content in the seeds of local and foreign varieties of common bean and their F_1–F_2, hybrids, it was found that among the parental sources, the **“Belaya fasol”** variety showed higher values compared to other varieties. Specifically, it had higher levels of aspartic acid (1.047 mg/g), glutamine (8.47 mg/g), threonine (1.39 mg/g), alanine (7.96 mg/g), methionine (1.00 mg/g), and histidine (6.38 mg/g).Among the F_1 hybrids, higher amounts of glycine (0.993 mg/g), alanine (6.393 mg/g), proline (1.66 mg/g), and cysteine (2.167 mg/g) were recorded, while in the F_2 hybrids, increased levels of alanine (7.170 mg/g) and phenylalanine (3.976 mg/g) of free amino acids were observed.*

Keywords: *common bean, hybrid, variety, protein, amino acid, alanine, histidine, valine, threonine.*

Kirish. Olimlar tomonidan oddiy loviya o‘simligining xo‘jalik, morfo-fenologik, molekulyar-genetik va ozuqaviy qiymati yuqori bo‘lgan elita navlarini yaratishga qaratilgan zamonaviy uslublardan foydalanib ilmiy tadqiqotlar olib borilgan [2].

Oddiy loviya o‘simligining abiotik stresslarga ko‘proq bardoshli genotiplarining rivojlanishida ular ildizlarining tarqalish xususiyatining yuqori bo‘lishi ahamiyatli ekanligi 6 ta boshlang‘ich manbalar va 30 ta F_1 duragaylarda ildiz tarqalishida geterozis holatining paydo bo‘lishiga qaratilgan. Natijada ildizlarda geterozisning kuzatilmaganligi gen guruhlari o‘rtasidagi qarindoshlik darajasi, shuningdek, ba’zi o‘zaro epistatik ta’sirlar bilan izohlangan [5].

Shuningdek tepariy loviyasi issiq va quruq iqlim sharoitiga moslashgan. Bu turdan genetika va molekulyar biologiya sohasida to‘liq foydalanilmagan. So‘nggi yillarda tepariy loviyasi ustida genetik tadqiqotlar ko‘plab amalga oshirilmoqda [3, 4]. Vronska L. V., Demyd A. Ye. [7] olib borgan tadqiqotlarida oddiy loviya o‘simligi 5 xil oq urug‘li namunalarining aminokislota tarkibi xromotografiya usulida o‘rganilganda aspartat va glutamin kislota, glitsin, valin, tirozin, leysin va boshqa aminokislotalar aniqlangan. [1].

Tadqiqot obyekti va usuli. Tadqiqot obyekti sifatida oddiy loviya turiga mansub Beybi Lima, Vir, Belaya fasol, Kalipso krasnaya, Solnishko, Ravot navlari va F_1-F_2 duragaylaridan foydalanildi. Erkin aminokislotalarning feniltiokarbomail (FTK) bilan hosilasi (birikmasi) yuqori samarali suyuqlik xromatografiya (YuSSX) tahlili Steven, Cohen Daviel [6] usulida amalga oshirildi.

Tadqiqot natijalari. O‘rganilgan 6 ta loviya navlarida Belaya fasol navida boshqa navlarga nisbatan yuqori ko‘rsatkichlarni, ya’ni, asparagin kislota (1,047mg/g), glutamin (8,479 mg/g), treonin (1,399479 mg/g), alanin (7,96 mg/g), metionin (1,0077 mg/g), gistidin (6,38 mg/g), izoleysin (0,30 mg/g), leysin (0,664 mg/g), triptofan (0,669 mg/g), fenilalanin (0,456 mg/g), lizin (0,584 mg/g), Kalipso navida asparagin (1,787 mg/g), arginin (0,941 mg/g), prolin (1,24 mg/g), valin (0,80), Vir navida glutamin kislota (2,56 mg/g) va tirozin (2,021 mg/g), Ravot navida serin (1,294 mg/g), glitsin (0,760 mg/g) va sistein (2,08 mg/g) kabi erkin aminokislotlar miqdori yuqori ekanligi aniqlandi.

F_1 Kalipso krasnaya x Beybi Lima kombinatsiyasida glitsin (0,993861 mg/g), alanin (6,3931 mg/g), prolin (1,66 mg/g), valin (0,856 mg/g), leysin (0,468 mg/g), va F_1 Kalipso krasnaya x Solnishko kombinatsiyasida asparagin (1,689 mg/g), arginin (0,92 mg/g), gistidin (5,83 mg/g) erkin aminokislotalar miqdori boshqa duragay kombinatsiyalarga nisbatan yuqori bo‘lishi kuzatildi.

F_2 o‘simliklarida biokimyoviy tahlil natijalari shuni ko‘rsatdiki, erkin aminokislotalar miqdori Beybi Lima navi ishtirok etgan F_2 kombinatsiyalarida ham keyingi avlodlarda o‘z kuchini saqlab qolganini ko‘rishimiz mumkin. Jumladan, F_2 Beybi Lima x Kalipso krasnaya kombinatsiyasida asparagin kislota (0,989 mg/g), serin (1,18 mg/g), tirozin (1,5093 mg/g), lizin (0,411 mg/g), glitsin (1,134801 mg/g), asparagin (2,2755 mg/g), treonin (1,62 mg/g), arginin (0,910 mg/g), alanin (7,170269 mg/g), prolin (1,67 mg/g), fenilalanin (3,97 mg/g) erkin aminokislotlar miqdori boshqa F_2 o‘simliklariga nisbatan yuqori bo‘lishi qayd etildi.

Tadqiqot natijalari shuni ko‘rsatdiki, oddiy loviya navlari va F_1-F_2 o‘simliklari urug‘i tarkibidagi erkin aminokislotalar miqdori tahlil qilinganda, Beybi Lima navi bilan chatishtirib olingan F_1-F_2 o‘simlik kombinatsiyalarida

yuqori ko‘rsatkichlar aniqlandi hamda ushbu kombinatsiyalar genetik-seleksion tadqiqotlarda irsiy boyitilgan oila, tizma va navlar yaratishda qimmatli manba bo‘la oladi.

Foydalanilgan adabiyotlar:

1. Ángel Ramón Flores-Sosa, Elia Nora Aquino-Bolaños Variation in protein and amino acids content among landraces of common bean (*Phaseolus vulgaris* L.). // Emirates Journal of Food and Agriculture. 2020. - P. 750-760.
2. Pietro Sica, Francesco Scariolo, Aline Galvao Agronomic Performances and Seed Nutraceutical Properties to Exploit Neglected Genetic Resources of *Common Beans* Grown by Organic Farming in Two Contrasting Environments // Front. Plant Sci. 2021. Volume 12. -P. 1-24.
3. Rahman Sk.M., Aniszewski T. Ladybird beetles Adalia bipunctata L. Interaction with legume bean Phaseolus species is dependent on life needs // Malaysian Applied Biology. 2014. - P. 111-118.
4. Sergio Cruz, Juan Lobaton, Milan O. Urban Interspecific common bean population derived from *Phaseolus acutifolius* using a bridging genotype demonstrate useful adaptation to heat tolerance // Front. Plant Sci. 2023. Volume 14. - P. 1-15.
5. Sibila Grigolo, Rita Carolina de Melo, Heterosis for the root distribution trait in common bean // Agronomy journal, 2021. Volume 43, -P. 44-48.
6. Vronska L.V., Demyd A.Ye. Amino acid profile of *Phaseolus vulgaris* pods and dry extract prepared of them. // Farmasevtichniy chasopis. 2019. -P. 40-48.