

POREKLO NOVE SORTE HMELJA IZ BAČKOG PETROVCA ZA PRIMENU U INDUSTRIJI ZANATSKOG PIVA

Jelena M. Aleksić¹

0000-0003-3457-905X

Josef Patzak²

Igor Đuriš³

¹Univerzitet u Beogradu, Institut
za medicinska istraživanja,
Institut od nacionalnog značaja
za Republiku Srbiju,
Dr Subotića 4, POB 39,
11129 Beograd 102, Srbija

²Hop Research Institute Co.,
LTD, Zatec, Češka Republika

³Hopseeker doo Bački Petrovac,
Lenjinova 28/a,
21470 Bački Petrovac

DOI: 10.5937/PIVOS24014A

Sažetak:

U Srbiji je proizvodnja hmelja (*Humulus lupulus* L.) rapidno opala tokom poslednje 2 decenije (878t u 2001., <10t u 2021.), a oplemenjivanje i razvoj novih sorti hmelja prestalo je 2010. godine. Međutim, Srbija ne samo da se odlikuje klimom koja je optimalna za proizvodnju hmelja (između 35 i 55 stepena geografske širine), već poseduje i izuzetno važan genetički resurs koji je danas potpuno neiskorišćen: divlji hmelj, kao i poludivlji hmelj, nastao naturalizacijom komercijalnih sorti nekad gajenih na danas napuštenim hmeljarnicama. Divlji i poludivlji hmelj ne samo da imaju visok potencijal za primenu u industriji zanatskog piva (primer: američka pivara Sierra Nevada), već se zbog specifičnog hemijskog sastava šišarica nastalog u lokalnim klimatskim uslovima, mogu koristiti za proizvodnju ekskluzivnog piva jedinstvenog i prepoznatljivog ukusa (terroir), koje će biti cenjeno od strane konzumenata zanatskog piva prefinjenog ukusa. U Srbiji su danas registrovane 3 internacionalne i 3 domaće sorte hmelja. Naši ciljevi su da obnovimo kako oplemenjivanje tako i proizvodnju hmelja putem razvoja nove sorte aromatičnog hmelja koja je pogodna za gajenje na našem području. U okviru projekta finansiranog od strane Fonda za inovacionu delatnost Republike Srbije (Hopseeker, ID projekta 51815), klonski je umnoženo 18 divljih i poludivljih genotipova hmelja iz Vojvodine sakupljenih iz prirode, procenjen je hemijski sastav njihovih šišarica u odnosu na relevantna jedinjenja koja određuju kvalitet i ekskluzivnost piva, šišarice su iskorišćene za proizvodnju piva u 12 lokalnih zanatskih pivara, a proizvedeno pivo ocenjeno je kako od strane profesionalaca tako i od strane potrošača. Na ovaj način su odabrane biljke hmelja (genotipovi) čije šišarice su korišćene za proizvodnju piva najboljih karakteristika, i podnet je zahtev Ministarstvu poljoprivrede, šumarstva i vodoprivrede Republike Srbije za njihovu registraciju kao nove sorte hmelja u našoj zemlji. Genetičke analize svih 18 genotipova hmelja korišćenih u projektu primenom jedarnih mikrosatelita i njihovo poređenje sa oko 600 genotipova komercijalnih sorti i divljih hmeljeva pokazale su da se radi isključivo o poludivljim hmeljevima koji su nastali hibridizacijom sa komercijalnim sortama i koji su usled toga stekli nove osobine. Determinisani jedinstveni genetički profili nove sorte hmelja koja će imati zaštićenu oznaku porekla i koja će biti registrovana u Srbiji, poslužiće za zaštitu prava proizvođača kao i žiga.

Kontakti:

¹jelena.aleksic@imi.bg.ac.rs

¹aleksic_jelena@yahoo.com.au

²patzak@chizatec.cz

³idjuris@yahoo.com

Ključne reči: divlji i poludivlji aromatični hmelj, lokalno adaptirani genotipovi, zapostavljen genofond hmelja, zanatsko pivo, intelektualna svojina

Zahvalnica: Projekat finansira Fond za inovacionu delatnost iz Pretpristupnih fondova Evropske unije i budžeta Republike Srbije sa razdela Ministarstva prosvete, nauke i tehnološkog razvoja, naziv projekta Hopseeker, broj projekta 51815.



AN ORIGIN OF THE NEW AROMA HOP VARIETY FROM BAČKI PETROVAC FOR CRAFT BREWERIES

Jelena M. Aleksić¹

0000-0003-3457-905X

Josef Patzak²

Igor Đuriš³

¹University of Belgrade, Institute for Medical Research, National Institute of Republic of Serbia, Dr Subotića 4, POB 39, 11129 Beograd 102, Srbija.

²Hop Research Institute Co., LTD, Zatec, Češka Republika.

³Hopseeker doo Bački Petrovac, Lenjinova 28/a, 21470 Bački Petrovac

DOI: 10.5937/PIVOS24014A

Summary:

In Serbia, the production of hops (*Humulus lupulus* L.) declined rapidly during the last 2 decades (878t in 2001, <10t in 2021), and breeding and development of new hop varieties stopped in 2010. However, Serbia is not only characterized by a climate that is optimal for the production of hops (between 35 and 55 degrees latitude), but also possesses an exceptionally important genetic resource that is completely unused today: wild hops, as well as semi-wild hops, created by the naturalization of commercial varieties once grown on today's abandoned hop fields. Wild and semi-wild hops not only have a high potential for use in the craft beer industry (example: the American brewery Sierra Nevada), but due to the specific chemical composition of cones formed in local climatic conditions, they can be used for the production of exclusive beer with a unique and recognizable taste (terroir), which will be appreciated by consumers of craft beer with a refined taste. Today, 3 international and 3 domestic varieties of hops are registered in Serbia. Our goals are to renew both breeding and production of hops by developing a new variety of aromatic hops that is suitable for cultivation in our area. Within the project financed by the Serbian Innovation Fund (Hopseeker, project ID 51815), 18 wild and semi-wild genotypes of hops from Vojvodina were collected from nature and clonally propagated, the chemical composition of their cones was evaluated in relation to the relevant compounds that determine the quality and exclusivity of beer, cones were used for the production of beer in 12 local craft breweries, the produced beer was evaluated by both professionals and consumers. In this way, hop plants (genotypes) whose cones were used for the production of beer with the best characteristics were selected, and a request was submitted to the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia for their registration as a new hop variety in our country. Genetic analyzes of all 18 hop genotypes used in the project with nuclear microsatellites and their comparison with about 600 genotypes of commercial varieties and wild hops showed that they are exclusively semi-wild hops that were created by hybridization with commercial varieties and which, as a result, acquired new properties. The determined unique genetic profiles of the new variety of hops, which will have a protected designation of origin and which will be registered in Serbia, will serve to protect the breeder's rights as well as trademark.

Correspondences:

¹jelena.aleksic@imi.bg.ac.rs

¹aleksic_jelena@yahoo.com.au

²patzak@chizatec.cz

³idjuris@yahoo.com

Keywords: wild and semi-wild aromatic hops, locally adapted genotypes, neglected hop gene pool, craft beers, intellectual property

Acknowledgment: The project is financed by the Innovation Fund from the European Union Pre-Accession Assistance and from the budget of the Republic of Serbia, the line of Ministry of Education, Science and Technological Development, project name: Hopseeker, project ID 51815.