PRILAGODBA VINOGRADARSKO VINARSKE PROIZVODNJE KLIMATSKIM PROMJENAMA

tip operacije 16.1.2.

Sažetak za praktičare

WINE-CLIMA-ADAPT – Prilagodba vinogradarsko-vinarske proizvodnje klimatskim promjenama

trajanje projekta
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EUROPSKI POLJOPRIVREDNI FOND ZA RURALNI RAZVOJ
EUROPA ULAŽE U RURALNA PODRUČJA

SAŽETAK

Prilagodba vinogradarsko vinarske proizvodnje klimatskim promjenama

Vinogradarstvo je poljoprivredna djelatnost pod izravnim utjecajem vremenskih i klimatskih prilika pa je vrlo osjetljiva na klimatske promjene. Glavni cilj kroz provedbu projekta bio je na reprezentativnim lokacijama, na kojima se uzgaja vinova loza, ispitati potencijal promjene trenutka primjene ampelotehničkih zahvata s ciljem prilagođavanja vinogradarsko-vinarske proizvodnje klimatskim promjenama. Primjena optimalne gnojidbe i rezidbe trebala bi značajno utjecati na rodnost, te na kvalitativni sastav grožđa, mošta i vina. Također, vinogradarima i vinarima trebala bi osigurati snižavanje i optimizaciju troškova proizvodnje. Ukupnom obradom i analizom svih dobivenih rezultata biti će moguće proizvođačima dati preporuku kako na istraživanjem obuhvaćenom području mogu bez dodatnih ulaganja prilagoditi višegodišnju proizvodnju klimatskim promjenama. Isto tako cilj je bio i istražiti utjecaj vremenskih i klimatskih uvjeta na vinovu lozu i kemijski sastav grožđa te koji su parametri u vinogradarskoj proizvodnji već zahvaćeni klimatskim promjenama. Putem praćenja četiri pokusna kultivara vinove loze: Graševina, Kleščec i Žlahtina analiziran je utjecaj vremenskih uvjeta na nastupe pojedinih fenofaza (pupanje, cvatnja, šara i berba) vinove loze i kakvoću grožđa. Odabrano je 9 pokusnih vinograda smještenih unutar granica 6 vinogradarskih podregija Hrvatske, a istraživanje je provedeno tijekom dvije uzastopne proizvodne vinske godine (2021. i 2022.). Na svim prikupljenim uzorcima grožđa analizirane su pojedine uvometrijske karakteristike navedenih kultivara. Sa 7 meteoroloških postaja DHMZ-a korišteni su i obrađeni podaci minimalne, maksimalne i srednje dnevne temperature zraka za izračune srednje temperature zraka u vegetacijskom razdoblju (TGS), Winklerovog indeksa (engl. *Growing degree-days*; GDD), Huglinovog indeksa (HI) i indeksa hladnih noći (CI). Određeni su trendovi agroklimatskih indeksa za razdoblje 1961.–2018. Prikazani rezultati povećanja agroklimatskih indeksa pokazali su nužnost revidiranja svih vinogradarskih zona u Hrvatskoj što je već potaknulo daljnja istraživanja za izradu nove regionalizacije vinogradarskih područja Hrvatske. U obje godini provedbe projekta odrađene su fizikalno kemijske analize te je određen aromatski profil vina. Provedena su senzorna ocjenjivanja te je napravljena statistička analiza. Sve skupa trebalo bi omogućiti povećanje konkurentnosti proizvođača, kako na domaćem tako i na inozemnom tržištu.

Cjelokupno Izvješće o provedenom istraživanju dostupno je na https://www.hapih.hr/projekti/wine-clima-adapt/.

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EXTENDED SUMMARY

Adaptation of viticultural and wine production to climate change

Viticulture is an agricultural activity directly influenced by weather and climate conditions, and is therefore very sensitive to climate change. The objective of research was to examine the potential of changing the moment of application of ampelotechnique measures in representative locations, where vines are grown, with the aim of adapting viticulture and wine production to climate changes. The application of optimal fertilization and pruning should have a significant effect on fertility, as well as on the qualitative composition of grapes, must and wine. It should also ensure the reduction and optimization of production costs for winegrowers and winemakers. Through the overall processing and analysis of all the obtained results, it will be possible to give recommendations to the producers on how they can adjust multi-year production to climate change in the area covered by the research without additional investments. The objective was also to investigate the influence of weather and climate conditions on the vines and the chemical composition of grapes, and which parameters in viticulture production are already affected by climate change. The influence of weather conditions on the occurrence of individual phenophases (budding, flowering, pattern and harvest) of grapevine and grape quality was analysed by monitoring four experimental grape cultivars: Graševina, Kleščec and Žlahtina. 9 experimental vineyards located within the borders of 6 wine-growing sub-regions of Croatia were selected, and the research was conducted during two consecutive wine production years (2021 and 2022). The main criterion for selecting the location of the research, apart from the assortment in the vineyard, was that the locations are situated as close as possible to the meteorological station from which the data for determining agroclimatic indices were processed. The uvometric characteristics of these cultivars were analysed. Basic chemical analyses were performed on fresh grape samples (sugar content, total acids and pH value). Minimum, maximum and mean daily air temperature data were used and processed from 7 DHMZ meteorological stations for calculations of mean air temperature in the vegetation period (TGS), Winkler index (Growing degree-days; GDD), Huglin index (HI) and the Cold Night Index (CI). Trends in agroclimatic indices for the period 1961–2018 have been determined. The presented results of the increase in agroclimatic indices have shown the need to revise all wine-growing zones in Croatia, which has already prompted further research to develop a new regionalization of Croatian wine-growing areas. Due to the increase in air temperature, continental Croatia has become suitable for planting

wine cultivars that need more heat, and in the future there will be the possibility of raising vineyards of early grape cultivars in mountainous Croatia. In both years of the implementation of the project, physical and chemical analyzes were performed and the aromatic profile of the wine was determined. Sensory evaluations were carried out and statistical analysis was made. All together, it should make it possible to increase the competitiveness of producers, both on the domestic and foreign markets.

The entire Report on the conducted research is available at https://www.hapih.hr/projekti/wine-clima-adapt/.