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Assessment of environment effect on yield component in barley (*Hordeum vulgare* L.) genotypes under rainfed conditions

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Purpose. This research was carried out to assess barley genotypes yield and quality parameters under various environmental conditions. **Methods.** The experiments were set up with 25 barley genotypes in a completely randomized blocks design with four replications at four locations in the 2018–2019 cycles in the Trakia region, Turkey. Data on grain yield, plant height, days of heading, 1000-kernel weight, test weight, protein ratio and grain uniformity were investigated. **Results.** The combined ANOVA revealed significant differences ($p<0.01$) among genotypes and environments for all parameters investigated. In the study genotype G4 (8514 kg ha^{-1}) had a higher yield followed by G9 (8369 kg ha^{-1}). The highest thousand kernel weight was 52.0 g in G14 and the test weight was 75.1 kg in genotype G5. There was a significant difference among genotypes for protein ratio and genotype G22 had a higher protein ratio, followed by genotypes G23 and G24. The grain uniformity in barley is an essential parameter and G14 had a higher ratio of grain uniformity. Correlation analyses showed that a negative correlation was determined between grain yield with days of heading (r=-0.506**), plant height (r=-0.583**), and protein ratio (r=-0.542**). 1000-kernel weight and test weight were significantly positively correlated (r=0.708**). Grain uniformity had a positive correlation with 1000-kernel weight (r=0.898**) and test weight (r=0.539**). Protein ratio was positively associated with plant height (r=0.692**). According to stability analysis genotypes G9, G3, G15, G2, and G17 were adaptable to less fertile environmental conditions. It was determined that G10 and G16 were well adaptable to all environmental conditions and also were ideal in terms of higher-yielding ability and stability. **Conclusions.** While genotype G9 has high yield potential, G10 and G16 have high adaptability to different environmental conditions. The environmental effect was found to be very important according to the parameters examined. Early and short genotypes have higher yield potential. Environment E4 was the ideal environment because located close to the first concentric circle in the environment-focused biplot. Therefore, it should be regarded as the most suitable to select widely adapted genotypes

Keywords: *barley; genotypes; yield component; environment effect.*

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Diversity analysis amongst *Juglans regia* L. genotypes using molecular markers

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Purpose. On the basis of a comprehensive study of the genetic diversity among 37 genotypes of Persian walnut by using Molecular marker. **Methods.** Field, Laborartry, Isolation, Gelelectrophoresis, software and mathematical statstics. **Results.** The results of this study shows that 22 ISSR produced amplification out of 30 primers. Amplification of Genomic DNA from 37 genotypes using 22 ISSR generated a total of 849 scorable bands. The similarity coefficient values ranged from 0.583 to 0.962.Dendrogram was generated based on the similarity matrix data applying unweighted pair group method with arithematic averages (UPGMA). Cluster analysis was done using SAHN module of NTSYS-pc computer programme 2.02h .The tested 37 genotypes were divided into two cluster i.e 'E' and 'F'. Cluster E was further subdivided into E1 and E2. The cluster E1 and E2 contained 28 and 8 genotypes whereas cluster F contained only 1 genotype. **Conclusion.** The ISSR markers

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