Effects of Some Herbicides on Upper and Subsoil Development of *Asphodelus aestivus* Brot. According to Different Dose and Seasonal Applications

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**Abstract:** Undesirable variations occurred in vegetation as the pasture is not manipulated in the lights of management principles. At the beginning of these, there are increases in the proportion of unwanted and toxic plant species. Amongst, *Asphodelus aestivus* Brot. is an important species and spreads in Mediterranean countries. This study was conducted aiming to increase the yield and quality of pasture and animal production subject to control this weed because it covers a huge area of pasture and it is also toxic to animals. Research has been carried out in Gerlençe village of Biga District in Çanakkale, Turkey for a duration of 3 years from November 2014 to April 2015 and November 2017 to April 2018. Average number of *A. aestivus* per plot showed a variation from 20 to 30 plants/m². Research was established in three replications according to randomized complete block design. Research factors were consisted with five herbicides, their two different (applied and double) doses and two different seasonal (fall and spring) applications. Each plot was designed using 3 m² of area consisted of a total number of 60 experimental plots (5 herbicides x 2 doses x 2 seasons x 3 replications). Herbicide applications were done in autumn and early spring in November 15, 2014 - April 15, 2015 when newly emerged shoots of *A. aestivus* were starting to be appeared. Chlorosulfuron, glyphosate, dicamba+triasulphurine, methylsulphuron methyl+lodosulfuron methyl and tribenuron methyl+thifensulfuron methyl were used as active ingredients. Upper and sub soil developments of *A. aestivus* were examined. Data were analyzed using JMP 11 (SW) statistical package program. The number of plants significantly decreased from 30 plants/m² to 1-20 plants/m² depending on applied herbicides. Average plant height, leaf number, leaf width, leaf length and leaf weights decreased by 80-85%. Amongst the subsoil characteristics, average tuber weight per plant and average single tuber weight were recorded as 90-95%, tuber number and tuber length were 80-90% and a decrease of 68% was found in the average tuber diameter. Usage of different active ingredient herbicides along with their different doses in spring and autumn for the control of *A. aestivus* have weakened considerably the upper and subsoil development of plant. As a result, the most suitable active ingredients to be used to control this weed plant are glyphosate, methylsulfuron+lodosulfuron and tribenuron, the most suitable dose is two times of applied dose, and the most suitable season is spring.

**Keywords:** *Asphodelus aestivus*, herbicide, dose, season, chemical control