The Effect of saline stress on vegetative growth characteristics of five potato varieties (*solanum tuberosum*, L.) Cultivated under the conditions of Basrah region, Iraq

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***Abstract* :** A field experiment was conducted during autumn 2019-2020 in al-Faris agricultural testing station located in Zubair district, approximately 25 km southwest of Basra province in a sandy loamy soil, with the aim of assessing the response of a five varieties of potato plant (V1 , V2 , V3 , V4 , V5) for different levels of saline stress (S1 =1.5, S2 =3.5, S3 = 5.5, S4 = 7.5) d S/ m² The study was done as a factorial experiment based on randomized complete block design(R.C.B.D) including 60 experimental units resulting from(5 * 4 * 3) . The results show that the variety V1 , V2 gave significant effect in most of the studied traits such as steam diameter (10.25 and 10.14 cm), the number of leaves (38.22 and 38.00 leaf), rates of leaf area as follows (0.62 and 0.56 $m^2.plant^{-1}$) and the dry weight (180.15 and 179.60 g) respectively. $Plant^{-1}$, While salinity levels were clearly affected in all the qualities studied, it exceeded the S1 gave the high rates for the qualities studied and S3 , S4 gave the lowest rates for the qualities studied, and the interaction (V1* S1) showed significant effect in most characterizes , V1 has proven greater salinity tolerance than other varieties it gives significant rates than the rest of the cultivars below the S4 . And gives the highest rate for each steam diameter (mm), the number of stems, the number of leaves, the leaf area $^2.plant^{-1}$ and the dry weight of the plant (g).

Keywords: Potato, salt stress, varieties, vegetative characteristics

The potato *(Solanum tuberosum*, L.) is a variety of the Solanaceae family is one of the most important strategic plants in the world, its economic importance is for being a direct human food where it comes second after grain crops in terms of importance, and the plant occupies the fourth most cultivated crops after wheat, rice and corn (Akkale 2010) . The potato is usually grown in Iraq in two seasons, autumn season and the Spring season, in order to provide the appropriate environmental conditions for the cultivation and growth of the plant well (Kamel *et al*., 2016), estimated area cultivated in Iraq about (42,000 hectares) and an tag (580,000 tons) F.A.O.(2012), the crop was introduced into Iraq in the late 19th century and the demand of consumption and cultivation increased year by year (Munns 2002). The potato is one of the most widely used vegetable crops due to its nutritional importance, as it is characterized by a high percentage of nutrients, for example it contains a starch ranging from (12.4 to 17.8) % and protein ranging from (6.25 to 15) % in addition to containing many other nutrients such as vitamins, amino acids and mineral elements, which vary in quantity due to different types of cultivated species (Munns 2002). However, domestic production is low compared with the international and some Arab countries, which have an environment similar to that of