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- Document Title** : Comparative autecological study on *Ricinus communis* L. as one of the economical plants in Saudi Arabia
أحد النباتات الاقتصادية النامية (*Ricinus communis* L.) دراسة مقارنة على البيئة الذاتية لنبات الخروع في المملكة العربية السعودية
- Document Language** : Arabic
- Abstract** : *Ricinus communis* L. (Euphorbiaceae) one of the economical plants growing in kingdom of Saudi Arabia . Ricinus oil which extracted from the seeds is used as laxative and in other medicinal purposes. This work aimed to study comparative autecological of Ricinus planty grow in Al-Taif (Makkah AL-Mukarramah) , Bani-kabir and in The-Ain (Al-Baha). This study included some soil factors (water content and the organic content , pH value, electrical conductivity (EC) and some minerals). The water content, the organic matter content and some minerals of the plant leaves were also studied . The study aimed also at studying the phenolics of the plant leaves that resist the environmental stress e.g freezing in winter and drought in summer and have medicinal significance. The soils were sandy loamy with relatively low content of water and organic matter . The pH values of the soils were 6.6,6.8,7.2 and the electrical conductivities (EC) were 1.37,1.33,1.63 millimohs/ centimeter for AL-Taif, Bani-kabir and The-Ain regions respectively. The calcium percentage was higher than magnesium whereas sodium was higer than calcium in The-Ain region. Iron, manganese and zink were found in different percentages in the studied regions .The soils of the studied regions were poor in nitrogen and phosphurus. Chlorine in The-Ain was lower than in the other two regions. Some bacteria and fungi were isolated from the rhizosphere. Some insects around the plant were identified. The plant leaves growing in The-Ain contained the highest water percentage. The organic matter contents of the plant leaves were higher than the organic matter contents of the solis of the three regions. The leaves of Ricinus growing in AL-Taif and Bin-kabir contained higher percentages of magnesium, calcium, potassium, sodium, iron and nitrogen than of the leaves of Ricinus growing in The-Ain whereas the leaves of this region contain low percentage of chlorine. The isolated flavonoids were classified according to their chemical structure to three groups ; O-flavonols included quercetin, rutin, quercetin-3-glucoside, quercetin-3-galactoside and kaempferol; O-flavones included, apigenin (free aglycon); C-flavones included, vitexin. O-flavonols were the predominant. Apigenin was not accompanied by its O-glucosides but its C-glucoside, vitexin. The results indicated that the plant leaves contained both the condensed and the hydrolysable tannins. The flavan derivatives, -(-)epicatechin and (±)-catechin and the following phenolic acids were detected: 2,5 dihydroxybenzoic acid; 3,4,5 trihydroxybenzoic acid and chlorogenic acid. The presence of the phenolic compounds and their medicinal importance were discussed.
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