

## the phenotypic diversity study of some Iraqi rare date palm cultivars, *Phoenix dactylifera L.*

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### SUMMARY

This study was conducted on some of the rare date palm cultivars growing in Basrah Governorate, in order to identify its morphological characteristics. Morphological characteristics were studied, including (37) vegetative traits and (38) floral characteristics. The results were analyzed using the principle component analysis and cluster analysis to identify variance and similarity between studied cultivars. The results of cluster analysis have shown that there are clear differences between cultivars. The studied cultivars were divided into two main groups in vegetative and floral characteristics, with the lowest distance between the cultivars (Khasab, Ashresi, Khalas, Sukkari, and Asabe Alaros) which was approximately (0.997) close to each other by vegetative characteristics. The lowest distance between the cultivars was between the two cultivars (Ibrahimi and Shukker) and approximately (0.988%), which were closely related to each other by floral characteristics. The principle component analysis showed that there are a variety of phenotypes that can be used to distinguish between the different cultivars of date palm, the most important are: The length and width of the leaf, the length of the blade leaf, length and width and number of the pinnate because these qualities represent 19.20% of the variation between varieties. In addition to weight and length of spathe and width and weight of the inflorescence and length and weight of strand, number and weight of the flowers, length and width of flower holder it was representing 30.697% of the variance.

Keywords: date palm, rare cultivars, vegetative and floral characteristics, principle components analysis, cluster analysis.