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| **استمارة التسجيل في المؤتمر الثالث للبحوث الطلابية****(البحوث الطلابية وتحديات التنمية)****5 مايو 2019** |
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|  **Evaluation of the Performance of an Advanced Continuous Irrigation System** |
| **▪اسماء المشرفين على الموضوع/المشروعالبحثى:** |  |  |
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**Evaluation of the Performance of an Advanced Continuous Irrigation System**

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**Freshwater scarcity and the energy crisis are major challenges to field irrigation, especially in the face of climate change that threatens agricultural production. In recent years, this has led to the creation of a continuous irrigation method known as the "Moistube". It is assumed to depend on the extension of the plant with water on the physiological state of the plant (thirst condition), which leads to the saving of irrigation water and energy used. The aim of this research was to evaluate the performance of this tube on three axes. The first axis is to determine the most appropriate position of the tube (horizontal or vertical) under the surface of the soil to achieve the best distribution of moisture in the root area of ​​the plant. The second axis is to test the range of operating pressure in which this system can operate efficiently. The third was to test the extent of the concentration of the fertilized fertilizers and saline water after passing through irrigation water through this tube, under laboratory conditions. Obtained results were based on the two points of the common GR emitter used in the region, as well as the controlled flooding method, as control coefficients. The obtained results indicated that the best position of the tube obtained from a desired moisture distribution covering the root spread zone was the horizontal position. With regard to the performance of the pipe under different operating pressures, it was found that it is possible to obtain the good moisture distribution under pressure of zero operation, which means that there is a chance to save a large amount of energy consumed in the operation of irrigation. It was also found that there was a positive relationship between the discharge of the tube and some operating pressures in the range from 0.1 - 0.6 bar and it was possible to obtain the mathematical equation that represents that relationship. It was also found that there was a possibility of using salt water at the limits of 1000-2000 ppm without a blockage in this tube.**

**Keywords: Water and energyscarcity, Moistube, irrigation water saving.**