

- Document Type** : Thesis
- Document Title** : *Physiological studies on Spiroplasma citri the causal organism of stubborn Disease of Citrus in Makkah Al-Mukarrama Region*  
دراسات فسيولوجية على الاسبيرو بلازما ستيري الكائن المسبب للمرض المزمن في الموالح في منطقة مكة المكرمة بالمملكة العربية السعودية
- Document Language** : Arabic
- Abstract** : The aim of this present study is to recognize the etiology of the phenomenon observed on a large number of lime ( C-citrus aurantifolia Swingle) trees growing in many locations representing Makkah Al-Mukarramah region (Jeddah, Hada-Alsham and Dahttah). It is suspected that Spiroplasma citri; the causal organism of citrus stubborn disease, is responsible for this phenomenon. Isolation trials revealed the presence of two different isolates of citri classified according to differences in symptoms, expression and physiological characters. Spiroplasma was detected according to growth on specific medium (C3GM), phase contrast microscopy, presence of wall-less prokaryotic; motile and four turn helices units. Typical fried egg shape colonies obtained on C3GM solid medium confirmed the presence of S. citri. In addition, morphology and division were studied using transmission electron microscope. Physiological studies were carried out on the two different Spiroplasma isolates. These studies included the effect of three different growth media namely C3GM, F-2 and S3, the effect of seven incubation temperature degrees on growth to determine the optimum temperature of each isolate and the effect of direct exposure to nine different temperature degrees on the viability of the two isolates. The study was also expanded to test the effect of ethanol at five different concentrations on growth of the two Spiroplasma isolates. Sensitivity of the two isolates to eight different antibiotics was studied, fungicides, and four insecticides were applied against the two isolates to determine which was effective on this micro-organism. The two isolates of S. citri have the ability to produce Toxin(s) in culture filtrate which affected broad bean leaf pieces and the percentage of lettuce seeds germination. These toxin(s) are accountable for symptoms expression characterizing this disease.
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