GENETIC STUDIES ON SOME BACTERIAL HEAVY METAL RESISTANCE GENES

By

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ABSTRACT

Amr Tag El-Din Mahmoud Sa'eb, Genetic Studies on Some Bacterial Heavy Metal Resistance Genes. Unpublished Master of Science thesis . Genetics Department, Faculty of Agriculture, Ain Shams University, 2000.

Two hundred forty nine *Pseudomonas* isolates were collected from different geographical sites in Egypt. These isolates were examined for resistance against ten heavy metals and five antibiotics. Plasmid profile were studied for most of tested isolates. For further studies ten representative strains were chosen. They were resistant to seven to nine heavy metals and four to five antibiotics and bearing both small and large conjugative plasmids. They have stable, broad host range plasmids. Silver, nickel, cadmium, mercury, cobalt, chromium, copper, zinc, chloramphenicol, kanamycin, tetracycline, ampcillin and streptomycin resistance genes were plasmid borne, while lead and iron resistance genes were chromosome mediated.

Key words: *Pseudomonas*; heavy metals; antibiotics; resistance plasmid; curing; conjugation; broad host range; genetic stability.

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