

**STUDIES ON THE FACTORS AFFECTING DRAINAGE
EFFICIENCY AND SEDIMENTATION INSIDE DRAIN
PIPES UNDER EGYPTIAN CONDITIONS**

BY

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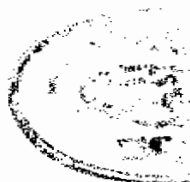
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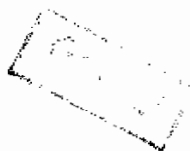
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Abstract

Mohamed Hussein El-Sayed Salem. Studies on the factors affecting drainage efficiency and sedimentation inside drain pipes under Egyptian conditions. Unpublished Doctor of philosophy of science, university of Ain Shams, Faculty of Agriculture, Department of soils science, 1995.

The present work was carried out in upper and lower Egypt, East Delta, West of Behira to study the effect of physical and chemical properties and clogging problems on drainage efficiency and sedimentation inside drain pipes. In addition, the work included the study of quality control for drainage systems in Abu El-Akhdar area, Sharkia Governorate.

The obtained results revealed that, salt content in the investigated soils is showed that most of the studied sites are non-saline and non-sodic. Also, obtained results showed that the use of subsurface drainage removed salt from soil profile, reduced SAR and ESP values. Also, EC values can be used as important parameters in evaluating the performance of drainage system over

Concerning, the thickness of sediments inside drain pipes, it increased by passing the period of land drainage with significant differences between PVC cement drainage pipes. In addition, even in clay soils, siltation occupied at 40% and 30% of the cross sectional areas of cement and PVC pipes, respectively.

On the other hand, the potentially of ochre formation in the investigated was somewhat low and may impact on the clogging of drain pipes in the run. According to the obtained results, many other factors such as size of method and conditions of installation, type of drain pipes, some dislocations laterals of the drainage and thickness and graded gravel envelope around the drain during installation affected the sedimentation inside drain pipes and



sequently, drainage efficiency. The rodding method was found simple enough used for checking the newly installed drains in Egypt.

words:

or Egypt - Lower Egypt - East Delta - Middle Delta - West Delta - Abu-El-
der - Soil physical properties - Soil chemical properties - Tile drainage- PVC
is - Cement drains- Drainage efficiency - Sedimentation - Other formation -
ility control - Rod apparatus.



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