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Author: Mohamed Yosry Ahmed Farg Bondok.	Degree : Doctor of philosophy in Agricultural Sciences(Agriculture Eng..)	Date : 2006
Dissertation Title IMPROVING THE EFFICIENCY AND MANAGEMENT OF SOME MODERN IRRIGATION SYSTEMS FOR SOME ORCHARD CROPS USING COMPUTER		
Dissertation Abstract This experimental work was conducted during 2001 and 2002 years to study and to evaluate three modern irrigation systems in order to improve efficiencies and management of system by using computer program. The experimental work and data collecting irrigation practice and operational condition were carried out for three sites. 1- NOUBARIA AL-BUSTAN. 2-WEST NOUBARIA. 3-MIDDLE- DELTA. Computer program: The research developed a tool to help owners of the newly reclaimed and old area in Egypt to evaluate; improving efficiency and management their modern irrigation systems. To achieve this goal, we developed computer program, which could be used for evaluating and improving modern irrigation systems * Improving sprinkler irrigation system of efficiency and management: 1-Increasing field water use efficiency from 1.8 to 3.2 kg/m ³ by using pan evaporation management program, in case study of pea crop. 2- Decrease duration of irrigation through growing season from 0.5, 0.75,0.75, and 0.5 to 0.4, 0.5, 0.3, and 0.7 h/day, in case study of pea. **Improving center pivot irrigation system of efficiency and management : 1-Increasing field water use efficiency from 3.4 to 4.1 kg/m ³ by using pan evaporation management program, in case study of potatoes. 2-Decrease duration of irrigation through growing season from 12.2, 14.8, 12.5,11.3 and 12.2 to 11.3, 13.1, 11.3, 9.9 and 10.8 hr/day, except the first month which increase from 10 to14.1 hr/day, in case study of potatoes crop. *** Improving drip irrigation system of efficiency and management: 1 -Increasing field water use efficiency from 3.6 to 4.1 kg/m ³ by using pan evaporation management program, in case study of grape and 2-Decrease duration of irrigation through growing season from 1, 2, 3, 3.5, 3 and 1.5 to 0.28, 0.73, 0.9, 0.9 and 0.6 hr/day, in case study of grape.		
Keywords: Computer- Aided – Irrigation efficiency – Irrigation Scheduling.		

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