

DEDICATION

To my parents,
to my brothers and sister,
to my friends.

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Abstract

This study was conducted to outline the different operation conditions and aspects related to the irrigation practices and irrigation management in Eljuomoeia scheme during seasons (2008-2009), (2009-2010). A questionnaire model was designed, hundred farmers samples randomly were selected. The collected data was analyzed using statistical package for social sciences (SPSS). The questionnaire revealed the irrigation problems which can be summarized in the following: Irrigation water shortage during a part of a season, low water level while necessitates using the small lift pumps, increasing in total cost percentage for irrigation during the season ranges between (71.8% - 91.1%), lack of a clear contract to organized the relation between the farmer and the scheme body. Determination the overall efficiency was carried out by estimation. Pumping efficiency, conveyance, distribution and application efficiency. Computer programme (Crop.Wat) was use to calculate crop water requirements for Tomato, Okra and Abu sabein to determine the peak water requirement during the season. This was compared to the net water supply of the scheme. The study showed that irrigation efficiency are Pumping efficiency 76.5%, conveyance 79.6%, water distribution 73.88% and water application efficiency 57.14% to give an overall poor irrigation efficiency 25.6%. In addition to that there is water irrigation deficit that extends for six months. Maximum irrigation water deficit reaches (50%-53%) during October and November. On the other hand there is surplus irrigation water capacity at the beginning of the season (150%-264%). The study recommendations can be summarized as: The out of service pump should be put to service to compensate for the shortage of water at the season peak, the intensification of cropping pattern during the surplus period

helps in making use of surplus water. The future rehabilitation and maintenance programmes for canals and water control structures can be made under direct technical supervision

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Arabic abstract

أجريت هذه الدراسة بمشروع الجموعية الزراعي التعاوني لدراسة الظروف التشغيلية و مشاكل الري بالمشروع خلال الموسمين (2008-2009)،(2009-2010). و قد تم تصميم إستبيان وتوزيع (100) إستمارة عشوائيا تم تحليل بياناتها بواسطة برنامج الحزم الإحصائية للعلوم الإجتماعية (SPSS) و قد أطر الإستبيان لمشاكل الري المجلدة فى شح مياه الري فى جزء من الموسم الزراعى و الحاجة الماسة ل إستخدام المضخات الرافعة الصغيرة 'الزيادة الحادة فى نسبة التكلفة الكلية لمياه الري خلال الموسم و التى تتراوح بين (71.8%-91.1%)' غياب صيغة عقد واضحة تنظم العلاقة بين المزارع وإدارة المشروع كما أجريت القياسات اللازمة لتقدير الكفاءة الكلية لمنظومة الري وذلك بتقدير كل من كفاء آت الضخ 'الذقل' توزيع الماء وكفاءة إضافة مياه الري. كفاءة إستخدام برنامج (CropWat) لحساب الإحتياجات المائية للحصول الاساسية بالمشروع (ابو سبعين 'البامية' الطماطم) ومقارنتها مع صافي الإمداد المائى لتحديد ذروة الإحتياج المائى خلال الموسم الزراعى. أثبتت الدراسة أن كفاءة الضخ بلغت 76.5%، كفاءة الذقل 79.6%، كفاءة توزيع مياه الري 73.88%، كفاءة إضافة مياه الري 57.14% وكانت الكفاءة الكلية للرى 25.6%. يضاف الى ذلك وجود عجز مائى يمتد لما يقارب ستة أشهر فى السنة و قد بلغت أعلى نسبة عجز لمياه الري (50%-53%) فى شهرى أكتوبر ونوفمبر كما يوجد فائض فى مياه الري فى بداية الموسم قدره (150%-264%) و قد خلصت الدراسة الى التوصية باعادة ادخال المضخة خارج الخدمة الي الخدمة لسد العجز المائى 'تكثيف النمط الزراعي فى موسم الفائض للإستفادة من فائض المياه فى هذه الفترة' كما اوصت الدراسة بضرورة ان تكون صيانة وتأهيل قنوات الري ومنشآت التحكم المستقبليّة تحت إشراف فنى مباشر.

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