An Economic Analysis of Crops Production using A Trickle Irrigation System

Rising water scarcity in many parts over the world especially in Arab countries needs increased water productivity to support the current agricultural production levels. Trickle irrigation system introduced relatively recently in Arab countries such as Egypt has proved to save substantial water and boost crops' productivity. This study performs the economic analysis on seven crops and nine vegetables using the trickle irrigation system in a hypothetical field in Egypt based on the physical and economic conditions. Economic analysis measures of benefit-cost ratio (B/C) and net return values (B − C) were estimated. The crops considered in the study were: sugar beet, lupine, lentil, chickpea, soybean, sesame, and peanuts. Besides, the concerning vegetables were tomato, onion, garlic, peas, cabbage, eggplant, watermelon, cantaloupe, and cowpea. The study presented some suitable growing rotations among the crops and vegetables. This study results showed that higher values of net returns were attained for most crop rotations. Further, most of B/C for crop rotations have been ranged between 1.5 and up to more than 2.0. These estimated results corroborated that investment in trickle irrigation is economically highly viable for arable lands such as Arab countries.