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Analysis of Production-Water-Salinity of Index Crops in
(Case (Study: Golestan Area)
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Abstract
One method to investigate the advantages of irrigation in cultivation is to evaluate the amount of increase in productions as a result of irrigation. Such relations which usually characterized by mathematics formulas or curves are called production to water function. In the agricultural analysis like pattern optimization and culture accumulation, we need some function like agricultural crops production, water and salinity. The amount of water used and salinity has influence on crops function, so that by increase in both components in various stages of plant growth, crop function decreases. Many researches have been performed on production-water and production-salinity function, therefore less researches on production-water-salinity components. The equation provided by Letey and Dinar (1986) is a sample of these researches. Their model is a quadratics equation from independent variables of water salinity in irrigation (ECi) and dimensionless proportion of the amount of water used to evaporation in class A (AW/EP) in plant growth stage. Therefore, by using this model and parameters like evaporation, rainfall and also quantity and quality water potential in Golestan farmlands, we obtained production-water-salinity components for each product in three different areas across Golestan province (moisture to dry areas). These products include sunflower, cotton, wheat, barely, potato, tomato, corn, sorgom, water melon, soybean and rice. Finally, these equations were compared by results of previous experiments, some results correspond and others were different.
Key Word: production-water, production-salinity and production-water-salinity function, Letey and Dinar, Golestan.