

## عنوان مقاله:

Water Productivity Enhancement in a Semi-Arid Persian Garden

## محل انتشار:

مجله بهره وری مصرف آب, دوره 2, شماره 3 (سال: 1401)

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## خلاصه مقاله:

Introduction: Persian garden is an architectural combination of solids and plants, a living component that reflects the culture of Persian nation and regional climate situations. The main structure of all of the world's historical gardens are based on the nature and architecture or the method of combining plants, water and buildings that organize the body to create a suitable space for human life. What distinguishes the gardens as a cultural and natural heritage from other places is the conceptual layers of the meanings as well as physical and functional characteristics. Materials and Methods: The purpose of this study is the optimal use of water in Persian gardens and according to the previous and present works with a combination of the modern innovations such as constructed wetlands and hydroponic greenhouses that attempt to use an optimal amount of water by reusing it in these gardens. Results: There are two direct and indirect ways to improve water efficiency. There are three direct ways to improve productivity: I. Increasing the deduction form without changing the amount of water consumed. In this way, the fractional face increases without reducing the amount of water used. Improving the fertilizer program (feeding), changing the cultivar, improving crop management are solutions that reduce water consumption, will increase the face of the fraction and thus improve the efficiency of water. II. Reducing the denominator of the fraction means implementing a program to reduce applied water by recognizing the physiological behavior of plants, recognizing useless uses and making arrangements to control them, modifying agricultural operations to reduce water consumption such as modifying the planting date, changing cultivation methods such as transplanting, modification cultivation arrangement, modification of irrigation method. III. Integrated method, in the sense that at the same time as decreasing the denominator of the fraction, the form of the fraction also increases. In this strategy, recognizing the useless uses, recognizing the physiological behavior of the plant, modifying the irrigation method along with modifying the management of fertilizer consumption and agricultural operations are cases that will lead to reduce the denominator and increasing the fraction. The indirect method basically deals with processes that, although very important and for which different inputs are used, but are not considered. Crop losses from harvest to consumer consumption, energy losses of agricultural and irrigation ... machines, leaching of fertilizers and damage caused

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