



University of Zabol

Graduate School

Faculty of Water and Soil

Department of Range and Watershed Management

**The Thesis Submitted for the Degree of M. Sc  
In the field of Range Management**

**Investigating the Effect of the Crescent Structures on Some  
Vegetation Characteristics and Soil Fertility in Artemisia Habitat  
(Case Study: of Chahgorik Range in Mirjaveh City)**

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## **Abstract:**

One of the methods of storing precipitation in the soil is to create catchment crescents on the surface of pastures. For continuous and sustainable use of rangelands, the construction of catchment crescents has a great impact on soil surface indices and functional characteristics of rangelands. Storing a large amount of rainwater and its penetration into the ground creates favorable conditions for optimal use of runoff by plants, these changes must be recognized. The purpose of this study is to investigate the effect of pond crescent structures on some vegetation parameters and soil fertility in *Artemisia* habitat of Chahgorik rangelands of Mirjaveh city. After initial studies and identification of *Artemisia* species habitats, reference was made to the area and for this study, two control treatments (no crescent water intake) and one crescent water treatment structure were considered. In each treatment, using a systematic-random method and using 4 100-meter transects and 10 plots in each transect with dimensions of 2 square meters in accordance with the conditions of the region and crescent dimensions, then in each plot, density, percentage of canopy cover and Lashberg was estimated. Also, to study the soil properties at the beginning and end of each transect, sampling was taken from two depths of 0-10 and 10-40 cm of soil at the base of the species and the control area (without species). Nitrogen, phosphorus and potassium properties of soil were measured. Finally, in order to investigate the effect of crescent structure on vegetation and soil fertility on Dasht-e *Artemisia* species, analysis of variance and independent t-test were performed in SPSS software. The results showed the positive effect of catchment crescents with 95% confidence level on soil properties and density and percentage of vegetation canopy. So that the density and percentage of canopy cover in the treatment area is higher than the amount in the control area. In general, the results of this study have improved the condition of soil and vegetation, which indicates the positive effect of this breeding operation in the studied rangelands.

**Key words:** Crescent Structure, Vegetation, Soil Fertility, *Artemisia Sieberi*, Mirjaveh City