University of Zabol

Graduate school

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The Thesis Submitted for the Degree of M.Sc (in the field of Range Management)

Effects of different ways of rainfall storage on restoration of vegetation

(Case study : Rangland of Romeh and Dehno watershed, Nehbandan city)

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Abstract:
One of the most important ways of being adapted with droughts and preventing from desertification process is beneficial use of water resources. It should also be tried to use rainfalls and surface currents as effectively as possible The purpose of this study was to investigate the effects of different ways of rainfall storage on vegetation restoration in Romeh and Dehno watrershed where the project of rainfall storage had been done in 2007. The site of the study was located somewhere at the northwest of Nehbandan city which is 70 kilo meters far from it. This site is located between latitudes 31 46 15 up to 31 57 46 and between Longitude 59 16 41 up to 59 32 48. In this research, 3 sites were used which had equal conditions from the aspect of topography conditions, general slope of the site, hillsides direction, hydrographic network density, soil texture and structure and wind direction including, 1-enclosure operation site, 2- contour furrow operation site, 3- control site. For each site, (with homogeneity condition in consideration) 30 plots were considered by the use of statistical methods. The length of each transect was considered 100 meters according to the site`s changes, vegetation and size. The first transect was located randomly while other transects were located parallel to each other in distances of 200 meters. In each site, 15 transects were located and then divided with appropriate distances on the plots for uniform distribution of the sample. Plots` surfaces were calculated 16 square meters using the minimal area method and the process of gathering data was done in plant`s growing season(May and April). In each of the plots, vegetation parameters such as vegetation percentage, density and production were measured. Homogeneity of variances with Leven s Test and normality of the data with Kolmogorov-Smirnov Test were measured and then analyzed with statistical methods of One way of ANOVA for obtaining sites` differences and Tukey test for analyzing the differences using SPSS software. The results of the study shows that there is a significant difference between the sites of performing enclosure and contour furrow and the control site at 0/05 level. It means that different performed ways of rainfall storage have different effects on vegetation restoration. Statistics taken during the study shows that enclosure and contour furrow implementation have more influence on restoration and increase of vegetation than control site. Moreover, enclosure implementation has a more decent influence on restoration and increase of vegetation than contour furrow. It also has more efficiency in taking the necessary proceedings for preventing from erosion. It should also be noted that enclosure implementation has a more decent influence on restoration and increase of vegetation than contour furrow and also has a more acceptable efficiency in taking the necessary proceedings for preventing from erosion.

Key words: Vegetation restoration, Contour Furrow, Enclosure, Romeh and Dehno watershed.