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## The effect of the exclude on the improvement of the rangelands in Hamadan province , Iran

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**Key words :** enclosure , canopy cover , forage production , range improvement , Hamadan

**Introduction** Study of vegetation changes of grazed and ungrazed rangelands is most important in range management programs (Tuckel , T . 1984) . Vegetation changes were studied for four years (2000-2003) inside and outside of the enclosure in Gian rangelands of Hamadan province . West et al reported that insipid of good rainfall in Utah semi desert rangeland no significant increase in grassland production (West , et al .1998) .

**Material and method** Measurements were made in permanent plots that have been established in study areas since 2000 . Forage production was measured in randomized plots each year . Data were compared whit T test analysis .

**Results** The cover of all plant forms , such as shrubs , grasses and forbs increased significantly inside of enclosure in this period (Figure 1) . Decreases , increasers and invaders decreased inside , but outside of enclosure there was an opposite trend . Frequency of good quality plants increased inside and decreased outside . Range condition increased from poor to fair inside and decreased to very poor outside of enclosure . Overall , a positive and negative trend was observed inside and outside the enclosure area (Figure 2) .

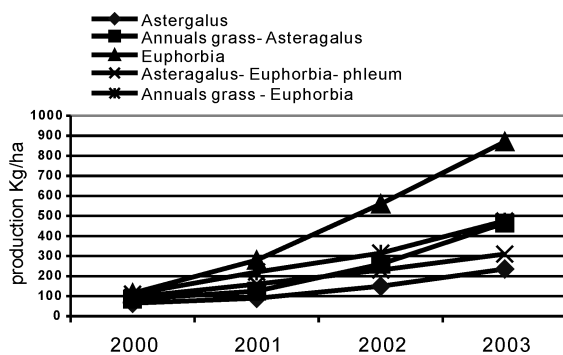


Figure 1 Production Gradient curve of vegetative form in inside enclosure .

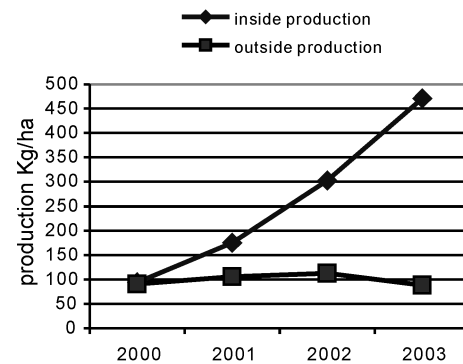


Figure 2 Production Gradient (Kg/ha) in inside and outside of enclosure .

**Conclusions** In second year of study , rainfall was greater than others . In final year annual precipitation was more than first year but seasonal rainfall that is effective in growth , was less than first year . Relationship between species canopy cover and annual and seasonal rainfall evaluated , however the correlation coefficient between rainfall and some species was significant . Overall , in comparison inside and outside , enclosure improved vegetation condition , forage production and range condition , under this climatic .

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