



University of Zabol  
Graduate school  
Faculty of Agriculture

Department of Agronomy and Plant Breeding  
**The Thesis Submitted for the Degree of Master of Science  
(In The Field of Agronomy)**

**Title:**  
**Ecological zoning three important crops,  
using GIS  
(Case study: Mashhad Region)**

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# **Ecological zoning for three important crops, using GIS**

## **(Case study: Mashhad Region)**

### **Abstract**

Recently, the application of new technologies in scientific agriculture is increasingly developing. One of the most significant causes that pushed agriculture toward modernization and consumption of latest approaches is the population increase and also peoples demand for food stuff. One of the latest agricultural approaches that made scientist curious to study more and put more emphasis on its application in agriculture is precise agriculture.

There are five latest technologies that are used in precise agriculture: Geographic information system, remote sensing, Global position system, Yield mapping and Variable rate technology.

In the current study the three first approaches are used (GIS, RS, and GPS). What is more three different products are also applied which are wheat, suger beet and corn. Wheat is one of the most important crops in agricultural products. This product is occupied most cultivated lands of the globe. Wheat is much respected in our country Iran. Mashhad region (Mashhad province) owns the first level of producer in Iran, since this place is a suitable for sowing this product. Consequently, finding a relevant and desirable place for planting is our main goal in this study. Finally the latest experimental product is corn. It is a forage product with highest yield. Corn is a  $c_4$  photosynthetic plant, thus needed to be planted in special regions in order to gain the highest output.

**Keywords:** Ecological zoning, Wheat, Suger beet, zea mays, GIS, RS, GPS, Mashhad region.