Feasibility of safflower cultivation based on Analytic Hierarchy Process (AHP) analyses in GIS environment (Case study: Ardebil)

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ABSTRACT:

The separation of cultivation areas in Iran is mostly based on traditions and agro-climatic potential of most areas of the country is unknown. Considering these the aim of this study is to examine the climatic feasibility of rain-fed cultivation of safflower in Ardabil based on its environmental potential, so that while reducing costs and increasing efficiency of the studied variables, increase the crop yield per unit of area. The present study used climatic and edaphic variables in the form of AHP (Analytic Hierarchy Process) approach to weight the layers. We used geostatistical method and overlapping feature of ArcGIS software to generate final maps of data. Data analysis showed that Ardebil could be divided into four areas regarding safflower cultivation: very suitable, suitable, average and poor. Very suitable and suitable areas for rain-fed cultivation of safflower in the province are mostly in the northern part of the province with total area of about 249290 ha, which is about 61% of the total area of the province. Climatic factors including temperature, sunshine, days of frost in the southern regions of the province have limitations and are not recommended for safflower cultivation.

Keywords:
Ardebil, Safflower, Location, AHP and GIS models.