**Investigating and predicting the hazardous effects of monthly extremes temperature on horticultural and agricultural products in the north of Iran (Golestan, Gilan and Mazandaran provinces)**

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Changes, although low in temperature, change the occurrence of extreme phenomena such as droughts, heavy rainfall and storms (Varshavian et al., 2011: 169). Reducing the daily temperature variation has led to a reduction in the frequency of occurrence of temperature minima, especially in winter (Schiffinger et al., 2003, p. 51-41). It introduces the world's temperature as a general criterion for the sustainability of the world's climate (Hansen et al., 2006: 14290). Temperature is of great importance among climate variables, and accurate temperature simulation is important in meteorological and agricultural studies (Tatarta et al., 2012).

The purpose of the present study was to investigate and predict the risk of monthly rainfed temperatures on horticultural and agricultural products in northern Iran. For this purpose, first, the data of the temperature of the whole station were obtained at a time interval of 30 years. Then, using Anfis's adaptive neural network model, data were collected for prediction and prediction for the next 6 years. Then, to measure the land suitability of the northern strip Iran was used for cultivating according to the predicted data using two models of Vikor and Topsis.

In recent years, damage to agricultural and horticultural products has been increased due to temperature fluctuations. Accordingly, in this research, the prediction of the risk of monthly rainfed temperatures on horticultural and agricultural products in northern Iran has been investigated. For This work was performed monthly after receiving the data and analyzing them using Anfis's comparative neural network model and its modeling for prediction. Then, its data after the failure for six years of pre- Then, based on two models of Vikor and Topsis multivariate decision making, the suitability of the northern strip of Iran was evaluated. Regarding the friction modeling, the temperature cut-offs were the minimum temperature for the maximum temperature with respect to the minimum temperature. Regarding the errors obtained, high temperatures were predicted for the next six years. Based on the predicted data, the minimum temperature of the Gorgan station was the lowest educational error with a value of 0.10 and at the maximum temperature, the lowest error was 0.015. Finally, in Golestan province, the maximum temperature And at least both are weak in the incremental state. Minimum and maximum temperature of Bandar Anzali station was the lowest educational error with the value (0.013, 0.10). In Gilan province, the maximum temperature peaks and at least both are in incremental conditions and the maximum temperature has a higher intensity. Be The minimum temperature of the Babolsar station was the lowest educational error with the value of 0.019 and at Ramsar maximum temperature, the lowest error was 0.016, and Mazandaran province exhibited maximum and minimum temperatures at both incremental and minimum levels Temperature showed greater intensity.

According to the findings of the study, with respect to the friction frain modeling, the maximum temperature showed the lowest defect compared to the minimum temperature. In Golestan province, the maximum temperature peaks and at least both are in weak increment, but in Gilan province, the maximum temperature peaks and at least both the maximum and maximum temperatures are higher. Mazandaran province showed maximum temperature and minimum temperature in both incremental and minimum temperature conditions.

**Keywords**: hazard, Farin Temperature, Gardening and Agricultural Products, Northern Iran, ANFIS.