

Estimation of Agroecological Indexes of Kvemo Kartli Region

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Growth, development and productivity of crops in Kvemo Kartli region are mainly provided by agroclimatic conditions. Sum of active temperature ($>10^{\circ}\text{C}$) in the region fluctuates within the range of $1900-4160^{\circ}\text{C}$ according to the districts.

As a result of uneven distribution of atmospheric precipitation during the vegetation period, provision of the soil humidity in the region is not uniform at different phases of crops' development. In such conditions crops undergo water deficit, which affects the yield (during the vegetation period atmospheric precipitation does not exceed 700 mm).

Temperature is one of the factors essential for growth, development and productivity of crops. Generally the presented indexes are satisfactory for the production of most crops.

On the basis of the agroclimatic indexes 5 zones are denoted.

Zone I covers eastern and south-western parts of the territory of Gardabani district. Sum of active temperatures ($>10^{\circ}\text{C}$) in the zone exceeds 4000°C . According to many years observations annual atmospheric precipitation makes 400-500 mm and 300-350 mm during the warm period. It seems to be prospective to grow Fruit crops, cereals, vegetables, oil-seed, technical and other crops.

Zone II embraces the territories of Marneuli, Bolnisi and Tetrtskaro districts and spreads to the north of Gardabani district up to Mtskheta districts and to the north-east up to Sagarejo district. Sum of active temperatures ($>10^{\circ}\text{C}$) in the zone exceeds 3000°C . Atmospheric precipitation makes 500-600 mm, in warm period – 300-400 mm. All grapevine varieties, fruit-crops, cereals and vegetables can be successfully cultivated here.

Zone III embraces from south-west part territory of Bolnisi district, from the north-Tetrtskaro and Gardabani districts and from the north-west the territory of Dmanisi district. Sum of active temperatures ($>10^{\circ}\text{C}$) in the zone makes $>2000^{\circ}\text{C}$. Annual Atmospheric precipitation makes 600-700 mm and 600 mm during the warm period. The given zone suitable for cultivation of cereals, vegetables and some fruit-crops and for using as pastures.

Zone IV embraces south-west and north-east parts of Dmanisi and Tsalka districts and insignificant part of north-east parts of the territory of Gardabani district. Total air temperature ($>10^{\circ}\text{C}$) in zone is low (somehow higher than 1000°C). Annual Atmospheric precipitation makes 700-800 mm and 550-560 mm during the warm period. The zone is prospective from the viewpoint of pastures and grasslands.

Zone V covers western part of Dmanisi district and north-west part of Tsalka district. Total air temperature ($>10^{\circ}\text{C}$) is low (1000°C). Annual Atmospheric precipitation makes 800-850 mm. Root forage vegetables can be cultivated here and pastures and grasslands should be developed.