

Reserch on nutrient losses by runoff to various crops in Tarina Vale experimental polygon, Perieni

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The paper presents the experimental results obtained, in 1995-2003 period, on standard plots for runoff and erosion control, located in the Tarina Vale subcatchment. The experimental polygon is located at 232 m altitude on a 12-14 % slope of land with moderately eroded cambic chernozem soil.

The measurements were carried out regarding humus, N, P, and K losses, for 9 year period, in 10 standard plots (each plot having an area of 100-150 m²), cultivated with different crops in rotation: winter wheat-maize-bean-soybean-bromus sp., the control being mentained as bare fallow.

The obtained results are follows:

- **Humus losses:**
 - 8.85 to 110.71 kg/ha with good protective crops (bromus sp. and winter wheat);
 - 1523.4 to 2128.51 kg/ha with low protective crops la (maize, bean, soybean);
 - 8367,9 kg/ha with bare fallow.
- **Nitrogen losses:**
 - 1.2 to 6.44 kg/ha with winter wheat and bromus sp., of which 62.46% in runoff water with bromus sp. and 12.13% with winter wheat;
 - 82.17 to 111.07 kg/ha with low protective crops, of which 3.95-4.06% in runoff water.
 - 423,73 kg/ha with bare fallow, of which 1,46% in runoff water.
- **Phosphorus (P₂O₅) losses:**
 - 0.146 to 15.877 kg/ha, of which 83.78-39.45 % in runoff water with good protective crops; 13.60-16.56 % in runoff water with low protective crops and 15.25 % in runoff water with bare fallow.
- **Potassium (K₂O) losses:**
 - 1.072 to 66.603 kg/ha, of which 65.74-94.22% in runoff water with good protective crop; 30.71-35.51% in runoff water with low protective crops and 16.69 % in runoff water with bare fallow.

In conclusion the good protective crops, as whiter wheat and bromus sp., proved the higher efficiency in runoff and erosion control, by reducing the impact of raindrops and the possibilities of soil particles transport.