# GREEN MANURE - ONLY POSSIBILITY TO SAVE MOLDOVA'S ARABLE SOILS FROM DEGRADATION

**Valerian CERBARI[1], Corina LEAH[1]**

e-mail: cerbari@bk.ru

**Abstract**

The soil as an organic-mineral system is functioning normally and has a high capacity of agricultural production only if there is a constant flow of organic matter in its arable layer. In Republic of Moldova in the last 25 years organic fertilizers are practically not applied in agricultural soils. The agricultural output was reduced 2 times and livestock - 6 times. In terms of the lack of a rational ratio between the crop sector and livestock, it was established by calculation, that humus balance in the soils became profoundly negative, minus 1 t/ha/year. The only possible solution to change the situation is the use of green manure. Field research revealed that under the climate conditions of Moldova a harvest of green mass and roots of autumn vetch, incorporated into the soil as intermediate culture, leads to humus accumulation of about 2-3 t/ha. Also in the 8 t/ha of vetch organic residues absolutely dry incorporated into soil, contains almost 270 kg/ha of biological nitrogen, 60% of which (160 kg/ha) has a symbiotic origin. Thus, for the next two years this ensures a positive balance of organic matter in arable layer of soil. The system use of this procedure leads to solving the problem of humus and nitrogen in the soil and helps improve his physical quality. The bulk density of 0-20 cm arable layer was reduced from 1.37 to 1.21 g/cm$^3$. It has improved soil structural state and reduced its resistance to penetration.

**Key words**: balance, green manure, humus, soil, structure