

M. HALAN, R. ROP, R. HUK

Institute of Agriculture of Carpathian Region of NAAS

**EFFICIENCY OF SPONTANEOUS INOCULATION
BY NODULE BACTERIA OF VETCH (*VICIA PANNONICA* L.)
AT CONDITIONS WESTERN FOR EST-STEPPE OF UKRAINE**

Symbiosis of plants and nodule bacteria is product of combined evolution of partners. Its efficiency determined by genotypes as plant so and microorganisms. The largest effective symbiosis forms in case when peculiarity of plant and bacterium realized maximum. It is obvious that the highest symbiotic efficiency will be reach by way quest of complementary links of partners genotypes.

The availability in soil of species–peculiar strains of nodule bacteria whose actively enter in symbiosis with that or the other culture is significant condition of effective function of symbiotic systems. Our investigations of symbiosis in vetch are indicated that in conditions of stationary the available local populations of nodule bacteria strains entering with its in symbiosis formed nodules on roots. It is established that dry mass of root nodules in plants of studied families in average was 0,16 g/plant. The mean indices of nodule bacteria dry mass in families fluctuated in limits 0,09–0,26 g/plant, moreover it was discovered its high changeability ($V = 37,5\%$). The individual changeability of dry mass indices of nodules on plants roots in families is high also (from 11 to 96 %). The high variability of root nodules can make breeding interest since it is known events selecting of plants lines with high ability to nitrogen fixation and high level its heredity in next generations.

It was conducted correlative analysis for establishment dependence between of formed nodules and formed by plants of vegetative mass. It was established that in phase of flowering outset its mass was in average 3,3 g/plant. The mass of formed vetch plants of dry green mass characterized with significant variability that were 33 % between families and 23–85 % inside ones.

For definition of narrowness and forms of link between indices of dry mass of root nodules and dry green mass correlative and regressive analyses was conducted and discovered the strong positive its dependence ($r = 0,74$, $p \geq 0,99$) which have linear character and expressed with equation of direct line $y = 1,201 + 12,98x$.