

**INVESTIGATION OF VARIABILITY OF MORPHOLOGICAL MARKERS
OF CONE AND SEEDS IN TREES OF NATURAL POPULATIONS OF SCOTS
PINE IN RIVNE REGION.**

Mazhula O. S., Gordiyaschenko A. Yu.

Whole groups of scientists have done researches variability of populations of Scots pine in different region of former Soviet Union. Natural populations of Scots pine in Ukraine are under-investigated to the present day particularly as regards natural population of pine of Ukraine Polissya.

Morphological markers of cone and seeds are original genotype of trees of species of genus *Pinus*. These significant marks are used for evaluation of interspecies variation of pines in natural area.

Goal of researches was evaluation of variability of morphological markers of cone and seeds of natural populations of Scots pine in Rivne region, definition of differentiation of study population on the basis of suite of metrics.

The object in this study was cones and seeds of trees of Scots pine from five natural populations from most typical forest growth conditions A_2 , B_4 and B_3 in Rivne region in the territory of Ukraine Polissya.

Test portions of cones and seeds had been taken from 16 to 62 trees of Scots pine in dependence to cone crop.

For population analysis we used standard methods of observation variability. We determined the following morphological traits: apophysis of cones, colour cones, seeds and winged of seeds.

Investigation of variability of apophysis of cones in natural populations of Scots pine in Rivne region was showed a large variety of morphological markers. 9 new forms of apophysis of cone: B_7 , B_8 , B_9 , B_{10} , B_{11} , B_{12} , B_{13} , B_{14} and B_{15} , were described.

The most common form of apophysis of cones in all investigated stands of Rivne region was B_4 , 25,8% of explored trees had this apophys. 23,4% of explored trees had form of apophys B_3 . Another forms of apophysis occur more rarely than above mentioned: B_2 – 8,3%, B_9 – 6,3%, B_6 – 5,4%, B_1 – 4,8%.

As shown in results of investigations the natural populations of Scots pine in Rivne region are characterized following distribution of trees after colour

cones, seeds and winged of seeds. The grey colour of cone prevail in 40,9% investigated trees, brown colour of cone – in 35,1% and stone colour of cone – in 24,0% investigated trees.

The black colour of seeds predominate in 61,6% investigated trees, brown colour of seeds – in 22,4%, stone and gay colours – in 7,5% and grey colour of seeds – in 1% investigated trees. The dark brown colour of winged of seeds prevail in 41,8% investigated trees, brown colour of winged of seeds – in 39,8%, light brown colour of winged of seeds – in 18,4% investigated trees.

The frequency distribution of different morphological forms of cone and seeds considerably differed according to forest types of investigated of natural populations of Scots pine.

CONCLUSION

Cluster analysis of complex of morphological markers of natural populations of Scots pine was showed major difference between investigated stands. The natural population differed according to forest types. The distance of populations was bigger whereas they differentiated based on moisture conditions and soil fertility. The distance of populations was less whereas they differentiated based on only moisture conditions.

Variability, natural populations, Scots pine, morphological markers of cone and seeds, apophysis of cone, percent of morphs, genetically diversity, coefficient of variation.