Over time the collection(s) accumulated duplicate samples that require extra spending on its conservation and also leads to misrepresentation of the real level of the stored genetic diversity. In connection with the active cooperation of VIR and the NordGen it seems actual to search for possible duplicate cultivar accessions in their Avena sativa L collections.

Comparative study of Scandinavian and Canadian cultivar accessions was carried out both in the field and in the laboratory.

On the results of the Pushkin branch VIR field study PD-accessions were compared with each other by 26 morphological and breeding-valuable traits.

To evaluate the field differences of the each pair PD-accessions, the D施策 index was proposed. It accumulated the revealed differences both in qualitative and quantitative plant traits.

For all 112 pairs D施策 index value was in the range of 0.1–8.4.

D施策, probability structural analysis showed that the distribution is characterized by a pronounced right-sided asymmetry (the asymmetry coefficient was 1.4).

Duplicate accession identification in the VIR (Russia) and NordGen (Sweden) Avena sativa L. collections.

These data indicated that the tested oat sample was inhomogeneous and consisted of both duplicate and non-duplicate pair accessions. In accordance with D施策 value, the PDPs were conventionally divided into three groups, wherein duplicates could be identified with various degrees of probability.

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of pairs</th>
<th>D施策 index range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>56</td>
<td>0.1–1.5</td>
</tr>
<tr>
<td>2</td>
<td>46</td>
<td>1.6–3.9</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>3.9–8.3</td>
</tr>
</tbody>
</table>

In this case is the use of standard laboratory methods, because original cultivar seeds may partially or completely lose germination especially upon prolonged storage. To decide which of the non-duplicate accessions is a true cultivar representative, it is possible to compare them with the original cultivar accession. The most reliable in this case is the use of standard laboratory methods, because original cultivar seeds may partially or completely lose germination especially upon prolonged storage.

Comparison between field and laboratory trials showed:

The sets of duplicate and non-duplicate pairs identified by electrophoresis were significantly different in terms of D施策 index according MannWhitneyUTest. (p = 0.0001).

PD-accessions characterized by qualitatively different avenin biotype composition belonged only to groups 2 and 3. Compared with groups 1 and 2, composition differences between the accessions with same name were more expressed in group 3.

The lower was the group D施策 index, the more duplicate pairs were identified in the group by the protein markers.

Accession duplicatoin cannot be confirmed without comprehensive study of the material. The revealed conformity between the results of the field and laboratory tests shows that it is possible to use protein markers (avenin spectra) for identification of duplicate accessions in oat collections even before field trials. Field evaluation of crop accessions is interfaced with phenotypic variability of the majority of characters used in monitoring as well as with its duration. Molecular methods are more objective and reproducible in different laboratories, which is important for coordinating the work of different genebanks.