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PRESCREENING OF VARIETIES: A CASE STUDY ON *POA PRATENSIS*

Document prepared by experts from the Netherlands

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Referring to the document TWA/25/7 and the discussion during the TWA meeting in 1996 (TWA/25/7, paragraphs 17-24), the following remarks can be made:

1. The testing of the electrophoretic database for *Poa* has been delayed due to technical problems. Only recently all 250 varieties have been stored in the database.

2. The first experience shows a major problem. The comparison of similar lanes on different gels is not accurate enough. Although each gel contains three reference lanes, the positioning of the important main bands is in some cases problematic.

3. Another difficulty is the low intensity of some bands. This is a well known problem in electrophoresis but it complicates the task to identify an unknown sample, by comparing it with the electrophoresis database.

4. A possible improvement may be reached by using a computer system in which the conformity of the electrophoretic patterns is calculated. Using a threshold value gives a reliable chance to find the similar variety. This system may be tested next spring.

According to paragraph 20 of the report of the 1996 TWA meeting, morphological seedling characteristics might be used in combination with electrophoresis.

The following procedure may be tested next spring:

1. The candidate varieties are put in the electrophoretic database.

2. Seedling characteristics are recorded and fed into a database, which contains the characteristics of all varieties.

3. The candidate varieties are compared on the basis of the seedling characteristics with all varieties in the database. Similar reference varieties, of which the differences are not clear or doubtful, are printed on a list.

4. The electrophoretic lanes of these close reference varieties are compared with the candidate varieties. If the electrophoretic differences are clear and support the (small) differences recorded in the seedling characteristics, the reference variety may be omitted in the spaced plant trial.

In this way the “grouping” will be based on the seedling characteristics. The electrophoretic characteristics may be regarded as “supportive” or “complementary” characteristics. This approach may prevent the complication of using non-guideline or non-routine characteristics for grouping.

A similar approach may be tested for potatoes, using lightsprout characteristics in combination with electrophoresis.

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