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The use of molecular techniques for the renewal of reference material

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The use of living reference collections

- For some DUS tests it is necessary to maintain living reference material
- Seed can be stored relatively easy and when needed the material can be renewed asking a new sample and comparing the new sample with the original sample in a field trial.
- For vegetatively reproduced material the maintenance of such collections is more complicated

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Collections of vegetatively reproduced varieties

Besides the ‘normal’ problems of keeping the minimum number of plants that are defined alive and healthy, in some cases the age of the reference material may become problematic.

In some cases this is an unavoidable problem E.g. with fruit tree species it is normal that young plant material of applications has to be compared to older material of the reference collection

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Renewal

- In some cases comparison between the old reference material and new applications creates problems.
- In those cases new reference material has to be requested and the problem arises to ensure that the identity of the newly received reference material is identical to that of the old material
- Such problems can be solved using sources such as: variety description, photo's, old material (if still available)

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Old and new reference material

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Potential problems

- Small differences between description/photo and newly supplied material can give the impression that the material is not representing the variety.
- DNA techniques can help
- SSR based techniques were used to compare the DNA of the old material with that of the new.
- If DNA patterns matched, the new material was accepted with a visual ‘post control’
- If DNA patterns did not match further morfological comparison was made

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Size difference

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Future use

- For future use the DNA of all varieties is stored so if material is needed for side by side comparison, the identity can be checked easily.
- At the moment there is a project to exchange DNA data of varieties on the market in Asia and in Europe.

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Quality in Horticulture