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DUS EXAMINATION OF MUTANT VARIETIES OF APPLE

Document prepared by the European Union

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The Annex to this document contains a copy of a presentation "DUS examination of mutant varieties of apple" to be made by the European Union at the forty-seventh session of the Technical Working Party for Fruit Crops.

[Annex follows]



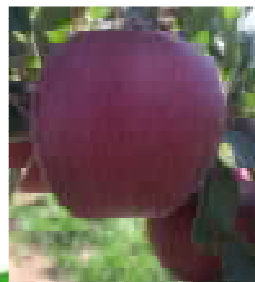
DUS examination of mutant varieties of apple

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TWF Angers, 14-18 November 2016

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DUS examination of mutant varieties of apple

- Apple varieties mutate easily
- Breeders and growers looking for mutants with the same objective
 - Eg 'Gala' varieties with washed red colour and colouring earlier
 - They find similar or the same mutants
 - They apply



DUS examination of mutant varieties of apple

- Challenge to identify the closest varieties for the DUS trial
 - Candidates potentially grown in a different environment
 - Technical information in the questionnaire & photo not so easy to compare
 - Worldwide crop, worldwide applications



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- Challenge to identify the closest varieties for the DUS trial
 - Concrete example
 - ✓ Serie of 'Gala' varieties with washed red colour applied for Community Plant Variety Rights, first one 'Devil Gala' in 2012
 - ✓ DUS trials started subsequently. Every year, new applications
 - ✓ In 2016, application for 2 varieties of the same type applied earlier:
 - 'Gala Fult', applied in UY in 2007
 - 'Bigbucks' applied in ZA in 2011
 - ⇒ Should have been included in the DUS testing of 'Devil Gala'!



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- Challenge to identify the closest varieties for the DUS trial
 - Concrete example
 - ⇒ Proposal that for some mutation groups (Gala, Golden, Fuji ...), exchange of information between UPOV members as soon as a variety has been applied
 - ⇒ CPVO could coordinate the exchange of information twice a year, at the respective seasons of organisation of the DUS testing



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- Ideally, need to compare the candidate and the reference variety
 - On the same rootstock
 - ✓ Various practices in the EU, M9 Cepiland PAJAM in FR, M9 T337 in Italy and other countries
 - ⇒ Idea to impose 'M9 T337'



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DUS examination of mutant varieties of apple

- Ideally, need to compare the candidate and the reference variety
 - At the same age
 - ✓ Difficulties in the establishment of Distinctness between varieties under technical examination at different stages of development
 - ✓ Communicate the situation to applicants as soon as possible
 - ✓ Restart a formal parallel DUS trial with all varieties of the same age and on the same rootstock



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- The options
 - Option 1.
 - The examination office prepares the plant material
 - ✓ D problem identified in the autumn of year N
 - ✓ Graft wood taken from the Examination Office collection or from the material under DUS in the summer of year N+1
 - ✓ the trial can restart in the spring of year N+3
 - Pro** security that all material will be available, has the same age and is on the same rootstock
 - Con:** propagation of the variety from the examination office, grafting work, delay



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- The options
 - **Option 2.**
Plant material is ordered to applicants and holders of reference varieties.
 - ✓ D problem identified in the autumn of year N
 - ✓ Plant material ordered on a prescribed clone of M9, e.g. T337 in the beginning of the winter of year N
 - ✓ submitted for the spring of year N + 1
 - Pro** Less work for the examination office.
The parallel trial could start rapidly



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- The options
 - **Option 2.**
 - Con** what to do in case one the holder of the candidate or reference variety does not have trees on the prescribed clone of M9
 - ✓ Delay the beginning of the parallel trial?
 - ✓ Still start the parallel trial with what we have, the missing variety would be submitted the year after. Information of the applicant of the situation?



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- The options
 - Option 3.
The examination office prepares the plant material
 - ✓ D problem identified in the autumn of year N
 - ✓ Graft wood requested to the breeder in the summer of year N+1.
If the breeder does not send the graft wood, offer him to choose it in the trial. If he does not come, the examination office chooses it.
 - ✓ The trial can restart in the spring of year N+3
 - Pro** security that all has the same age and is on the same rootstock
 - Con:** grafting work, delay.



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- Is the apple DUS protocol and the conditions of technical examination appropriate ?
 - DUS protocol will probably be reviewed in the coming years, new characteristics?



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