



**BMT/12/19 Add.**

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**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**  
GENEVA


**WORKING GROUP ON BIOCHEMICAL AND MOLECULAR  
TECHNIQUES AND DNA PROFILING IN PARTICULAR**

**Twelfth Session**  
**Ottawa, Canada, May 11 to 13, 2010**

ADDENDUM

COMBINING PHENOTYPIC AND MOLECULAR DISTANCES  
IN THE MANAGEMENT OF REFERENCE COLLECTIONS:  
APPLICATION TO SPRING BARLEY

*Document prepared by an expert from France*




## Combining Phenotypic and Molecular Distances in the Management of Reference Collection Application to Spring Barley

- Model as developed on Maize
- Spring Barley : large reference collection  
many new applications,  
lot of pair comparisons in DUS tests

Improvement of selection of comparable varieties

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## Combining Phenotypic and Molecular Distances in the Management of Reference Collection Application to Spring Barley

- 500 spring barley varieties
- 30 SSR markers: 234 alleles  
high polymorphism  
good level of uniformity
- assessment of phenotypic similarity on 250 pairs of varieties by experts:  
note 1: identical or very similar, note 9: totally distinct

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## Combining Phenotypic and Molecular Distances in the Management of Reference Collection Application to Spring Barley

- **New assessment on phenotypic similarity on 900 pairs in 2009**
  - Confirmation of the molecular threshold 0.3
- **Specific test to define precisely the GAIA threshold**
  - 10 is the minimum to get enough security

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