



BMT-TWA/Maize/2/7-a Add.

ORIGINAL: English

DATE: December 3, 2007

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

**AD HOC CROP SUBGROUP ON MOLECULAR TECHNIQUES
FOR MAIZE**

Second Session

Chicago, United States of America, December 3, 2007

ADDENDUM TO DOCUMENT BMT-TWA/MAIZE/2/7-A

GUIDELINES FOR THE HANDLING OF A DISPUTE ON ESSENTIAL DERIVATION
OF GUIDELINES

Document prepared by an expert from the International Seed Federation (ISF)

This document is an addendum to document BMT-TWA/Maize/2/7-a “Concepts of Essential Derivation and Dependence” and contains a copy of the presentation made by an expert from the International Seed Federation, at the second session of the *Ad Hoc* Crop Subgroup on Molecular Techniques for Maize.

Slide 1

Guidelines for the Handling of a Dispute on Essential Derivation of Maize Lines

*(Adopted by the Maize and
Sorghum Section, May 2007)*

Slide 2

Studies

- Identifying Essentially Derived Varieties with Molecular Markers. Heckenberger et al. 2005 TAG 111:598
- Study on Essential Derivation in Corn in North America. Charles W. Stuber. North Carolina State University. 2005
- Synthesis of Studies conducted by SEPROMA on the estimate of genetic distances between maize inbred lines. B. Andreau, D. Dubrevil, D. Perret, F. Azanza, A, Charcosset. IRNA Station de Genetique Vegetale Ferme du Moulon F-91190 Gif/Yvette, France. SEPROMA 17 rue du Louvre, F75001 Paris, France December 2003

Slide 3

Studies

- An additional study was commissioned using the statistical model used in the Heckenberger et al study and the markers selected for use by the SEPROMA studies. The results are described in a paper ISF EDV Study, May 8, 2006. Martin Bohn, University of Illinois-Crop Science.
- The conclusion of these studies is that **molecular marker systems can be used to differentiate between inbred lines of maize**. It is further concluded that a threshold can be set that could initiate the discussion as to the derivation of one variety from an initial variety.

Slide 4

Conclusions

- The studies suggest that EDV might be a question if the homology, based on the Rogers distance, is 82% or higher.
- In order to help arbitration in a case of dispute, the ISF Maize and Sorghum Section recommends considering a second threshold of 90% using all the markers as a strong indication of predominant derivation.

Slide 5

Conclusions

- Because of the rapid pace of the technology development, the threshold and measurement technique described in this paper will be reviewed every five years and adjusted as necessary. In case of change in the measurement technique, the new protocol will be tested against a set of lines used for the establishment of the agreed threshold. This set of lines should be kept in a gene bank.

Slide 6

Future Amendments

- “Once the threshold of 82% is determined, the burden of proof shifts to the breeder of the putative essentially derived variety in question. Other criteria should be evaluated including combining ability, phenotypic characteristics and breeding records.”

[End of document]