E

BMT/10/18
ORIGINAL: English
DATE: November 21, 2006

UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

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

Tenth Session
Seoul, November 21 to 23, 2006

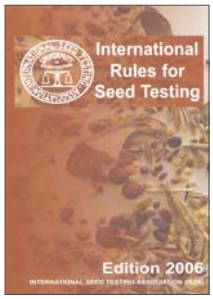
SPECIES AND VARIETY TESTING WITHIN ISTA

Document prepared by Mr. Michael Muschick, Secretary General, International Seed Testing Association (ISTA), Switzerland

SPECIES AND VARIETY TESTING WITHIN ISTA

By Michael Muschick – Secretary General ISTA

International Seed Testing Association (ISTA)



The International Rules for Seed Testing describe in chapter 8 "Species and Variety testing".

What are the objects of the species and variety testing with the ISTA International Rules for Seed Testing ?

Two objects are defined in the ISTA Rules

- **Verification of species and variety**

  The object is to determine the extent that the submitted samples conforms to the species or variety as requested by the applicant.

- **Testing for the presence of specified traits**

  The object is to test for the presence of traits in the submitted sample as specified by the applicant.

What methods are currently included in the ISTA International Rules for Seed Testing ?

Currently 15 methods are included in chapter 8 species and variety testing of the ISTA Rules:

1. Ultraviolet light	*Hordeum/Avena*
2. Colour reaction in dilute phenol	*Triticum*
3. Presence/Absence of Alkaloid	*Lupinus*
4. PAGE	*Triticum, Hordeum*
5. PAGE	*Pisum, Lolium*
6. PAGE	*Avena sativa*
7. Ultrathin-layer IEF	*Zea mays*
8. Ultrathin-layer IEF	*Helianthus annuus*
9. Colour of coleoptile	Cereals
10.Colour of seedling	*Beta spp.*
11.Colour of cotyledons	*Brassica spp.*
12.Fluorescence of root traces	*Lolium spp.*
13.Fluoresence of root traces	Festuca spp.
14.Examination of plants in field plots	Cereal, legumes and oil plants
15.Examination o fplants in field plots	Herbage plants

Who is responsible for Chapter 8: Species and Variety Testing?

The ISTA Variety Committee is responsible for handling all items regarding Variety Testing:

It is currently composed of 14 members from 10 different countries:

Rainer Knoblauch , Chair, Germany	Kae-Kang Hwu, Vice-Chair, Taiwan
C.C. Debashree, India	W. Drost, Canada
J. Drewwiecki, Poland	I.P.Gavriljuk, Rusian Federation
B. Killermann, Germany	P. Koranyi, Hungary
U. Kushnir, Israel	S. Gregoire, France
A. Middleton, Canada	C. Ram, India
A. Tahiri, Morocco	David Zhang, France

How is the ISTA Variety Committee structured?

The ISTA Variety Committee is structured in four Working Groups:

- Working Group on Conventional methods
- Working Group on Field trials
- Working Group on Electrophoretic methods
- Working Group on DNA Analysis

What were the priorities of the work of the ISTA Variety Committee?

Four major projects are on the agenda of the Variety Committee:

- Re-design of the chapter 8 and inclusion of the ISTA performance based approach for testing of specified traits (GM testing).
- Establishment of a searchable database giving an overview of existing methods and institution involved in Variety testing.
- Establishment of an ISTA Variety Proficiency Test.
- Establishment of annual training and education workshops.

What has been achieved so far?

Re-design of Chapter 8:
- finalised, performance based appraoch for specified trait testing (GM testing) included.

Establishment of Database:
- work is going on in all working groups. In the working group of conventional methods a number of projects has been identified.

Establishment of Proficiency test:
- sample preparation is going on at the moment. First proficiency test on Variety testing in the first half of 2007.

Establishment of training and education workshops:
- workshops has been executed in 2005 (China, Caribic) and 2006 (Germany, Turkey, Africa).

What projects are planned in the future?

A number of concrete project has already been identified:

Working Group on Conventional Methods:

Fluorescense:	- floret:	Avena white/yellow var.
	- seedlings:	Trifolium species
		Lolium perenne/ multiflorum
		Festuca rubra/ovina
		Allium Species
Chemical:	- Phenol:	Triticum varieties
	- Formic acid:	Sinapsis arvensis in Brassica
	- Lugol solution:	Lupinus with/without alcaloids
	- Hydrochloric acid:	Vicia sativa/villosa

What is planned in the future?

Working Group on DNA Analysis :

- Information collection for data base building
- Establishment of close cooperation with other organisations working in the same areas.
- Working toward international harmonisation of definitions among international organisations (e.g. OECD Seed Schemes, UPOV)