E

UPOV

TWC/34/15 Add.
ORIGINAL: English
DATE: January 27, 2017

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

TECHNICAL WORKING PARTY ON AUTOMATION AND COMPUTER PROGRAMS

Thirty-Fourth Session
Shanghai, China, June 7 to 10, 2016

ADDENDUM TO NUMBER OF GROWING CYCLES IN DUS EXAMINATION

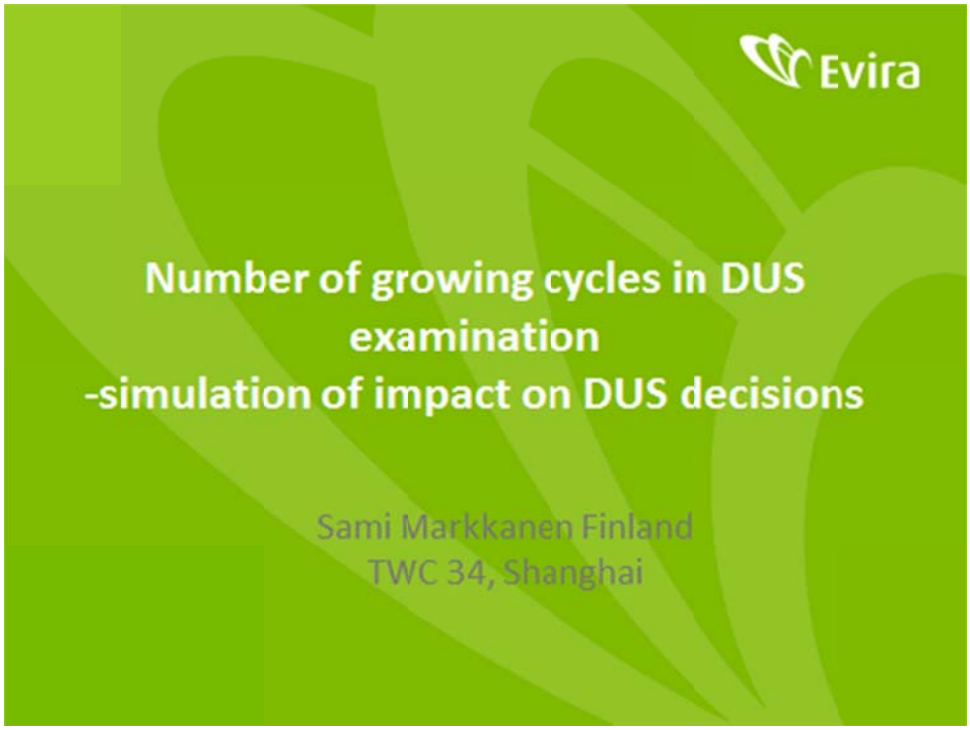
Document prepared by an expert from Finland

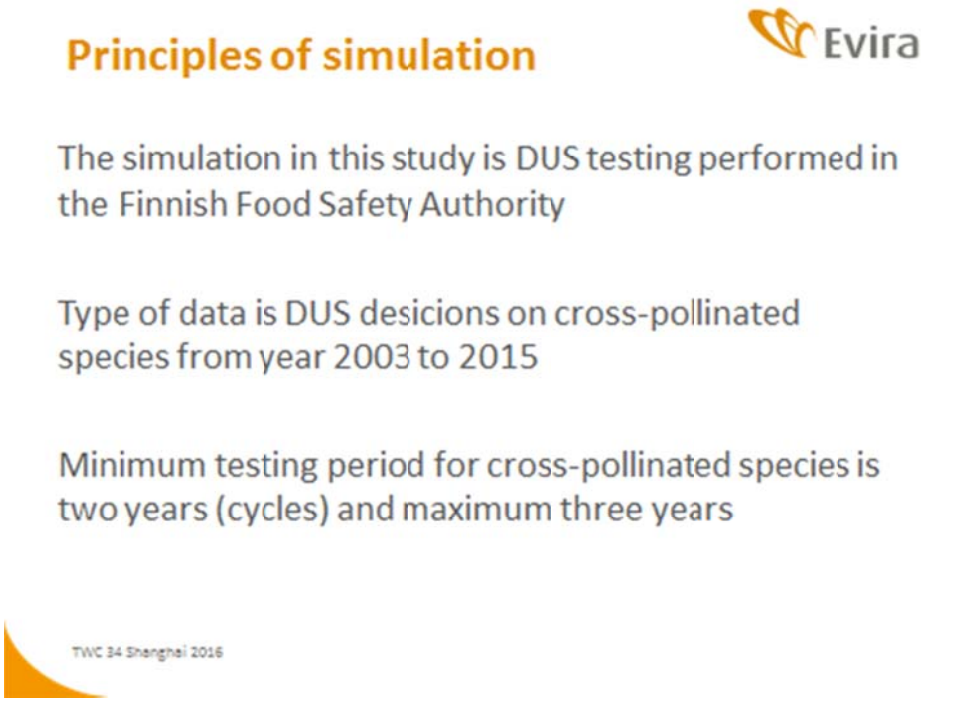
Disclaimer: this document does not represent UPOV policies or guidance

The Annex to this document contains a copy of a presentation on "Number of growing cycles in DUS examination -simulation of impact on DUS decisions", which was made at the thirty-fourth session of the Technical Working Party on Automation and Computer Programs (TWC).

Sami Markkanen Sami MARKKANEN, Senior Officer, Control Department, Finnish Food Safety Authority (EVIRA)

ANNEX


Evira
Number of growing cycles in DUS examination
-simulation of impact on DUS decisions
Sami Markkanen Finland
TWC 34, Shanghai


Principles of simulation
Evira
The simulation in this study is DUS testing performed in the Finnish Food Safety Authority
Type of data is DUS desicions on cross-pollinated species from year 2003 to 2015
Minimum testing period for cross-pollinated species is two years (cycles) and maximum three years
TWC 34 Shanghai 2016

Species reported and methods used in DUS testing

Evira

Species

- Timothy (*Phleum pratense, TG/34/6*)
- Meadow fescue (*Festuca pratensis, TG/39/8*)
- Red clover (*Trifolium pratense, TG/5/7*)
- White clover (*Trifolium repens, TG/38/7*)
- Turnip rape (*Brassica rapa* var. *silvestris, TG/185/3*)

Methods used in DUS Testing

- COYD/COYU method (DUSTNT program)
- Chi square method
- Data from plot observations (MG,VG)

Evira

Question

How many growing cycles are needed for DUS desicion?

- Two or three?

The focus is on distinctness, uniformity problems are rarely present in this data

Summary table

Evira

Amount of growing cycles needed for making the DUS decision

Species	Candidates D after 2 cycles	Candidates D after 3 cycles	total amount of varieties
Timothy	10 (34%)	19 (66%)	29
Meadow fescue	6 (35%)	11 (65%)	17
Red clover	13 (69%)	6 (31%)	19
White clover	3 (75%)	1 (25%)	4
Turnip rape	13 (72%)	5 (28%)	18

Note: there were not distinct varieties after 3 years in all species, but these were not included in the table, because 3 years is the maximum time allowed for DUS test

Conclusions

Evira

For timothy and meadow fescue three growing cycles are usually needed for making the distinctness decision.

Red clover, white clover and turnip rape are more commonly distinct after two growing cycles.

This could indicate that varieties of red and white clovers and turnip rape are more genetically isolated which shows in the phenotype, reflected by characteristics present in the TG.

Still, within the species, the amount of growing cycles needed for DUS desicion is mostly connected with the characteristics of the candidate variety compared to the reference varieties.

[End of Annex and of document]