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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

TECHNICAL WORKING PARTY FOR VEGETABLES

Forty-Eighth Session
Paestum, Italy, from June 23 to 27, 2014

ADDENDUM TO DOCUMENT TWV/48/26

USE OF STATISTICAL APPROACHES IN DUS EXAMINATION

Document prepared by the Netherlands

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The annex to this document contains the presentation made by an expert from The Netherlands, at the forty-eighth session of the Technical Working Party for Vegetables (TWV), on “Use of statistical approaches in DUS examination”.

[Annex follows]

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Use of statistical analysis in DUS-testing of onion and shallot

The Netherlands

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Use of statistical analysis in DUS-testing of onion and shallot

- TP/46/2
- Use of statistical analysis for:

10	VG	Seed propagated varieties only: Bulb: Tendency to split into bulblets (with dry skin around each bulblet)
11	VG	Bulb: degree of splitting into bulblets (with dry skin around each bulblet)
27	MS	Bulb/Bulblet: number of growing points per kg
28	MG	Bulb/Bulblet: dry matter content
29	VG	Onion varieties only: Tendency to bolting in spring sown trials
31	VG	Onion varieties only: Tendency to bolting in autumn sown trials
33	MS	Onion varieties only: Time of harvest maturity for autumn sown trials (foliage fall-over in 80% of plants)
34.1	MS	Onion varieties only: Time of harvest maturity for spring sown trials (as for 33)
34.2	MS	Shallot varieties only: Time of harvest maturity (as for 33)
35	MS	Time of sprouting during storage

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Method: counts, measurements

- Visual characteristics are ‘translated’ into measurements: by counting, to be fit for the use of statistics (10, 11, 29 and 31)
- MG characteristic 28: dry matter content, is a measurement of a bulk characteristic

- Candidate and comparison varieties in two replicates
- Counts or measurements
- Pairwise testing, using GenStat

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Method: Image analysis

An image analysis system is developed for a number of characteristics which at the moment are observed only visually, but then also can be analysed statistically:

- 13: Bulb: height
- 14: Bulb: diameter
- 15: Bulb: ratio height/diameter
- 16: Bulb: position of maximum diameter
- 17: Bulb: width of neck
- 18: Bulb: shape (in longitudinal section)
- 19: Bulb: shape of stem end
- 20: Bulb: shape of root end

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- See presentation NL on image analysis

Output

Pairwise testing: non-significant items in tprob, P=0.05

Makalu	5.186	A	AB.....
Rocio	5.201	B	AB.....
E 72.R5923	7.951	C	..CDE.....
Alison	8.801	D	..CDEFGH....
Tropea rossa tonda	9.201	E	..CDEFGHI...
Fabula	9.601	F	...DEFGHI...
Croque	9.751	G	...DEFGHI...
BGS 285	9.851	H	...DEFGHI...
ISI 31001	10.251	I	....EFGHI...
ISI 30100	11.751	J	.....J..
Red Creole	14.486	K	.....K.
BGS 286	16.201	L	L

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Giving notes

- Add notes of standard varieties
- Notes to candidates are given accordingly

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Distinctness

- Distinct when respective letters do not appear in same row
- A variety can be distinct while having the same note as the reference variety

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[End of Annex and of document]