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COMMENTS ON DRAFT TEST GUIDELINES FOR TOMATO

Comments prepared by experts
from Croatia, Czech Republic, France, Hungary, Poland, Slovakia, and Slovenia

**PROPOSALS FOR HARMONISATION
TOMATO UPOV DRAFT TWV/33/4**

*Discussions of experts from France, Poland, Hungary,
Czech Republic, Slovenia, Slovakia, Croatia*

List of characteristics

• Car 2 : Growth type

Delete the level semi determinate to avoid any confusion.

Explanation :

Growth type is directed by two monoallèlique gènes :

‘selfpruning +‘ (Sp +), dominant allèle, which permit plants to develop indeterminate growth.

At each trusse , the central bud apex is transformed on a flowering bud wich gives an inflorescence. In the same time, one of the two lateral, axil, buds is developing in vegetative growth and developps three new internodes and leaves till the next inflorescences and so on...

Generally 3 leaves, or internodes, are observed from one inflorescence to the next one.

‘selfpruning –‘ (sp-), a recessive allèle, wich permit plant to determinate after a number of trusses. This number is genetically determined but its expression is influenced by the agroclimatic conditions plant by plant.

At a precise level, the central bud apex is transformed on a flowering bud wich gives an inflorescence. But none of the two laterals, axil, buds start, the main stem ends on an inflorescence. Generally 1 to 3 leaves, or internodes, are observed from one inflorescence to the next one. These plants are named ‘determinate’.

DUS Examinators must pay attention to :

- **so called ‘semi determinate’ varieties from MARMANDE, COSTOLUTO FIORENTINO...types.** These varieties presents fasciation of the main stem, particularly at the position of the central bud wich transforms itself into inflorescence. Their observation can let the examiner interpretate:

- that they are determinate
- or that they belongs to an intermediate class.

But considering that on these types:

- the main bud gives always an inflorescence and the laterals, axil, buds start always for a further development of 3 internodes or leaves,

- three leaves and internodes develops always between two inflorescences,

these ‘semi determinate’ varieties must be classed in the ‘indeterminate’ level. They belongs to a subgroup inside the indeterminate level. Their determinisme is controlled by the same allèle sp+/sp+.

- **so called ‘semi determinate varieties’ or ‘varieties for semi determinate crop’**

These varieties are determinate varieties wich determinate at upper level (upper than 9 inflorescences as Prisca type, even more than the 20 th in some genotype as Early Pack type). So, they are used for :

- staked crop under glass house (PRISCA, BOLOGNA...), or for open field (Early Pack type in Italy)
- or for semi determinate crop on open field, as in Israël or South West part of France (conducted between iron rows with slight pruning).

- Car 4 : Speed of growth

This characteristic is suitable for glass housse varieties only, despite it is also influenced by the vigor of the seeds and the quality of plant at plantation.

This characteristic is less suitable for open field varieties.

- Car 5 : Stem : anthocyanin coloration of upper third

Reliable characteristic but more suitable for distinction than for routine description. The most part of the varieties are classed 1 to 5.

Expression of anthocyanin is influenced by day temperature. Under glasshouse conditions, the variation is rather low, except for varieties with Tm2 allèle wich is linked with anthocyanin of the stem (specially at inter node).

- Car 6 : Stem : Length of internode (between 1st and 4th inflorescence)

Explanation :

‘Measure the length between 1st and 4th inflorescence, count the number of internodes. Do the ratio length/number of internodes wich gives an average length of an internode.

A qualitative evaluation can be done by stopping the plant at a precise level :

- one leave after the 5th or 6th inflorescence on staked open field crops
- one leave after the 7th to 12th inflorescence under glass or plastic houses, depending of the height of the glass house.’

OR

'Indeterminate varieties have always 3 internodes between each inflorescence. Measure length of main stem between first and fourth inflorescence and divide the length by 12 internodes to get an average for identification.'

- Car 10 a : Leaf : size of leaflets

Characteristics rather difficult to assess and observed with variation from one leaf to another. Do not use for routine description. Keep it for distinction if necessary.

- Car 12 c : Leaf : size of blisters

Do not use for routine description. Keep it for distinction if necessary.

- Car 13 : Leaf : attitude of leaflets in relation to main axis

Note the attitude of leaflets with the petiole included.

- Car 16 : Flower : pubescence of style

Explanation :

Some non hairy varieties can present some rare and small hairs at the base of the style.

- Car 18 : Peduncle : abscission layer

A drawing is recommended.

Explanation :

'Absence of abscission layer on peduncle is determined by two monorecessive alleles, j2 (generally used) and j1, such varieties are named 'jointless varieties'. Some varieties, with no abscission layer, can present an excrescence (a collar, a roll ?) at the place of the abscission layer. Until the peduncle stay on the plant, when 'breaking' (picking) the fruit, these varieties are considered as jointless.'

OR

'Absence of abscission layer is determined by presence of gene j2 (j2/j2) - in the most part of the varieties - or j1 (j1/j1) - Varieties and level of the characteristics are named 'joint less.

Absence of the abscission layer conducts to harvest 100% of the fruits without peduncle. It stays attached to the raceme.

But expression of the characteristics is modified by genetic background. Some joint less varieties could expressed in one inflorescence of each plant, peduncle which are joint less and peduncle having a joint wich can break, but not so easily than 'non jointless

varieties'. It conducts to harvest on the same plant : fruits without peduncle and fruits having peduncle broken but not properly as non jointless varieties.

- Car 29 : Fruit : Size of core in cross section

Including inner walls

- Car 38 : Time of flowering

Explanation :

For staked varieties, this characteristic is assessed by observing the flowering date of the third flower of the second and third trusses, plant by plant. It is recommended to do not record the time of flowering on the first trusse whose the expression is more influenced by the seed vigor and the plantation quality.

The date of flowering is recorded by the plot average, trusse by trusse.

For determinate none staked varieties, it is recommended to grow them on pruned stake on main stem and record the characteristics as done for 'staked varieties'.

On non staked crop, this characteristic can't be observed due to the branching of the plant.

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