**Test Guidelines for Mandarin/Citrus L. (Group 1): TG/201/1**

**Additional Characteristic(s)**

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|  |  | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | **Note/ Nota** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **MS** | **Fruit: number of seeds (controlled manual crosspollination)** | **Fruit: nombre de pépins (allogamie manuelle contrôlée)** | **Frucht : Anzahl Samen (manuelle kontrollierte Fremdbefruch-tung)** | **Fruto: número de semillas (alógama manual controlada)** |  |  |
| **QN** |  | absent or very few | absents ou très peu nombreux | fehlend oder sehr gering | ausentes o muy bajo | Okitsu (SAT) | 1 |
|  |  | few | peu nombreux | gering | bajo | Nulessin (CLE) | 3 |
|  |  | medium | moyen | mittel | medio | Esbal (CLE) | 5 |
|  |  | many | nombreux | groβ | alto | Primosole (HMA) | 7 |
|  |  | very many | très nombreux | sehr groβ | muy alto | Clemenules (CLE) | 9 |

**[i]** indicate type of expression (QL, PQ, QN)

**[ii]** indicate method of observation (VG, VS, MG, MS)

**[iii]** example varieties to be provided for at least 2 states.

Explanation:

Method: 10 flowers should be observed on each tree. The 10 flowers should be protected from pollination by use of an individual mesh on each flower. Manual cross-pollination of the 10 flowers should be done with pollen from a variety with a high fertilization capability, such as 'Fortune', 'Ellendale', 'Nadorcott', 'Nova' or 'Common mandarin (Willowleaf, Mediterranean)'.

Range of counts for each of the states when pollinator is "Fortune":

|  |  |  |  |
| --- | --- | --- | --- |
|  | Example varieties | Note | Range |
|  | Okitsu (SAT) | 1 | ≤ 3 |
|  |  | 2 | > 3 ≤ 6 |
|  | Nulessin (CLE) | 3 | > 6 ≤ 9 |
|  |  | 4 | > 9 ≤ 11 |
|  | Esbal (CLE) | 5 | > 11 ≤ 15 |
|  |  | 6 | > 15 ≤ 17 |
|  | Primosole (HMA) | 7 | > 17 < 20 |
|  |  | 8 | > 20 < 23 |
|  | Clemenules (HMA) | 9 | ≥ 23 |

**Procedure for hand pollination:**

Conditions of the pollen of the donor

* Pollen from male varieties will be at its optimal fertility
* The pollen of the pollinator variety is extracted at the moment of maximum development of the flower, before the anther dehiscence. Open flowers at a growth stage of 61-62 on the Citrus BBCH phenological scale [Agust and al., 1997] will be randomly selected for pollen collection at least the day before pollination. Anthers are put in petri-dishes at room temperature with a dehydrator (e.g. a piece of paper) until they open.

Conditions of the female flowers:

* Flowers will be fully developed but not yet opened: one day before anthesis (stage 59 on the Citrus BBCH phenological scale [Agust and al., 1997]), flowers will be emasculated and bagged to avoid self and free pollination.
* Stigma of female varieties will be at its optimum stage of receptivity
* Trees will be at the phenologic state of full bloom

Agroclimatic conditions:

* Wet days are not suitable and the temperature should be above 20°

Methodology of hand pollination:

* Pollination should take place at the moment of maximum development of the flower.
* Quantity of pollen: to reach the saturation of the stigma, at least 100 grains of pollen
* Pollen will be applied by a brush
* After pollination, the pollinated flowers should be isolated from the environment with an individual mesh in order to avoid further pollination