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| International Union for the Protection of New Varieties of Plants |  |

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Partial revision of the Test Guidelines for Carrot

Document prepared by the Office of the Union

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 The purpose of this document is to present a proposal for a partial revision of the Test Guidelines for Carrot (document TG/49/8 Corr.) for inclusion of characteristics from the Table of Characteristics in the Technical Questionnaire.

 The background to the proposed partial revision of the Test Guidelines for Carrot (*Daucus carota* L.) is presented in document TWP/7/6 “Revision of Test Guidelines”.

 The TWV is invited to consider the inclusion of the following characteristics in the TQ (characteristics for inclusion indicated in highlight and underline):

|  |  |  |  |
| --- | --- | --- | --- |
| **Char. No.** | **(\*)** | **Characteristic Name** | **Comment** |
| 3 | (\*) | Leaf: length (including petiole) |  |
| 5 | (\*) | Leaf: intensity of green color |  |
| 6 | (\*) | Leaf: anthocyanin coloration of petiole |  |
| 7 | (\*) | Root: length |  |
| 8 | (\*) | Root: width |  |
| 9 | (\*) | Root: ratio length/width |  |
| 10 | (\*) | Root: shape in longitudinal section |  |
| 12 | (\*) | Root: shape of shoulder |  |
| 13 | (\*) | Root: tip (when fully developed) |  |
| 14 | (\*) | Root: external color |  |
| 15 |  | Excluding varieties with white external root color: Root: intensity of external color | Option “not applicable” added |
| 16 |  | Root: anthocyanin coloration of skin of shoulder |  |
| 19 | (\*) | Root: diameter of core relative to total diameter |  |
| 20 | (\*) | Root: color of core |  |
| 22 | (\*) | Root: color of cortex |  |
| 27 |  | Varieties with blunt tip only: Root: time of development of rounded tip | Option “not applicable” added |
| 28 |  | Root: time of coloration of tip in longitudinal section |  |
| 29 |  | Plant: tendency to bolting |  |
| 31 | (\*) | Plants: proportion of male sterile plants |  |
| 32 | (\*) | Plant: type of male sterility |  |

 The proposed additions to TQ 5 are presented in highlight and underline.

| TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: |
| --- | --- | --- |
|  |  |  |
| 5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds). |
|  | Characteristics | Example Varieties | Note |
| **5.1(3)** | Leaf: length (including petiole) |  |  |
|  | very short | Mokum, Mignon | 1[ ] |
|  | very short to short |  | 2[ ] |
|  | short | Amsterdam 2, Amsterdam 3 | 3[ ] |
|  | short to medium |  | 4[ ] |
|  | medium | Juwarot, Nantaise améliorée 2 | 5[ ] |
|  | medium to long |  | 6[ ] |
|  | long | Chantenay, Chantenay à cœur rouge 2 | 7[ ] |
|  | long to very long |  | 8[ ] |
|  | very long | De Colmar à cœur rouge 2, Rothild | 9[ ] |
| **5.2(5)** | Leaf: intensity of green color |  |  |
|  | very light |  | 1[ ] |
|  | very light to light |  | 2[ ] |
|  | light | Adelaide, Leonor | 3[ ] |
|  | light to medium |  | 4[ ] |
|  | medium | Amsterdam 2, Amsterdam 3 | 5[ ] |
|  | medium to dark |  | 6[ ] |
|  | dark | Rothild | 7[ ] |
|  | dark to very dark |  | 8[ ] |
|  | very dark |  | 9[ ] |
| **5.3(6)** | Leaf: anthocyanin coloration of petiole |  |  |
|  | absent | Amsterdam 2 | 1[ ] |
|  | present | Tarenco | 9[ ] |
|  | Characteristics | Example Varieties | Note |
| **5.~~3~~ 4(7)** | Root: length |  |  |
|  | very short | Parijse Markt 2, Parijse Markt 3 | 1[ ] |
|  | very short to short |  | 2[ ] |
|  | short | Chantenay | 3[ ] |
|  | short to medium |  | 4[ ] |
|  | medium | Nantaise améliorée 2, Nantaise améliorée 3  | 5[ ] |
|  | medium to long |  | 6[ ] |
|  | long | Berlikumer 2, Berlikumer 3 | 7[ ] |
|  | long to very long |  | 8[ ] |
|  | very long | Lange Stompe Winter | 9[ ] |
| **5.~~4~~ 5(8)** | Root: width |  |  |
|  | very narrow |  | 1[ ] |
|  | very narrow to narrow |  | 2[ ] |
|  | narrow | Amsterdam 2, Amsterdam 3 | 3[ ] |
|  | narrow to medium |  | 4[ ] |
|  | medium | Nantaise améliorée 2, Nantaise améliorée 3 | 5[ ] |
|  | medium to broad |  | 6[ ] |
|  | broad | De Colmar à cœur rouge 2, Parijse Markt 2, Parijse Markt 3 | 7[ ] |
|  | broad to very broad |  | 8[ ] |
|  | very broad |  | 9[ ] |
|  | Characteristics | Example Varieties | Note |
| **5.6(9)** | Root: ratio length/ width |  |  |
|  | very small | Parijse Markt 2, Parijse Markt 3, Parmex  | 1[ ] |
|  | very small to small |  | 2[ ] |
|  | small | Courte améliorée à forcer  | 3[ ] |
|  | small to medium |  | 4[ ] |
|  | medium | Chantenay | 5[ ] |
|  | medium to large |  | 6[ ] |
|  | large | Nantaise améliorée 2, Nantaise améliorée 3 | 7[ ] |
|  | large to very large |  | 8[ ] |
|  | very large | Amsterdam 2 | 9[ ] |
| **5.~~5~~ 7(10)** | **Root: shape in longitudinal section** |  |  |
|  | circular | Parijse Markt 2, Parijse Markt 3 | 1[ ] |
|  | obovate |  | 2[ ] |
|  | medium obtriangular | Chantenay, De Colmar à cœur rouge 2 | 3[ ] |
|  | narrow obtriangular | Imperator, De Colmar à cœur rouge 3 | 4[ ] |
|  | narrow obtriangular to narrow oblong | Maestro | 5[ ] |
|  | narrow oblong | Amsterdam 2, Berlikumer 2, Berlikumer 3, Nantaise améliorée 5, Touchon | 6[ ] |
| **5.~~6~~ 8(12)** | Root: shape of shoulder |  |  |
|  | flat | De Colmar à cœur rouge 2 | 1[ ] |
|  | flat to rounded | Parijse Markt 2 | 2[ ] |
|  | rounded |  | 3[ ] |
|  | rounded to conical |  | 4[ ] |
|  | conical | Touchon | 5[ ] |
| **5.~~7~~ 9(13)** | **Root: tip (when fully developed)** |  |  |
|  | blunt | Berlikumer 3 | 1[ ] |
|  | slightly pointed | Mello Yello | 2[ ] |
|  | strongly pointed | Allred, Orbit | 3[ ] |
|  | Characteristics | Example Varieties | Note |
| **5.~~8~~ 10(14)** | Root: external color |  |  |
|  | white | White Satin | 1[ ] |
|  | yellow | Mello Yello | 2[ ] |
|  | orange | Bingo, Goliath, Karotan, Pinocchio, Tancar | 3[ ] |
|  | pinkish red | Nutri-red | 4[ ] |
|  | red | Pulsor | 5[ ] |
|  | purple | Purple Haze | 6[ ] |
| **5.~~9~~ 11(15)** | Excluding varieties with white external root color: Root: intensity of external color |  |  |
|  | very light |  | 1[ ] |
|  | very light to light |  | 2[ ] |
|  | light | Bingo, Mello Yello, Tancar | 3[ ] |
|  | light to medium |  | 4[ ] |
|  | medium | Goliath, Nutri-red | 5[ ] |
|  | medium to dark |  | 6[ ] |
|  | dark | Karotan, Pinocchio,Purple Haze | 7[ ] |
|  | dark to very dark |  | 8[ ] |
|  | very dark |  | 9[ ] |
|  | not applicable |  | [   ] |
| **5.12(16)** | **Root: anthocyanin coloration of skin of shoulder** |  |  |
|  | absent | Trevor | 1[ ] |
|  | present | Touchon | 9[ ] |
|  | Characteristics | Example Varieties | Note |
| **5.13(19)** | **Root: diameter of core relative to total diameter** |  |  |
|  | very small | Amsterdam 2, Amsterdam 3, Tourino | 1[ ] |
|  | very small to small |  | 2[ ] |
|  | small | Nantaise améliorée 2, Nantaise améliorée 3 | 3[ ] |
|  | small to medium |  | 4[ ] |
|  | medium | Berlikumer 2, Berlikumer 3 | 5[ ] |
|  | medium to large |  | 6[ ] |
|  | large | De Colmar à cœur rouge 2 | 7[ ] |
|  | large to very large |  | 8[ ] |
|  | very large | Giganta | 9[ ] |
| **5.~~10~~ 14(20)** | Root: color of core |  |  |
|  | white | White Satin | 1[ ] |
|  | yellow | Jaune de Lobberich, Pariser Markt | 2[ ] |
|  | orange | Nantaise améliorée 2, Nantaise améliorée 3 | 3[ ] |
|  | pinkish red |  | 4[ ] |
|  | red | Nutri-red | 5[ ] |
|  | purple | Afghan purple, Black Deshi | 6[ ] |
| **5.15(22)** | Root: color of cortex |  |  |
|  | white | White Satin | 1[ ] |
|  | yellow | Mellow Yello | 2[ ] |
|  | orange | Allred, Carlo | 3[ ] |
|  | pinkish red |  | 4[ ] |
|  | red | Nutri-red | 5[ ] |
|  | purple | Afghan purple, Black Deshi | 6[ ] |
|  | Characteristics | Example Varieties | Note |
| **5.16(27)** | Varieties with blunt tip only: Root: time of development of rounded tip |  |  |
|  | very early |  | 1[ ] |
|  | very early to early |  | 2[ ] |
|  | early | Touchon | 3[ ] |
|  | early to medium |  | 4[ ] |
|  | medium | Nantaise améliorée 2, Nantaise améliorée 3, Tiana | 5[ ] |
|  | medium to late |  | 6[ ] |
|  | late | Bureau, Nantaise améliorée 7, Tancar | 7[ ] |
|  | late to very late |  | 8[ ] |
|  | very late |  | 9[ ] |
|  | not applicable |  | [   ] |
| **5.17(28)** | Root: time of coloration of tip in longitudinal section |  |  |
|  | very early | Parijse Markt 3 | 1[ ] |
|  | very early to early |  | 2[ ] |
|  | early | Amsterdam 2, Amsterdam 3 | 3[ ] |
|  | early to medium |  | 4[ ] |
|  | medium | Nantaise améliorée 2, Nantaise améliorée 3 | 5[ ] |
|  | medium to late |  | 6[ ] |
|  | late | De Colmar à cœur rouge 2, Touchon | 7[ ] |
|  | late to very late |  | 8[ ] |
|  | very late | Goliath | 9[ ] |
|  | Characteristics | Example Varieties | Note |
| **5.18(29)** | Plant: tendency to bolting |  |  |
|  | very weak |  | 1[ ] |
|  | very weak to weak |  | 2[ ] |
|  | weak | Molene, Tancar | 3[ ] |
|  | weak to medium |  | 4[ ] |
|  | medium | Nantaise améliorée 2, Nantaise améliorée 3 | 5[ ] |
|  | medium to strong |  | 6[ ] |
|  | strong | Muscade, Touchon | 7[ ] |
|  | strong to very strong |  | 8[ ] |
|  | very strong |  | 9[ ] |
| 5.~~11~~ 19(31) | Plants: proportion of male sterile plants |  |  |
|  | absent or very low | Nantaise améliorée 2, Touchon | 1[ ] |
|  | intermediate |  | 2[ ] |
|  | high | Nanco, Tino | 3[ ] |
| 5.~~12~~ 20(32) | Plant: type of male sterility |  |  |
|  | brown anther | Nanco | 1[ ] |
|  | petaloid anther | Tino | 2[ ] |

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