



TWV/30/20

ORIGINAL: English

DATE: June 26, 1996

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

TECHNICAL WORKING PARTY FOR VEGETABLES

Thirtieth Session

Brno, Czech Republic, July 8 to 12, 1996

STANDARDIZATION OF STATES OF EXPRESSIONS;
COLLECTION OF TERMS USED

Document prepared by experts from the Netherlands

**COMBINED TABLE OF CHARACTERISTICS OF TEST GUIDELINES FOR
 ASPARAGUS (TG/130/3), BRUSSEL SPROUTS (TG/54/6),
 CAULIFLOWER (TG/45/6), BROCCOLI (TG/151/3), CABBAGE (TG/48/6),
 PEPPER (TG/76/7), WATERMELON (TG/142/3), MELON (TG/104/4),
 CARROT (TG/49/6), LETTUCE (TG/13/7), TOMATO (TG/44/7),
 FRENCH BEAN (TG/12/8), PEAS (TG/7/9)**

Abscission

Fruit: a of peduncle 104/4 c30 1, 9	absent	1
Peduncle: a layer 44/7 c18 1, 9	present	9

Abscission

Fruit: ease of a of peduncle 104/4 c31 3, 5, 7	weak	3
	medium	5
	strong	7

Apex

Terminal leaflet: a 12/8 c11 3, 5, 7	short acuminate	3
	medium acuminate	5
	long acuminate	7

Area

Seed: a of sec. color in relation to that of ground color 142/3 c54 3, 5, 7	small	3
	medium	5
	large	7

Aspect

Aspect of sprout column 54/6 c19 1, 2, 3	conical	1
	slightly conical	2
	cylindrical	3

Aspect

Calyx: a 76/7 c35 1, 2	non enveloping	1
	enveloping	2

Anther

Flower: a dehiscence at low temp. 142/3 c25 3, 5, 7	weak	3
	medium	5
	strong	7

Attitude

Spear: a of bracts 130/3 c13 1, 2, 3	adpressed	1
	slightly held out	2
	markedly held out	3

Attitude

Plant: a of outer leaves 48/6 c4 3, 5, 7	erect	3
Petiole: a 104/4 c12 3, 5, 7	semi-erect	5
Leaf: a 49/6 c2 3, 5, 7	horizontal	7

Attitude

Petiole: a 54/6 c10 3, 5, 7	semi-erect	3
Foliage: a 44/7 c7 3, 5, 7	horizontal	5
	drooping	7

Attitude

Leaf: a 45/6 c4 1, 3, 5	erect	1
Leaf: a 151/3 c3 3, 5, 7	semi-erect	3
	horizontal	5
	semi-pendulous	7

Attitude

Plant: a 76/7 c2 3, 5, 7	erect	3
Leaf: a at 10-12 leaf stage 13/7 c5 3, 5, 7	semi-erect	5
Leaf: a at harvest maturity 13/7 c15 3, 5, 7	prostrate	7

Attitude

Fruit: a 76/7 c15 3, 5, 7	erect	3
	horizontal	5
	drooping	7

Attitude

Flower: a of peduncle 76/7 c12 1, 2	erect	1
	non-erect	2

Attitude

Leaf: a of leaflets in relation to main axis 44/7 c13 1, 2, 3	upwards	1
	horizontal	2
	downwards	3

Axillary sprouting

A S 13/7 c35 1, 3, 5, 7, 9	absent or very weak	1
	weak	3
	medium	5
	strong	7
	very strong	7

Blistering

Leaf blade: b 54/6 c8 3, 5, 7	absent or very weak	1
Leaf blade: b 151/3 c12 1, 3, 5, 7, 9	weak	3
Leaf: b 45/6 c14 1, 3, 5, 7, 9	medium	5
Outer leaf: b 48/6 c8 1, 3, 5, 7, 9	strong	7
Head: b of cover leaf 48/6 c24 1, 3, 5, 7, 9	very strong	9
Leaf: b 76/7 c11 3, 5, 7		
Leaf blade: b 142/3 c19 3, 5, 7		
Leaf blade: b 104/4 c11 3, 5, 7		
Leaf: b 13/7 c25 1, 3, 5, 7, 9		

Bracts

Head: b 151/3 c25 1, 9	absent	1
	present	9

Capsaicin

Fruit: c in placenta 76/7 c36 1, 9	absent	1
	present	9

Closing

Head: closing of base 13/7 c12 3, 5, 7	weak	3
	medium	5
	strong	7

Color

Leaf: c (with wax) 45/6 c9 1, 2, 3	green	1
Leaf: c 151/3 c7 1, 2, 3	gray green	2
	blue green	3

Color

Leaf blade: c 54/6 c4 1, 2, 3	green	1
	blue green	2
	purple	3

Color

Sprout: c 54/6 c15 1, 2, 3, 4, 5	light green	1
	medium green	2
	dark green	3
	blue-green	4
	purple	5

Color

Plant: green c of foliage 130/3 c4 3, 5, 7	light	3
Leaf: green c 76/7 c10 3, 5, 7	medium	5
Seedling: green c of cotyledons 104/4 c3 3, 5, 7	dark	7
Leaf blade: green c 104/4 c6 3, 5, 7		
Leaf: green c 12/8 c7 1, 3, 5, 7, 9		

Color

Curd: c 45/6 c23 1, 2, 3, 4	whitish	1
	yellow	2
	orange	3
	green	4

Color

Pod: ground c 12/8 c21 1, 2, 3	yellow	1
	green	2
	violet	3

Color

Flower: c 45/6 c27 1, 2	white	1
Flower: c 151/3 c28 1, 2	yellow	2

Color

Flower: c of standard 12/8 c14 1, 2, 3	white	1
Flower: c of wing 12/8 c15 1, 2, 3	pink	2
	violet	3

Color

Grain: color of immature seed 12/8 c16 1, 2	white	1
	light green	2

Color

Seed: c 13/7 c1 1, 2, 3	white	1
	yellow	2
	black	3

Color

Head: c 151/3 c18 1, 2, 3, 4, 5	cream	1
	green	2
	gray green	3
	blue green	4
	violet	5

Color

Outer leaf: c (with wax) 48/6 c11 1, 2, 3, 4, 5	yellow green	1
Head: c of cover leaf 48/6 c26 1, 2, 3, 4, 5	green	2
Leaf blade: c 142 c 15 1, 2, 3	gray green	3
	blue green	4
	violet	5

Color

Pod: c 7/9 c55 1, 2, 3, 4	yellow	1
	green	2
	blue-green	3
	purple	4

Color

Foliage: c 7/9 c16 1, 2, 3	yellow green	1
	green	2
	blue green	3

Color

Head: internal c 48/6 c29 1, 2, 3, 4

whitish	1
yellowish	2
greenish	3
violet	4

Color

Fruit: c before maturity 76/7 c13 1, 2, 3, 4

greenish white	1
yellowish	2
green	3
purple	4

Color

Fruit: c at maturity 76/7 c23 1, 2, 3, 4

yellow	1
orange	2
red	3
brown	4

Color

Fruit: c at maturity 44/7 c36 1, 2, 3, 4

Fruit: c of flesh 44/7 c 37 1, 2, 3, 4

yellow	1
orange	2
pink	3
red	4

Color

Fruit: ground c of skin 142/3 c30 1, 2, 3

white	1
yellow	2
green	3

Color

Flower: c of standard 7/9 c41 1, 2, 3

white	1
white to cream	2
cream	3

Color

Flower: c 44/7 c17 1, 2

yellow	1
orange	2

Color

Fruit: ground c of skin before maturity 104/4

c15 1, 2, 3, 4

white	1
yellow	2
green	3
gray green	4

Color

Fruit: ground c of skin at maturity 104/4 c22 1, 2, 3, 4, 5	white	1
	yellow	2
	yellow-green	3
	green	4
	ochre	5

Color

Fruit: main c of flesh 142/3 c46 1, 2, 3, 4, 5	white	1
Carrot: external c 49/6 c14 1, 2, 3, 4	yellow	2
Carrot: c of core 49/6 c20 1, 2, 3, 4	orange	3
Carrot: c of the cortex 49/6 c22 1, 2, 3, 4	red	4
	purple	5

Color

Leaf: c of outer leaves 13/7 c17 1, 2, 3, 4, 5	yellowish	1
	green	2
	greet green	3
	bluish green	4
	reddish	5

Color

Seed: ground c of testa 142/3 c51 1, 2, 3, 4, 5, 6, 7	white	1
	cream	2
	green	3
	red	4
	red brown	5
	brown	6
	black	7

Color

Fruit: c of grooves 104/4 c44 1, 2, 3, 4	white	1
	yellow	2
	orange	3
	green	4

Color

Fruit: main c of flesh 104/4 c48 1, 2, 3	cream	1
Fruit: c of flesh of outer layer 104/4 c50 1, 2, 3	green	2
	orange	3

Color

Seed: c 104/4 c54 1, 2	ivory	1
	cream-yellow	2

Color

Seed: main c 12/8 c40 1, 2, 3, 4, 5, 6, 7, 8, 9	white	1
	green or greenish	2
	gray	3
	yellow	4

buff colored	5
brown	6
red	7
violet	8
black	9

Color

Seed: predominant secondary c 12/8
c41 1, 2, 3, 4, 5, 6, 7, 8

white	1
gray	2
yellow	3
buff colored	4
brown	5
red	6
violet	7
black	8

Color

Seed: c of cotyledon 7/9 c3 1, 2

green	1
yellow	2

Color

Seed: c of hilar ring 12/8 c44 1, 2

same color as seed	1
not same color as seed	2

Color

Pod: hue of secondary color 12/8 c24 1, 2

red	1
violet	2

Color

Seed: c of testa 7/9 c7 1, 2, 3

reddish brown	1
brown	2
brownish green	3

Color

Seed: secondary c of testa 142/3 c52 1, 9

Fruit: secondary c of skin 104/4 c24 1, 9

Pod: secondary c 12/8 c23 1, 9

Seed: black c of hilum 7/9 c6 1, 9

absent	1
present	9

Color

Carrot: c of core compared to c of cortex
49/6 c24 1, 2, 3

lighter	1
same	2
darker	3

Coloration

Carrot: green c of interior of top 49/6 c25 1, 3, 5, 7, 9	absent or very weak weak medium strong very strong	1 3 5 7 9
--	--	-----------------------

Coloration, anthocyanin

Stem: a c of apex 130/3 c8 1, 9	absent	1
Seedling: a c of hypocotyl 45/6 c1 1, 9	present	9
Curd: a c after harvest maturity 45/6 c26 1, 9		
Leaf blade: a c 151/3 c9 1, 9		
Petiole: a c 151/3 c13 1, 9		
Head: a c 151/3 c20 1, 9		
Seedling: a c of hypocotyl 76/7 c1 1, 9		
Leaf: a c of petiole 49/6 c6 1, 9		
Carrot: a c of skin of shoulder 49/6 c16 1, 9		
Seedling: a c 13/7 c2 1, 9		
Leaf: a c 13/7 c19 1, 9		
Seedling: a c of hypocotyl 44/7 c1 1, 9		
Plant: a c of hypocotyl 12/8 c1 1, 9		
Plant: a c 7/9 c9 1, 9		
Stem: a c of axil 7/9 c14 1, 9		
Pod: a c of suture 7/9 c58 1, 9		
Pod: spots of a c on outer wall 7/9 c59 1, 9		

Coloration, anthocyanin

Petiole: a c 54/6 c12 1, 3, 5, 7, 9	absent or very weak	1
Head: a c of cover leaf 48/6 c28 1, 3, 5, 7, 9	weak	3
Plant: a c at level of nodes 76/7 c7 1, 3, 5, 7, 9	medium	5
Stem: a c of upper third 44/7 c5 1, 3, 5, 7, 9	strong	7
	very strong	9

Coloration, anthocyanin

Flower: a c of wing 7/9 c38 1, 2, 3	pink blush	1
	pink	2
	reddish purple	3

Constrictions

Pod: c 12/8 c33 1, 3, 5, 7, 9	absent or very slight	1
	slight	3
	medium	5
	pronounced	7
	very pronounced	9

Content

Carrot: c of carotin 49/6 c31 3, 5, 7	low	3
Carrot: total c of sugar 49/6 c32 3, 5, 7	medium	5
Carrot: dry matter c 49/6 c34 3, 5, 7	high	7
Fruit: dry matter c 44/7 c40 3, 5, 7		

Cork formation

Fruit: c f 104/4 c40 1, 9	absent	1
	present	9

Cotyledons

Seed: dimpled c 7/9 c8 1, 9	absent	1
	present	9

Cover

Head: c 48/6 c23 1, 2, 3	uncovered	1
	partially covered	2
	covered	3

Covering

Curd: c by inner leaves 45/6 c18 1, 2, 3	not covered	1
	partly covered	2
	covered	3

Creasing

Fruit: c of surface 104/4 c39 1, 3, 5, 7, 9	absent or very weak	1
	weak	3
	medium	5
	strong	7
	very strong	9

Crimping

Leaf: c near main vein 45/6 c16 1, 3, 5, 7, 9	absent or very weak	1
Outer leaf: c 48/6 c10 3, 5, 7	weak	3
	medium	5
	strong	7
	very strong	9

Cross section

Leaf: c s of midrib at lower third 45/6 c11 1, 2, 3	strongly flattened	1
	weakly flattened	2
	rounded	3

Cross section

Fruit: c s 44/7 c24 1, 2	not round	1
	round	2

Cupping

Leaf blade: c 54/6 c7 1, 3, 5, 7, 9	strongly convex	1
	convex	3
	plane	5
	concave	7
	strongly concave	9

Curvature

Pod: c of beak 12/8 c31 1, 3, 5, 7, 9	absent or very weak	1
	weak	3
	medium	5
	strong	7
	very strong	9

Degree

Leaf: d of lobing 142/3 c17 3, 5, 7	weak	3
Head: d of overlapping 13/7 c9 1, 3, 5, 7, 9	medium	5
Leaf blade: d of undulation of margin 13/7 c27 1(abs. or very weak), 3, 5, 7, 9	strong	7
Seed: d of curvature 12/8 c36 3, 5, 7		
Leaflet: d of dentation 7/9 c27 1, 3, 5, 7, 9		
Pod: d of curvature 7/9 c52 1(abs to v weak), 3, 5, 7, 9		
Seed: d of wrinkling of cotyledon 7/9 c64 3, 5, 7		

Degree

Leaf blade: d of incisions on margin on apical part 13/7 c30 3, 5, 7	sparse	3
	medium	5
	dense	7

Degree

Pod: d of curvature 12/8 c27 1, 3, 5, 7, 9	absent or very slight	1
	slight	3
	medium	5
	strong	7
	very strong	9

Density

Plant: d of phylloclades 130/3 c3 3, 5, 7	sparse	3
Fruit: d of dots 104/4 c26 3, 5, 7	medium	5
Fruit: d of patches 104/4 c27 3, 5, 7	dense	7
Fruit: d of pattern of cork formation 104/4 c43 1, 3, 5, 7, 9		
Pod: d of flecks of secondary colors 12/8 c25 3, 5, 7		
Stipule: maximum d of flecking 7/9 c34 1, 3, 5, 7, 9		

Density

Head: d 48/6 c31 1, 3, 5, 7, 9	very loose	1
Head: d 13/7 c10 1, 3, 5, 7, 9	loose	3
	medium	5
	dense	7
	very dense	9

Dentation

Leaf blade: d of margin 151/3 c11 3, 5, 7	weak	3
Leaf blade: d of margin 104/4 c9 3, 5, 7	medium	5
	strong	7

Dentation

Leaflet: d 7/9 c26 1, 9	absent	1
	present	9

Depression

Seedling: d of nerves of cotyledon 142/3 c6 1, 9	absent	1
	present	9

Depression

Fruit: d of base 142/3 c35 3, 5, 7	shallow	3
Fruit: d at apex 142/3 c37 3, 5, 7	medium	5
	deep	7

Depression

Fruit: d at stalk end 44/7 c25 1, 3, 5, 7, 9	absent or very weak	1
	weak	3
	medium	5
	strong	7
	very strong	9

Depth

Fruit: d of stalk cavity 76/7 c27 3, 5, 7	nil or very shallow	1
Fruit: d of interloocular grooves 76/7 c29 1, 3, 5, 7, 9	shallow	3
	medium	5
Leaf blade: d of incision of margin of leaf of central 3rd of plant 142/3 c18 3, 5, 7	deep	7
	very deep	9
Fruit: d of grooves 104/4 c38 1(very shallow), 3, 5, 7, 9		
Leaf blade: d of incisions on margin on apical part 13/7 c29 3, 5, 7		

Development

Leaf blade: d of lobes 104/4 c7 3, 5, 7	weak	3
	medium	5
	strong	7

Diameter

Stem: d at ground level 130/3 c7 3, 5, 7	small	3
Curd: d 45/6 c20 3, 5, 7	medium	5
Plant: maximum d 48/6 c2 3, 5, 7	large	7
Head: d 48/6 c21 3, 5, 7		
Fruit: d 76/7 c17 1, 3, 5, 7, 9		
Carrot: d of core relative to total d 49/6 c19 1, 3, 5, 7, 9		
Plant: d 13/7 c7 1, 3, 5, 7, 9		

Diameter

Fruit: d 104/4 c18 1, 3, 5, 7, 9	narrow	3
	medium	5
	broad	7

Diameter

Spear: d of base of apex compared to remaining stem 130/3 c12 1, 2, 3	smaller	1
	equal	2
	larger	3

Distance

Leaflet: d from widest point to base 7/9 c25 3, 5, 7 short	3	
	medium	5
	long	7

Distribution

Leaf: d of blisters 45/6 c15 1, 2	at tip only	1
	on whole leaf	2

Distribution

Seed: type of d of secondary color of testa 142/3 c53 1, 2, 3	in dots only	1
	in patches only	2
	in dots and in patches	3

Distribution

Fruit: d of secondary colors of skin 104/4 c25 1, 2 in dots	1	
	in dots and in patches	2

Distribution

Leaf: a of anthocyanin 13/7 c21 1, 2	localized	1
	entire	2

Distribution

Leaf: kind of anthocyanin d 13/7 c22 1, 2, 3	diffused only	1
	in spots only	2
	diffused and in spots	3

Distribution

Seed: d of predominant secondary color
12/8 c42 1, 2, 3, 4

around hilum	1
in streaks	2
on half of grain	3
in patches	4

Division

Leaf: d 49/6 c4 1, 3, 5, 7, 9

very fine	1
fine	3
medium	5
coarse	7
very coarse	9

Division

Leaf blade: d 13/7 c6 1, 2

entire	1
lobed	2

Division

Leaf: d of blade 44/7 c10 1, 2

pinnate	1
bipinnate	2

Doming

Curd: d 45/6 c22 3, 5, 7

weak	3
medium	5
strong	7

Earliness

E in spec growing season 45/6 c28 1, 3, 5, 7, 9

very early	1
early	3
medium	5
late	7
very late	9

Expression

Sex e 130/3 c17 1, 2, 3, 4, 5

only plants with female flowers	1
plants with female and male flowers	2
plants with male flowers and plants with female flowers with styles	3
only plants with male flowers with styles	4
only plants with male flowers without style rudiments	5

Expression

Inflorescence: sex e 104/4 c14 1, 2	monoecious	1
	andromonoecious	2
Expression		
E of silvering 44/7 c41 1, 9	absent	1
	present	9
Extent		
Carrot: e of green color of skin of shoulder 49/6 c17 1, 3, 5, 7, 9	absent or very small	1
	small	3
Fruit: e of green shoulder 44/7 c33 3, 5, 7	medium	5
	large	7
	very large	9
Fasciation		
Stem: f 13/7 c33 1, 9	absent	1
Flower: f 44/7 c15 1, 9	present	9
Stem: f 7/9 c1 1, 9		
Firmness		
Head: f 151/3 c24 3, 5, 7	loose	3
	medium	5
	firm	7
Firmness		
Fruit: f of flesh	soft	3
	medium	5
	firm	7
Flecking		
Leaf blade: f 142/3 c21 1, 9	absent	1
Stipule: f 7/9 c33 1, 9	present	9
Flowers		
Plant: hermaphrodite f 142/3 c10 1, 9	absent	1
	present	9
Formation		
Plant: head f 13/7 c8 1, 2, 3	no head	1
	open head	2
	closed head (overlapping)	3
Glossiness		
Fruit: g 76/7 c25 3, 5, 7	weak	3
Leaf: g of upper side 13/7 c23 1(absent or very weak), 3, 5, 7, 9	medium	5
	strong	7

Green flush

Outer leaf: g f 48/6 c13 1, 9	absent	1
	present	9

Green shoulder

Fruit: g s 44/7 c32 1, 9	absent	1
	present	9

Grayish hue

Foliage: g h 7/9 c18 1, 9	absent	1
	present	9

Grooves

Fruit: g 104/4 c35 1, 9	absent	1
	present	9

Grooves

Fruit: g 142/3 c39 1, 2, 3, 4	absent	1
	at basal half	2
	at apical half	3
	on whole fruit	4

Growth type

Plant: g t 44/7 c2 1, 2	determinate	1
	indeterminate	2

Habit

Plant: growth h 142/3 c8 1, 2	bush	1
	runner	2

Height

Plant: h 54/6 c1 3, 5, 7	short	3
Plant: h 45/6 c2 1, 3, 5, 7, 9	medium	5
Plant: h 45/6 c19 3, 5, 7	tall	7
Plant: h 151/3 c2 1, 3, 5, 7, 9		
Plant: h 48/6 c1 1, 3, 5, 7, 9		
Plant: h 13/7 c32 3, 5, 7		
Plant: h 7/9 c10 1, 3, 5, 7, 9		

Height

Plant: h at flowering 49/6 c36 3, 5, 7	short	3
	medium	5
	high	7

Height

Plant: h 12/8 c4 3, 5, 7	low	3
	medium	5
	high	7

Incisions

Outer leaf: i of margin 48/6 c16 1, 9	absent	1
Leaf blade: presence of i on margin on apical part 13/7 c28 1, 9	present	9

Insertion

Carrot: i of crown 49/6 c12 3, 5, 7	raised	3
	flat	5
	depressed	7

Intensity

Spear: i of chlorophyll coloration of apex after emergence 130/3 c10 3, 5, 7	weak	3
Head: i of anthocyanin coloration 151/3 c21 1, 3, 5, 7, 9	medium	5
	strong	7
Fruit: i of marbling 142/3 c44 1, 3, 5, 7, 9		
Leaf: i of anthocyanin coloration 13/7 c20 1, 3, 5, 7, 9		
Stem: i of fasciation 13/7 c34 1, 3, 5, 7, 9		
Fruit: i of green color of shoulder 44/7 c34 3, 5, 7		
Flower: i of reddish purple coloration of wing 7/9 c39 3, 5, 7		
Flower: i of color of standard 7/9 c40 3, 5, 7		

Intensity

Leaf blade: i of color 54/6 c5 3, 5, 7	light	3
Leaf: i of color 45/6 c10 3, 5, 7	medium	5
Leaf blade: i of color 151/3 c8 3, 5, 7	dark	7
Head: i of color 151/3 c19 3, 5, 7		
Flower: i of yellow color 151/3 c29 3, 5, 7		
Outer leaf: i of color 48/6 c12 3, 5, 7		
Head: i of color of cover leaf 48/6 c27 3, 5, 7		
Head: i of internal color 48/6 c30 3, 5, 7		
Fruit: i of color before maturity 76/7 c14 3, 5, 7		
Fruit: i of color at maturity 76/7 c24 3, 5, 7		
Seedling: i of green color of cotyledon 142/3 c4 3, 5, 7		
Leaf blade: i of color 142/3 c16 3, 5, 7		
Fruit: i of green color of skin 142/3 c31 1, 2, 3, 4, 5, 6, 7, 8, 9		
Fruit: i of green color of stripes 142/3 c41 1, 3, 5, 7, 9		
Fruit: i of main color of flesh 142/3 c47 3, 5, 7		
Fruit: i of ground color before maturity 104/4 c16 3, 5, 7		
Fruit: i of ground color of skin at maturity 104/4 c 3, 5, 7		
Fruit: i of color of grooves 104/4 c45 3, 5, 7		
Fruit: i of main color of flesh 104/4 c49 3, 5, 7		
Leaf: i of green color 49/6 c5 3, 5, 7		
Carrot: i of external color 49/6 c15 3, 5, 7		
Carrot: i of color of core 49/6 c21 3, 5, 7		
Carrot: i of color of cortex 49/6 c23 3, 5, 7		
Leaf: i of color of outer leaves 13/7 c18 1, 3, 5, 7, 9		
Leaf: i of green color 44/7 c12 3, 5, 7		
Fruit: i of green color before maturity 44/7 c35 3, 5, 7		

Pod: i of ground color 12/8 c22 3, 5, 7

Foliage: i of color 7/9 c17 3, 5, 7

Pod: i of green color 7/9 c56 3, 5, 7

Pod: i of green color of immature seed 7/9 c61 3, 5, 7

Knobbling

Curd: c 45/6 c24 1, 3, 5, 7, 9	very fine	1
Head: k 151/3 c22 3, 5, 7	fine	3
	medium	5
	coarse	7
	very coarse	9

Leaflets

Leaf: l 7/9 c19 1, 9	absent	1
	present	9

Length

Stem: maximum l 130/3 c5 3, 5, 7	short	3
Stem: l up to 1st ramification 130/3 c6 3, 5, 7	medium	5
Spear: l of 1st bracts at base of pex 130/3 c14 3, 5, 7	long	7
Outer stem: l 45/6 c3 3, 5, 7		
Leaf: l 45/6 c5 1, 3, 5, 7, 9		
Leaf: l 151/3 c4 3, 5, 7		
Petiole: l 151/3 c14 1, 3, 5, 7, 9		
Head: l of branching at base 151/3 c15 1, 3, 5, 7, 9		
Plant: l of outer stem 48/6 c3 3, 5, 7		
Head: l 48/6 c20 3, 5, 7		
Head: l of interior stem 48/6 c33 3, 5, 7		
Plant: l of stem 76/7 c3 3, 5, 7		
Plant: l of internodes 76/7 c6 3, 5, 7		
Leaf: l of blade 76/7 c8 3, 5, 7		
Fruit: l 76/7 c16 1, 3, 5, 7, 9		
Stalk: l 76/7 c33 3, 5, 7		
Seedling: l of cotyledon 142/3 c7 3, 5, 7		
Plant: l of main stem 142/3 c9 3, 5, 7		
Leaf blade: l 142/3 c12 3, 5, 7		
Petiole: l 142/3 c22 3, 5, 7		
Fruit: l of peduncle 142/3 c32 3, 5, 7		
Seedling: hypocotyl l 104/4 c1 1, 3, 5, 7, 9		
Leaf blade: l of terminal lobe 104/4 c8 3, 5, 7		
Petiole: l 104/4 c13 3, 5, 7		
Fruit: l 104/4 c17 1, 3, 5, 7, 9		
Fruit: l of peduncle 104/4 c28 3, 5, 7		
Leaf: l 49/6 c3 1, 3, 5, 7, 9		
Carrot: l 49/6 c7 1, 3, 5, 7, 9		
Stem: l of internode between 1st and 4th inflorescence 44/7 c6 3, 5, 7		
Leaf: l 44/7 c8 3, 5, 7		
Pedicel: l 44/7 c19 3, 5, 7		

Pod: 1 12/8 c17 1, 3, 5, 7, 9

Pod: 1 of beak 12/8 c30 3, 5, 7

Stem: 1 7/9 c12 1, 3, 5, 7, 9

Leaflet: 1 7/9 c23 3, 5, 7

Stipule: 1 7/9 c31 3, 5, 7

Petiole: 1 7/9 c35 3, 5, 7

Flower: 1 of peduncle from stem to 1st flower 7/9 c47 3, 5, 7

Pod: 1 7/9 c48 1, 3, 5, 7, 9

Length

Petiole: 1 compared with blade 54/6 c11 3, 5, 7	shorter	3
	equal	5
	longer	7

Lobing

Leaf: 1 45/6 c8 1, 9	absent	1
	present	9

Location

Inflorescences: 1 12/8 c11 1, 2, 3	in foliage	1
	partly in foliage	2
	above foliage	3

Marbling

Fruit: m 142/3 c43 1, 9	absent	1
Seed: m of testa 7/9 c4 1, 9	present	9

Number

Plant: n of stems 130/3 c2 3, 5, 7	few	3
	medium	5
	many	7

Number

Plant: n of stems 151/3 c1 1, 2	one	1
	more than one	2

Number

Leaf: n of lobes 151/3 c6 1, 3, 5, 7, 9	absent or very few	1
Plant: n of nodes on main stem 104/4 c4 3, 5, 7	few	3
Plant: n of nodes on main stem 44/7 c3 3, 5, 7	medium	5
Stem: n of nodes 7/9 c13 1, 3, 5, 7, 9	many	7
Leaf: average maximum n of leaflets 7/9 c21 3, 5, 7	very many	9
Pod: n of ovules 7/9 c60 3, 5, 7		

Number

Plant: n of internodes between 1st flower and shortened internodes 76/6 c5 1, 2, 3	none	1
	one to three	2
	more than three	3

Number

Fruit: predominant n of locules 76/7 c30 1, 2, 3, 4	only two	1
	two and three	2
	three and four	3
	four and more	4

Number

Fruit: predominant n of locules 44/7 c31 1, 2, 3, 4	two	1
	two and three	2
	three and four	3
	more than four	4

Number

Seed: n of colors 12/8 c39 1, 2, 3	one	1
	two	2
	more than two	3

Number

Plant: maximum n of flowers per node 7/9 c37 1, 2, 3, 4, 5, 6, 7	one	1
	one to two	2
	two	3
	two to three	4
	three	5
	three to four	6
	more than four	7

Number

Plant: n of nodes up to 1st node with female flowers 142/3 c11 3, 5, 7	low	3
	medium	5
	high	7

Number

Fruit: n of seeds 142/3 c49 1, 3, 5, 7, 9	absent or very small	1
	small	3
	medium	5
	large	7
	very large	9

Opening

Sprout: o of outer leaves 54/6 c16 1, 3, 5, 7, 9	absent or very weak	1
	weak	3
	medium	5
	strong	7
	very strong	9

Parchment

Pod: p 7/9 c50 1, 2, 3	absent	1
	partially present	2
	entirely present	3

Pattern

Fruit: p of cork formation 104/4 c42 1, 2, 3	in small dots	1
	linear	2
	netted	3

Patches

Seed: p at hilum 142/3 c55 1, 9	absent	1
Seed: p at margin 142/3 c56 1, 9	present	9

Ploidy

Ploidy 130/3 c1 2, 3, 4	diploid	2
Ploidy 142/3 c1 2, 3, 4	triploid	3
	tetraploid	4

Position

Head: p of maximum diameter 48/6 c22 1, 2, 3	towards top	1
	at middle	2
	towards base	3

Position

Fruit: p of maximum width 104/4 c20 1, 2, 3	toward blossom end	1
	at center	2
	toward stem end	3

Profile

Outer leaf: p of upper side of blade 48/6 c7 1, 2, 3 concave		1
	plane	2
	convex	3

Profile

Leaf: surface p of outer leaves 13/7 c24 3, 5, 7	concave	3
	flat	5
	convex	7

Prominence

Plant: p of secondary heads 151/3 c27 3, 5, 7	weak	3
	medium	5
	strong	7

Proportion

Carrot: p of monosaccharides to total sugar content 49/6 c33 3, 5, 7	low	3
	medium	5
Plants: p of male sterile plants 49/6 c37 1(absent or very low), 3, 5, 7, 9	high	7

Protrusion

Carrot: p above soil 49/6 c26 1, 3, 5, 7, 9	absent or very little	1
	little	3
	medium	5
	strong	7
	very strong	9

Pubescence

Flower: p of style 44/7 c16 1, 9	absent	1
	present	9

Pubescence

Ovary: p 142/3 c27 3, 5, 7	weak	3
	medium	5
	strong	7

Ratio

Fruit: r length/diameter 76/7 c18 1, 3, 5, 7, 9	very small	1
Leaf blade: r length/width 142/3 c14 3, 5, 7	small	3
Fruit: r length/diam. 104/4 c19 1, 2, 3, 4, 5, 6, 7, 8, 9	medium	5
Carrot: r width/length 104/4 c9 1, 3, 5, 7, 9	large	7
Fruit: r length/width 44/7 c21 1, 3, 5, 7, 9	very large	9
Pod: r transverse width/median width 12/8 c20 3, 5, 7		

Reflexion

Leaf blade: r of margin 54/6 c9 1, 9	absent	1
Outer leaf: r of margin 48/6 c17 1, 9	present	9
Head: r of margin of cover leaf 48/6 c25 1, 9		

Resistance

R to race 1 of <i>Fus. oxysporum</i> f. sp. <i>conglutinans</i> 48/6 c36 1, 9	absent	1
R to tobamovirus 76/7 c39 1, 9	present	9
R to Potatovirus Y (PVY) 76/7 c40 1, 9		
R to <i>Phytophthora capsici</i> 76/7 c41 1, 9		
R to <i>Fus. oxysporum</i> f. sp. <i>niveum</i> 142/3 c59 1, 9		
R to race 0 of <i>Fus. oxysporum</i> f. sp. <i>melonis</i> 104/4 c57 1, 9		
R to race 1 of <i>Fus. oxysporum</i> f. sp. <i>melonis</i> 104/4 c58 1, 9		

R to race 2 of *Fus. oxysporum* f. sp. *melonis* 104/4 c59 1, 9
 R to race 1-2 of *Fus. oxysporum* f. sp. *melonis* 104/4 c60 1, 9
 R to colonization by *Aphis gossypii* 104/4 c61 1, 9
 R to race F of Zucchini Yellow Mosaic Virus (ZYMV) 104/4 c62 1, 9
 R to race GVA of Papaya Ringspot Virus (PRV) 104/4 c63 1, 9
 R to race E2 of Papaya Ringspot Virus (PRV) 104/4 c64 1, 9
 R to race E8 of Muskmelon Necrotic Spot Virus (MNSV) 104/4 c65 1, 9
 R to downy mildew (*Bremia lactucae*) 13/7 c38 1, 9
 R to lettuce mosaic virus (LMV) 13/7 c39 1, 9
 R to *Meloidogyne incognita* 44/7 c42 1, 9
 R to *Verticillium*, race 0 44/7 c43 1, 9
 R to *Fus. oxysporum* f. sp. *lycopersici* 44/7 c44 1, 9
 R to *Fus. oxysporum* f. sp. *radicis lycopersici* 44/7 c45 1, 9
 R to *Cladosporium fulvum* 44/7 c46 1, 9
 R to tobacco mosaic virus 44/7 c47 1, 9
 R to *Phytophthora infestans* 44/7 c48 1, 9
 R to *Pyrenochaeta lycopersici* 44/7 c49 1, 9
 R to *Stemphylium* spp. 44/7 c50 1, 9
 R to *Pseudomonas tomato* 44/7 c51 1, 9
 R to *Pseudomonas solanacearum* race 1 44/7 c52 1, 9
 R to Tomato Yellow Leaf Curl Virus 44/7 c53 1, 9
 R to Bean anthracnose 12/8 c46 1, 9
 R to Halo Blight 12/8 c48 1, 9
 R to Common Blight 12/8 c49 1, 9
 R to *Fus. oxysporum* f.sp. *pisi* 7/9 c66 1, 9
 R to *Erysiphe pisi* Syd. 7/9 c67 1, 9
 R to *Ascochyta pisi*, Race C 7/9 c68 1, 9
 R to *Pseudomonas syringae* pv. *pisi* 7/9 c69 1, 9
 R to Seedborne Mosaic Virus (SbmV) 7/9 c 70 1, 9
 R to Bean Yellow Mosaic Virus (BYMV) 7/9 c71 1, 9
 R to Pea Enation Mosaic Virus (PEMV) 7/9 c72 1, 9

Resistance

R to Bean Common Mosaic Virus (BCMV) 12/8 c47 1, 2, 3	not res. to mosaic, no blackroot development	1
	res. to mosaic, but developing blackroot	2
	res. to mosaic and no blackroot development	3

Ribbing

Fruit: r at stem end 44/7 c23 1, 3, 5, 7, 9	absent or very weak	1
	weak	3
	medium	5
	strong	7
	very strong	9

Ridging

Carrot: r of surface 49/6 c18 1, 3, 5, 7, 9

absent or very weak	1
weak	3
medium	5
strong	7
very strong	9

Rugosity

Leaf: r 12/8 c8 3, 5, 7

weak	3
medium	5
strong	7

Secondary heads

Head: s h 151/3 c26 1, 9

absent	1
present	9

Shape

Terminal leaflet: s 12/8 c10 1, 2, 3, 4, 5

triangular	1
triangular to circular	2
circular	3
circular to triangular	4
quadrangular	5

Shape

Pod: s of cross section 12/8 c19 1, 2, 3, 4

elliptic to ovate	1
cordate	2
circular	3
“eight shaped”	4

Shape

Pod: s of curvature 12/8 c28 1, 2, 3

concave	1
s-shaped	2
convex	3

Shape

Spear: s of apex 130/3 c11 3, 5, 7

narrow triangular	3
triangular	5
broad triangular	7

Shape

Sprout: s of longitudinal section 54/6 c14 1, 2, 3

narrow obovate	1
broad obovate	2
circular	3

Shape

Leaf: s 45/6 c7 3, 5, 7

Seedling: s of cotyledon 13/7 c4 3, 5, 7

narrow elliptic	3
elliptic	5
broad elliptic	7

Shape

Seedling: s of cotyledon 142/3 c2 1, 2, 3	narrow elliptic	1
Seed: s of cross section 104/4 c53 1, 2	elliptic	2
	broad elliptic	3

Shape

Leaf: s in cross section 45/6 c13 1, 2, 3	concave	1
	flat	2
	convex	3

Shape

Curd: s in longit. section 45/6 c21 1, 2, 3, 4, 5	circular	1
Head: s in longit. section 151/3 c17 1, 2, 3, 4	broad transverse	
	elliptic	2
	transverse elliptic	3
	narrow transverse	
	elliptic	4
	triangular	5

Shape

Seed: s of starch grain 7/9 c2 1, 2	simple	1
	compound	2

Shape

Seed: s 7/9 c1 1, 2, 3, 4, 5, 6	spherical	1
	ovoid	2
	cylindrical	3
	rhomboid	4
	triangular	5
	irregular	6

Shape

Carrot: s of longitudinal section 49/6 c10 1, 2, 3, 4 circular	circular	1
	obovate	2
	obtriangular	3
	narrowly oblong	4

Shape

Outer leaf: s of blade 48/6 c6 1, 2, 3, 4, 5	broad elliptic	1
	broad ovate	2
	circular	3
	transverse broad elliptic	4
	broad obovate	5

Shape

Head: s of longit. section 48/6 c18 1, 2, 3, 4, 5, 6, 7	transv. narrow elliptic	1
	transverse elliptic	2
	circular	3
	broad elliptic	4
	broad obovate	5
	broad ovate	6
	angular ovate	7

Shape

Head: s of base in longit. section 48/6 c19 1, 2, 3	raised	1
Flower: s of base of standard 7/9 c43 1, 3, 5, 7, 9	level	2
	arched	3

Shape

Head: s in longit. section 13/7 c13 1, 2, 3, 4	elliptic	1
	broad elliptic	2
	circular	3
	transverse elliptic	4

Shape

Leaf: s 13/7 c16 1, 2, 3, 4, 5, 6, 7, 8, 9	narrow elliptic	1
	elliptic	2
	broad elliptic	3
	circular	4
	transv. broad elliptic	5
	transverse elliptic	6
	obovate	7
	broad obtrullate	8
	triangular	9

Shape

Fruit: predominant s of longitudinal section 76/7 c19 1, 2, 3, 4, 5, 6, 7, 8, 9	flattened	1
	round	2
	heartshaped	3
	square	4
	rectangular	5
	trapezoid	6
	triangular	7
	narrow triangular	8
	hornshaped	9

Shape

Fruit: s in longit. section 44/7	flattened	1
c22 1, 2, 3, 4, 5, 6, 78, 9, 10	slightly flattened	2
	round	3
	rectangular	4
	cylindrical	5
	heart-shaped	6
	obovoid	7
	ovoid	8
	pear-shaped	9
	strongly pear-shaped	10

Shape

Fruit: s of longit. section 142/3 c29 1, 2, 3, 4	round	1
	broad elliptic	2
	elliptic	3
	cylindric	4

Shape

Seed: s of median cross-sect. 12/8 c37 1, 2, 3, 4, 5	flat	1
	narrow elliptic	2
	elliptic	3
	broad elliptic	4
	circular	5

Shape

Fruit: predominant s of cross section 76/7	elliptic	1
c20 1, 2, 3	angular	2
	circular	3

Shape

Fruit: s of basal part 142/3 c34 1, 2, 3, 4, 5	flat	1
Fruit: s of apical part 142/3 c36 1, 2, 3, 4, 5	flat to rounded	2
Carrot: s of shoulder 49/6 c11 1, 2, 3, 4, 5	rounded	3
	rounded to conical	4
	conical	5

Shape

Fruit: s of base 104/4 c32 1, 2, 3	pointed	1
Fruit: s of apex 104/4 c33 1, 2, 3	rounded	2
	flattened	3

Shape

Pod: s of distal part 7/9 1, 2	pointed	1
	blunt	2

Shape

Fruit: s at blossom end 44/7 c28 3, 4, 5, 6, 7	indented	3
	indented to flat	4
	flat	5
	flat to pointed	6
	pointed	7

Shape

Seed: s of median longit. section 12/8 c35 1, 2, 3, 4 circular		1
	circular to elliptic	2
	elliptic	3
	kidney-shaped	4

Shape

Seed: s at hilum end 104/4 c53 1, 2	sharply pointed	1
	bluntly pointed	2

Shape

Pod: s of distal part 12/8 c29 1, 2, 3	acute	1
	acute to truncate	2
	truncate	3

Shape

Fruit: s of apex 76/7 c28 3, 5, 7	acute	3
	rounded	5
	depressed	7

Shape

Flower: s of apex of petal of female flower 142/3 c24 3, 5, 7	acute	3
	rounded	5
	obtuse	7

Shape

Flower: s of apex of upper sepal 7/9 c46 1, 2, 3	accuminate	1
	pointed	2
	rounded	3

Shape

Fruit: s of longit. section 104/4 c21 1, 2, 3, 4, 5	oblate	1
	circular	2
	ovate	3
	elliptic	4
	elongated	5

Shortened internodes

Plant: s i 76/7 c4 1, 9	absent	1
	present	9

Situation

Fruit: s of pericarp at basal part 76/7	absent or very weak	1
c21 1, 3, 5, 7, 9	weak	3
	medium	5
	strong	7
	very strong	9

Size

Leaf blade: s 54/6 c3 3, 5, 7	small	3
Sprout: s 54/6 c13 3, 5, 7	medium	5
Head: s 151/3 c16 1, 3, 5, 7, 9	large	7
Outer leaf: s 48/6 c5 3, 5, 7		
Outer leaves: s of blisters 48/6 c9 3, 5, 7		
Placenta: s 76/7 c32 3, 5, 7		
Seedling: s of cotyledon 142/3 c3 3, 5, 7		
Flower: s of petal 142/3 c23 3, 5, 7		
Ovary: s 142/3 c26 3, 5, 7		
Fruit: s of insertion of peduncle 142/3 c33 3, 5, 7		
Fruit: s of pistil scar 142/3 c38 3, 5, 7		
Seed: s 142/3 c50 1, 3, 5, 7, 9		
Seedling: s of cotyledons 104/4 c2 1, 3, 5, 7, 9		
Leaf blade: s 104/4 c5 3, 5, 7		
Fruit: s of pistil scar 104/4 c34 3, 5, 7		
Seed: s 104/4 c51 1, 3, 5, 7, 9		
Seedling: s of cotyledon 13/7 c3 3, 5, 7		
Head: s 13/7 c11 1, 3, 5, 7, 9		
Leaf: s of blisters 13/7 c26 3, 5, 7		
Fruit: s 44/7 c20 1, 3, 5, 7, 9		
Fruit: s of corky area around peduncle 44/7 c26 1, 3, 5, 7, 9		
Fruit: s of blossom scar 44/7 c27 1, 3, 5, 7, 9		
Fruit: s of core in cross section 44/7 c29 1, 3, 5, 7, 9		
Terminal leaflet: s 12/8 c9 3, 5, 7		
Flower: s of bract 12/8 c13 3, 5, 7		
Leaflet: s 7/9 c22 1, 3, 5, 7, 9		

Spacing

Sprouts: s 54/6 c17 3, 5, 7	narrow	3
	medium	5
	wide	7

Speed

Plant: s of growth 44/7 c4 3, 5, 7	slow	3
	medium	5
	fast	7

Speed

Plant: speed of climbing 12/8 c6 3, 5, 7	slow	3
	medium	5
	rapid	7

Spots

Seedling: s on cotyledon 142/3 c5 1, 9	absent	1
	present	9

Spots

Seed: violet or pink s on testa 7/9 c5 1, 2, 3	absent	1
	faint	2
	intense	3

Stalk cavity

Fruit: s c 76/7 c26 1, 9	absent	1
	present	9

Start

Start of harvest maturity 54/6 c18 1, 3, 5, 7, 9	very early	1
Plant: s of climbing 12/8 c5 3, 5, 7	early	3
	medium	5
	late	7
	very late	9

Stipule

S: 'rabbit eared' s 7/9 c29 1, 9	absent	1
	present	9

Stringiness

Pod: s 12/8 c26 1, 9	absent	1
	present	9

Strings

Pod: s of suture 7/9 c57 1, 9	absent	1
	present	9

Stripes

Fruit: s 142/3 c40 1, 9	absent	1
	present	9

Structure

Head: internal s 48/6 c32 3, 5, 7	fine	3
	medium	5
	coarse	7

Tendency

Plant: t to form a head 54/6 c2 1, 3, 5, 7, 9	absent to very weak	1
Plant: t to bolting 49/6 c35 3, 5, 7	weak	3
	medium	5
	strong	7
	very strong	9

Texture

Curd: t 45/6 c25 3, 5, 7	fine	3
Head: t 151/3 c23 1, 3, 5, 7, 9	medium	5
	coarse	7

Texture

Fruit: t of surface 76/7 c22 1, 2, 3	smooth	1
	slightly wrinkled	2
	strongly wrinkled	3

Texture

Pod: t of surface 12/8 c32 3, 5, 7	smooth	3
	medium rough	5
	rough	7

Thickened wall

Pod: t w 7/9 1, 9	absent	1
	present	9

Thickness

Fruit: t of flesh 76/7 c31 3, 5, 7	thin	3
Stalk: t 76/7 c334 3, 5, 7	medium	5
Fruit: t outer layer of pericarp 142/3 c45 3, 5, 7	thick	7
Fruit: t of peduncle 1cm from fruit 104/4 c29 3, 5, 7		
Fruit: t of cork layer 104/4 c41 1, 3, 5, 7, 9		
Leaf: t 13/7 c14 3, 5, 7		
Fruit: t of the pericarp 44/7 c30 3, 5, 7		

Time

t of beg. of emergence of spears 130/3 c9 3, 5, 7	early	3
t of beginning of flowering 130/3 c16 3, 5, 7	medium	5
t of harvest maturity 151/3 c30 1, 3, 5, 7, 9	late	7
t of beginning of flowering 151/3 c31 3, 5, 7		
t of harvest maturity 48/6 c34 (1), 3, 5, 7, (9)		
t of bursting of head after maturity 48/6 c35 3, 5, 7		
t of beginning of flowering 76/7 c37 3, 5, 7		
t of ripening 76/7 c38 3, 5, 7		
t of female flowering 142/3 c57 3, 5, 7		
t of maturity 142/3 c58 3, 5, 7		
t of flowering 104/4 c55 3, 5, 7		
t of ripening 104/4 c56 3, 5, 7		

Carrot: t of development of rounded tip 49/6 c28 3, 5, 7

Carrot: t of coloration of tip 49/6 c29 3, 5, 7

t of maturity 49/6 c30 1, 3, 5, 7, 9

t of harvest maturity 13/7 c36 3, 5, 7

t of beginning of bolting under long day conditions 13/7 c37 1, 3, 5, 7, 9

t of flowering 44/7 c38 3, 5, 7

t of maturity 44/7 c39 3, 5, 7

t of flowering 12/8 c45 1, 3, 5, 7, 9

t of flowering 7/9 c36 1, 3, 5, 7, 9

Seed: t of maturity 7/9 c62 1, 3, 5, 7, 9

Tip

Carrot: t 49/6 c13 1, 2, 3

blunt	1
slightly pointed	2
pointed	3

Torsion

Leaf: t of tip 45/6 c12 1, 3, 5, 7, 9

absent or very weak	1
weak	3
medium	5
strong	7
very strong	9

Type

Plant: t of male sterility 49/6 c38 1, 2

brown anthers	1
petaloid anthers	2

Type

Leaf: t 44/7 c11 1, 2, 3, 4

type 1	1
type 2	2
type 3	3
type 4	4

Type

Inflorescence: t 44/7 c14 1, 2, 3

generally uniparous	1
partly uniparous, partly multiparous	2
generally multiparous	3

Type

Plant: growth t 12/8 c2 1, 2

dwarf	1
climbing	2

Type

Plant: dwarf t 12/8 c3 1, 2

non-vining	1
vining	2

Type

Stem: t of anthocyanin coloration of axil 7/9	single ring	1
c15 1, 2	double ring	2

Type

Stipule: t of development 7/9 c28 1, 2	rudimentary	1
	well developed	2

Type

Pod: t of curvature 7/9 c52 1, 3, 5, 7, 9	absent to very weak	1
	weak	3
	medium	5
	strong	7
	very strong	9

Undulation

Leaf: u of margin 45/6 c17 1, 3, 5, 7, 9	absent or very weak	1
Leaf blade: u of margin 151/3 c10 1, 3, 5, 7, 9	weak	3
Outer leaf: u of margin 48/6 c15 1, 3, 5, 7, 9	medium	5
Leaf blade: u of margin 142/3 c20 3, 5, 7	strong	7
Leaf blade: u of margin 104/4 c10 3, 5, 7	very strong	9
Flower: intensity of u of standard 7/9 c44 1, 3, 5, 7, 9		

Veining

Seed: v 12/8 c43 3, 5, 7	weak	3
	medium	5
	strong	7

Venetion

Leaf blade: v 13/7 c31 1, 2	not flabellate	1
	flabellate	2

Waxiness

Leaf blade: w 54/6 c6 3, 5, 7	absent to very weak	1
Outer leaf: w 48/6 c14 1, 3, 5, 7, 9	weak	3
	medium	5
	strong	7
	very strong	8

Waxiness

Leaf: w of surface of upper leaflet 7/9 c20 1, 9	absent	1
Stipule: w of surface of upper layer 7/9 c30 1, 9	present	9

Weight

Fruit: w 142/3 c28 1, 3, 5, 7, 9	low	3
Seed: w 12/8 c34 1, 3, 5, 7, 9	medium	5
	high	7

Weight

Carrot: w 49/6 c27 3, 5, 7	small	3
	medium	5
	high	7

Weight

Seed: w 7/9 c65 1, 3, 5, 7, 9	small	3
	medium	5
	large	7

Width

Spear: w of 1st bracts at base of apex 130/3 c15 3, 5, 7	small	3
	medium	5
	wide	7

Width

Leaf: w 45/6 c6 1, 3, 5, 7, 9	very narrow	1
Leaf: w 151/3 c5 3, 5, 7	narrow	3
Leaf: w 76/7 c9 3, 5, 7	medium	5
Leaf blade: w 142/3 c13 3, 5, 7	broad	7
Fruit: w of stripes 142/33 c42 1, 3, 5, 7, 9	very broad	9
Fruit: maximum w between grooves 104/4 c36 3, 5, 7		
Fruit: w of grooves 104/4 c37 3, 5, 7		
Foliage: w of crown 49/6 c1 3, 5, 7		
Carrot: w 49/6 c8 3, 5, 7		
Leaf: w 44/7 c9 3, 5, 7		
Pod: median w 12/8 c18 3, 5, 7		
Seed: w in cross-section 12/8 c38 3, 5, 7		
Leaflet: w 7/9 c24 3, 5, 7		
Stipule: w 7/9 c32 3, 5, 7		
Flower: maximum w of standard 7/9 c42 3, 5, 7		
Flower: w of sepal 7/9 c45 3, 5, 7		
Pod: maximum w 7/9 c49 1, 3, 5, 7, 9		

Width

Fruit: maximum w of flesh in cross section 104/4 c46 3, 5, 7	thin	3
	medium	5
Fruit: maximum w of outer layer of flesh in cross section 104/4 c47 3, 5, 7	thick	7

Wrinkling

Seed: w of cotyledon 7/9 c63 1, 9	absent	1
	present	9

ANNEX

STATES OF EXPRESSIONS AND NOTES OF CHARACTERISTICS

Some remarks on the characteristics mentioned in TWV/30/20:

1. In some cases the character is mentioned as characteristic. In many cases this could have been avoided.

e.g. Apex: short acuminate etc. could be changed into Shape of apex;

Area: small, medium, large could be changed into size of area;

Aspect: Calyx aspect non enveloping (1), enveloping (2);

Might be improved to: Calyx: enveloping absent (1), present (9).

2. Color

37 scales of color were identified in the 13 guidelines.

In general scales like light green, green, dark green, gray green, blue green, etc., are avoided and replaced by two characteristics: color and intensity of color.

It could be investigated whether a more harmonized approach could be reached. In view of the high number of 'colors' used (31), one scale including all colors is not advised.

It could be studied however to create one color scale containing the primary colors used: white, yellow, green, brown, purple, blue, black, etc., followed by a characteristic indicating a secondary color component:

absent, whitish, yellowish, greenish etc., followed by a characteristic intensity of color.

For the more specific colors the TWO approach with RHS color chart numbers could be followed.

3. Cover/Covering

Slight differences in the wording of the expressions are to be avoided.

4. Degree

Differences in wording of the expressions weak/medium/strong, sparse/medium/dense, slight/medium/strong are to be avoided. Preferably weak/medium/strong(?)

5. Density

Two dimensional sparse/medium/dense and three dimensional loose/medium/dense seems the correct wording.

6. Depression

Used in two different ways weak/medium/strong and shallow/medium/deep, the latter can be improved into depth of depression.

7. Diameter

Two scales are used: small/medium/large and narrow/medium/broad, the latter seems the proper scale for width rather than for diameter.

8. Distribution/Division

Through the peculiarity of the species different scales exist.

9. Earliness

In most cases earliness has been replaced by time of harvest maturity.

10. Expression of silvering

As this characteristic is closely related to resistance characteristics, the order of the expression is very confusing. It might improve to say: Silvering: absent/present

11. Height

Three different scales are used short/medium/tall, short/medium/high and low/medium/high. Short/medium/tall seems preferable.

12. Intensity

Two scales are in use weak/medium/strong for various characteristics and light/medium/dark for colors. A stricter use of the latter scales for colors is advised.

13. Number

A number of scales are in use (9) standardization seems difficult as the species have different demands. e.g. one/two/more than two versus one/one and two/two etc.

14. Shape

33 different shape characteristics are included in the 13 guidelines.
Shape is used for the entire object, sections of the object or specific parts of the object.
Almost exclusively the expression numbers 1, 2, 3, 4, 5, etc., are used, rarely 3/5/7.
The general order from elliptic/round/transverse elliptic is not always applied.
The use of drawings for shape characteristics is crucial for the correct understanding specially by the breeders/applicants.

15. Speed

Two scales are in use slow/medium/fast and slow/medium/rapid.

16. Weight

Three different scales are used: low/medium/high, small/medium/high and small/medium/large. The first seems generally preferable.

17. Width

Two scales are used: narrow/medium/broad and thin/medium/thick. the first seems sufficient for all cases.

18. Cupping/Profile/Shape

Different wording to indicate similar situations with convex 3/plane 5/concave, concave 1/plane 2/convex 3, concave 3/flat 5/convex 7 and concave 1/flat 2/convex 3.

[End of document]