



INTRODUCTION OF UPOV TG FOR BITTER GOURD

Pham Thai Ha

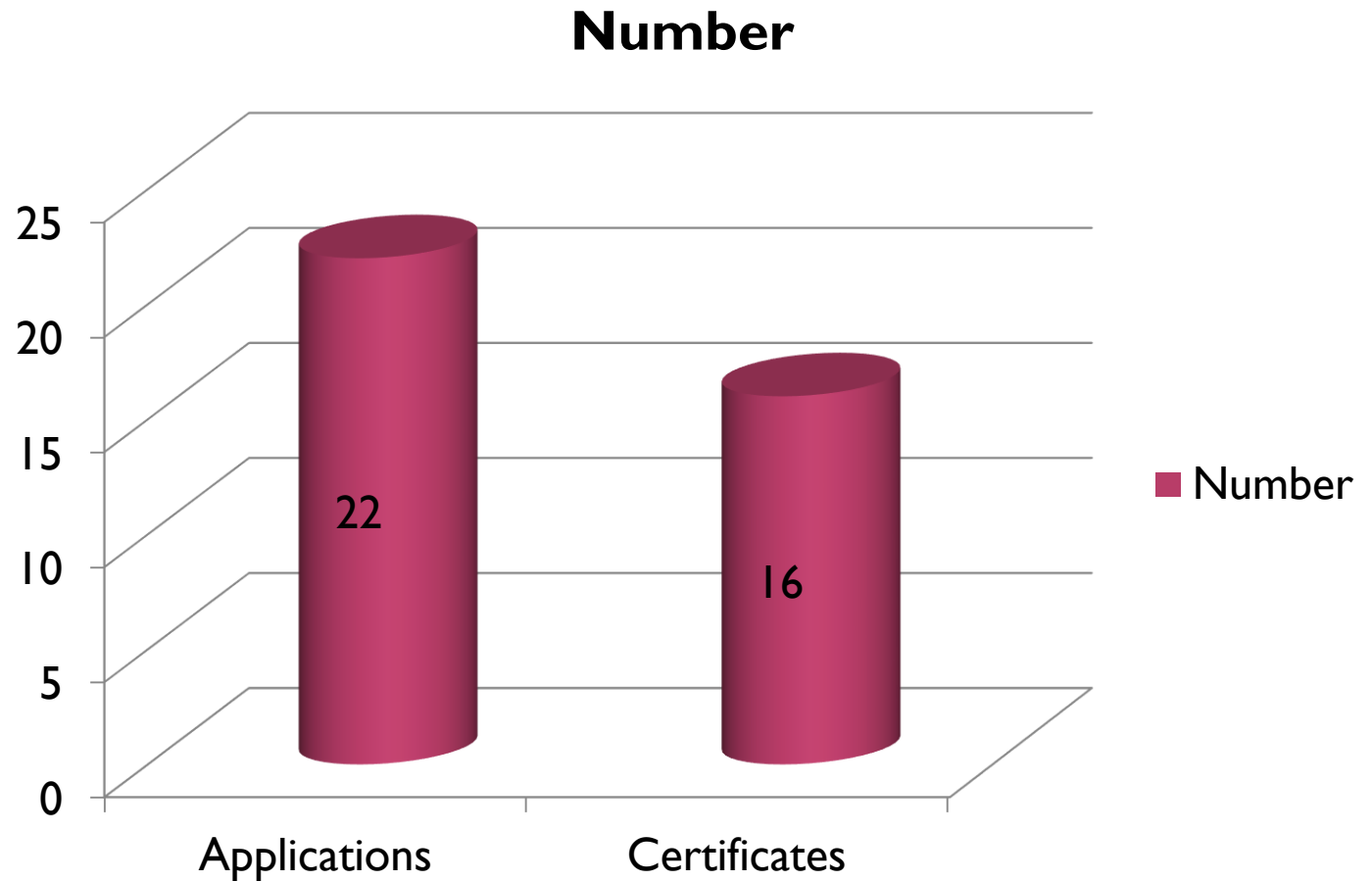
Officer

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Department of Crop Production, MARD

Ha Noi, Vietnam

Applications in VN



Some key requirements

- The minimum quantity of plant material: 1,500 seeds
- The minimum duration of tests should normally be two independent growing cycles
- Each test should be designed to result in a total of at least 40 plants, which should be divided between two or more replicates
- all observations on single plants should be made on 20 plants or parts taken from each of 20 plants and any other observations should be made on all plants in the test

Grouping characteristics

- (a) Leaf blade: number of lobes (characteristic 8)
- (b) Fruit: length (characteristic 14)
- (c) Fruit: diameter (characteristic 15)
- (d) Fruit: shape in longitudinal section (characteristic 16)
- (e) Fruit: color of skin (characteristic 17)
- (f) Fruit: wart: size (characteristic 21)

Table of Characteristics



- Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.
- QL: Qualitative characteristic
- QN: Quantitative characteristic
- PQ: Pseudo-qualitative characteristic
- MG: single measurement of a group of plants or parts of plants
- MS: measurement of a number of individual plants or parts of plants
- VG: visual assessment by a single observation of a group of plants or parts of plants

Table of Characteristics



- (a) Stem: should be observed when plant is fully developed.
- (b) Leaf (blade, petiole): All observations on the leaf should be made on fully developed leaves, from the 15th to 20th nodes.
- (c) Flower (flower, ovary, stigma): All observations on the flower should be made when the plant is fully developed.
- (d) Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).
- (e) Seed: All observations on the seed should be made on fully developed and dry seed, after washing and drying in the shade.



Table of Characteristics

1	Cotyledon: intensity of green color	Note
QN VG	light	3
	medium	5
	dark	7

Should be observed just before the development of the first true leaf





Table of Characteristics

2	Stem: length of internode of main stem (between 15th and 20th node)	Note
QN	short	3
VG/	medium	5
MS (a)	long	7

Stem: should be observed when plant is fully developed

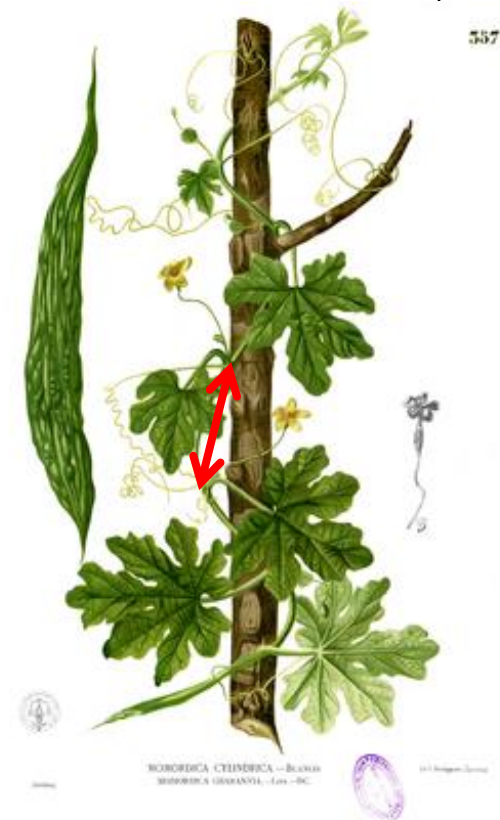




Table of Characteristics

3	Stem: thickness of main stem (as for 2)	Note
QN	thin	3
VG/MS	medium	5
(a)	thick	7

4	Stem: number of side shoots	Note
QN	few	3
VG	medium	5
(a)	many	7

Stem: should be observed when plant is fully developed



Table of Characteristics

5	Leaf blade: size	Note
QN VG (b)	small	3
	medium	5
	large	7

Leaf (blade, petiole):
All observations on
the leaf should be
made on fully
developed leaves,
from the 15th to 20th
nodes





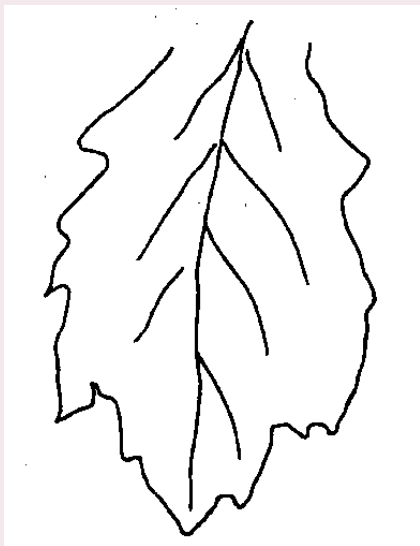
Table of Characteristics

6	Leaf blade: intensity of green color	Note
QN	light	1
VG	medium	3
(b)	dark	5



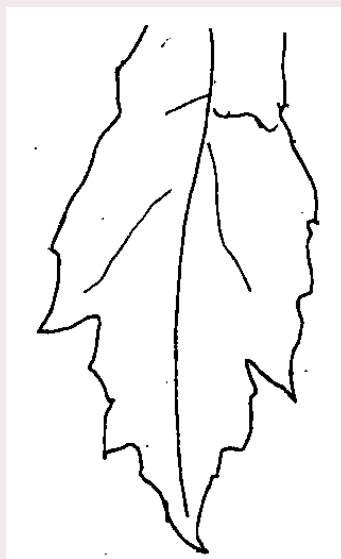
Table of Characteristics

7	Leaf blade: ratio length/width lobe	Note
QN	small	1
VG	medium	2
(b)	large	3



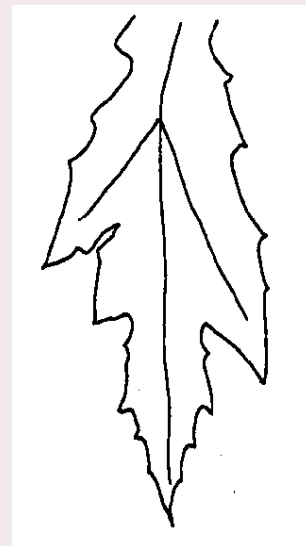
1

small



2

medium



3

large



Table of Characteristics

8 (*)	Leaf blade: number of lobes	Note
QN MS (b)	five lobes	1
	seven lobes	2
	nine lobes	3



Leaf (blade, petiole): All observations on the leaf should be made on fully developed leaves, from the 15th to 20th nodes





Table of Characteristics

9	Leaf blade: depth of lobing	Note
QN	shallow	3
VG	medium	5
(b)	deep	7

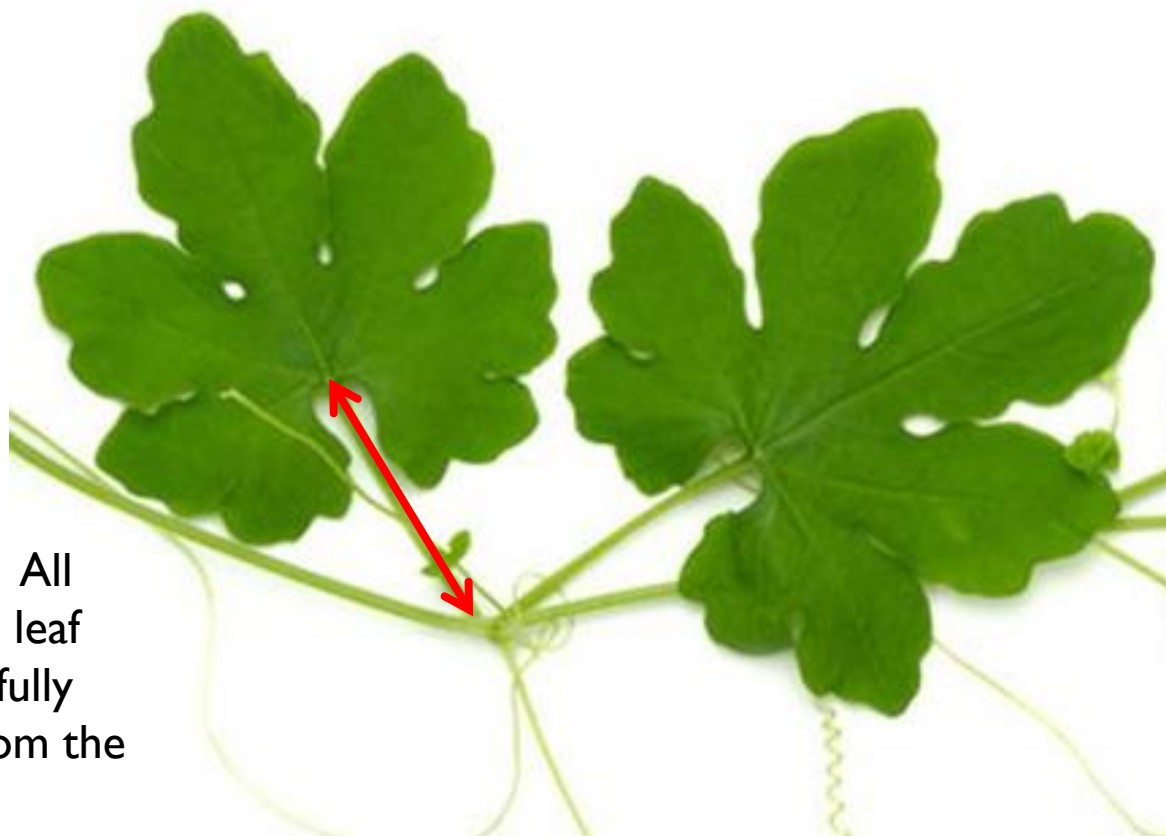


Leaf (blade, petiole): All observations on the leaf should be made on fully developed leaves, from the 15th to 20th nodes



Table of Characteristics

10	Petiole: length	Note
QN	short	3
VG/MS	medium	5
(b)	long	7



Leaf (blade, petiole): All observations on the leaf should be made on fully developed leaves, from the 15th to 20th nodes



Table of Characteristics

11	Plant: number of nodes up to node with 1st female flower	Note
QN MS (c)	few	3
	medium	5
	many	7

Flower (flower, ovary, stigma): All observations on the flower should be made when the plant is fully developed

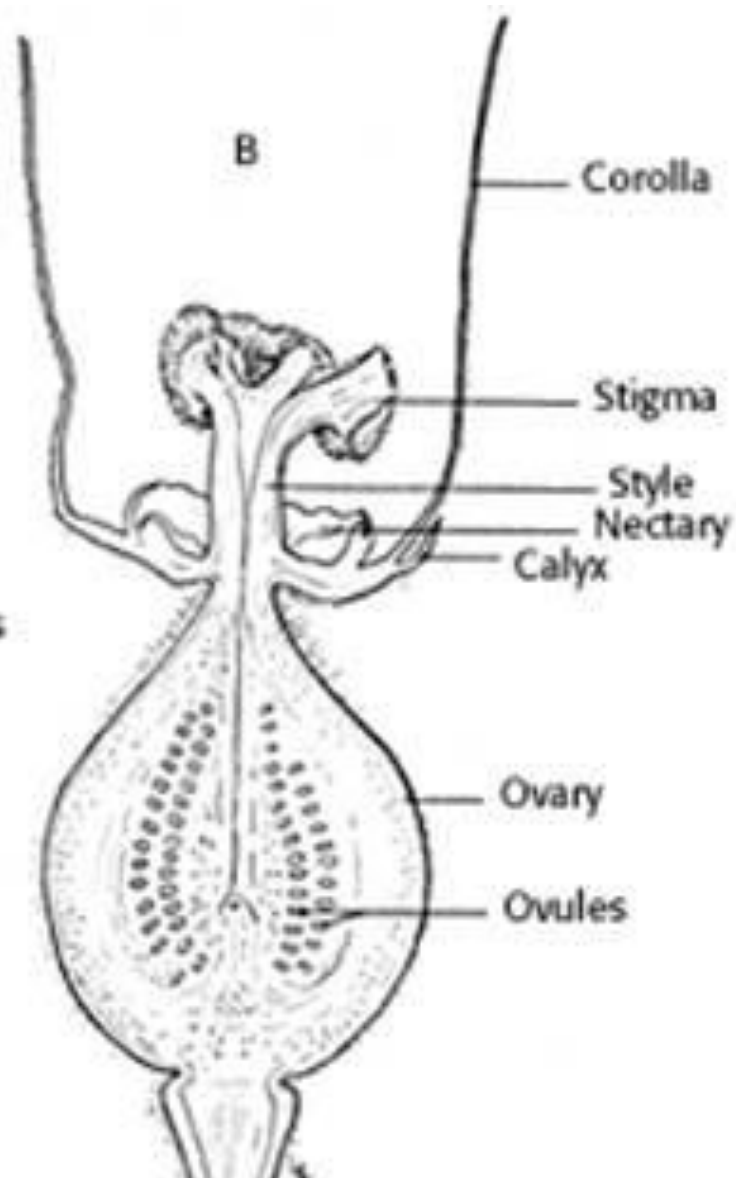
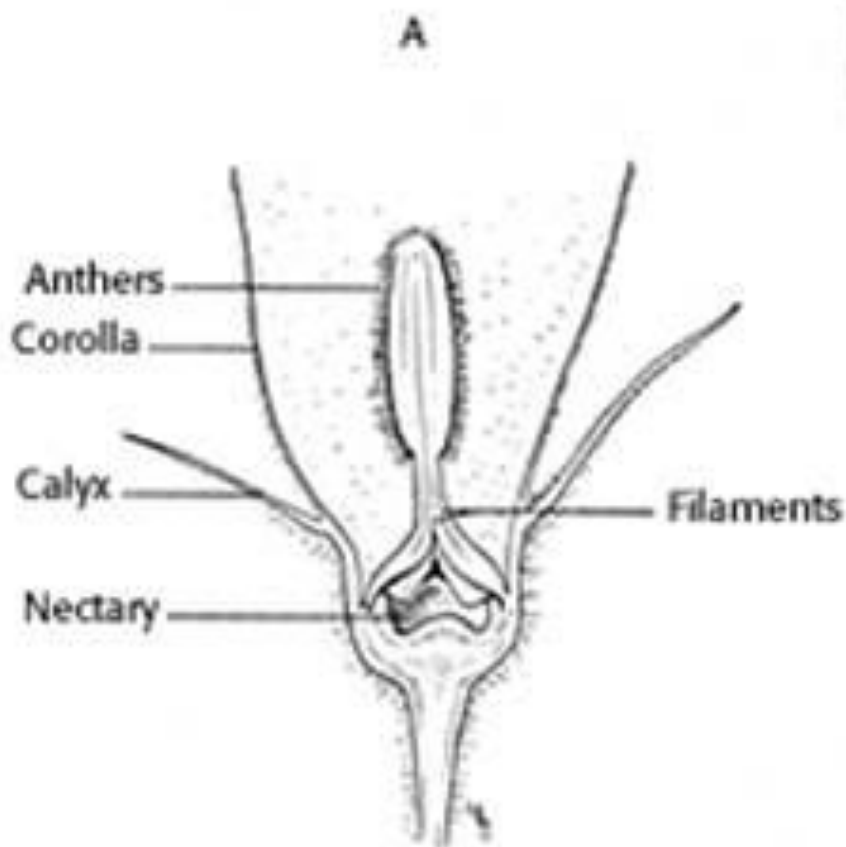




Table of Characteristics

12	Ovary: length	Note
QN VG/MS (c)	short	3
	medium	5
	long	7

Flower (flower, ovary, stigma): All observations on the flower should be made when the plant is fully developed





Table of Characteristics

13 (*)	Stigma : intensity of green color	Note
QN	light	3
VG	medium	5
(c)	dark	7

Flower (flower, ovary, stigma): All observations on the flower should be made when the plant is fully developed





Table of Characteristics

14 (*)	Fruit : length	Note
QN VG/MS (d)	short	3
	medium	5
	long	7

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).





Table of Characteristics

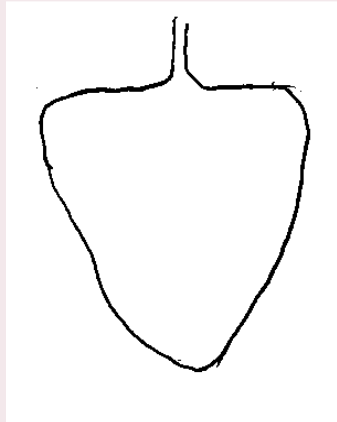
15 (*)	Fruit: diameter	Note
QN VG/MS (d)	small	3
	medium	5
	large	7

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).



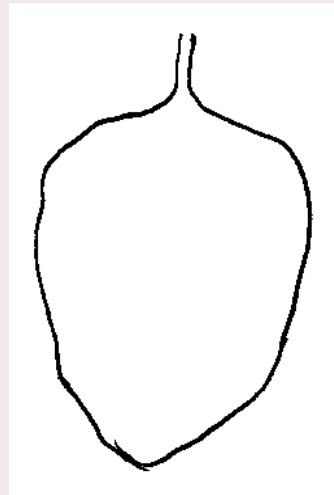
Table of Characteristics

16 (*)(+)	Fruit: shape in longitudinal section	Note
PQ VG (d)	triangular	1
	ovate	2
	spindle-shaped	3
	oblong	4



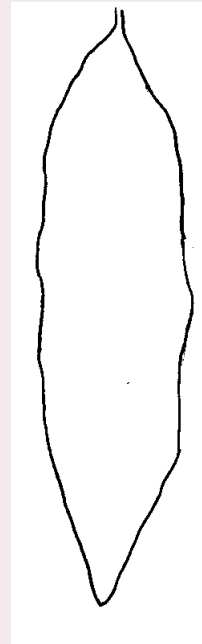
1

triangular



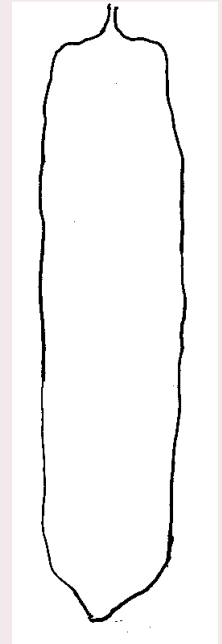
2

ovate



3

spindle-shaped



4

oblong



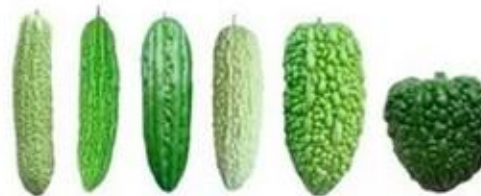
Table of Characteristics

17 (*)	Fruit: color of skin	Note
PQ VG (d)	white	1
	light green	2
	medium green	3
	dark green	4

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).



Thailand types



China types



Okinawa type



Vietnam types



Taiwan types



Philippine types



Indonesia types

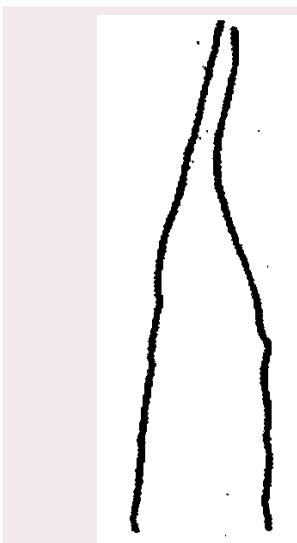


South Asian types

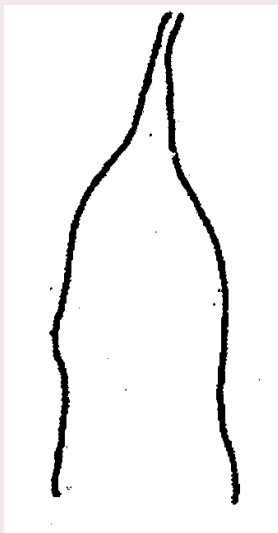


Table of Characteristics

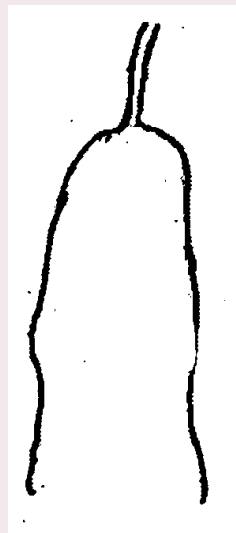
18 (*)(+)	Fruit: shape of base	Note
PQ VG (d)	acute	1
	obtuse	2
	rounded	3
	flattened	4



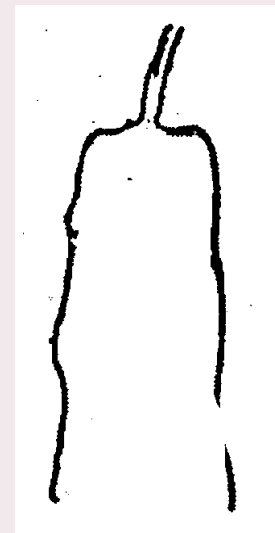
1



2



3



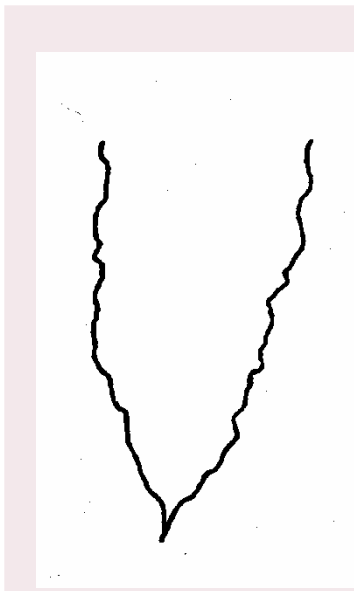
4

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).

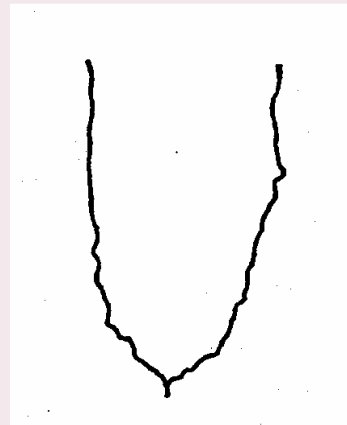


Table of Characteristics

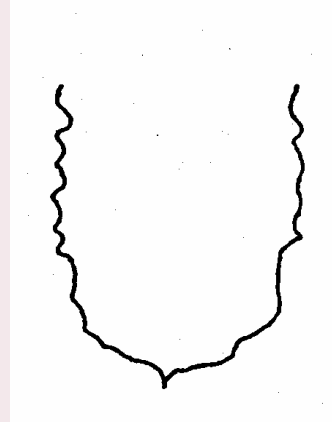
19 (*)(+)	Fruit: shape of apex	Note
PQ VG (d)	acute	1
	obtuse	2
	rounded	3
	flattened	3



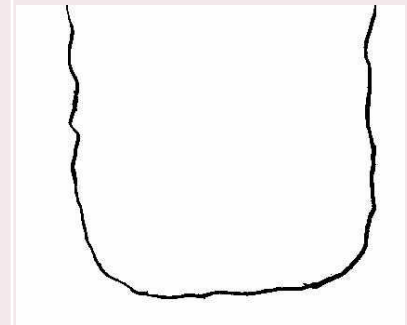
1



2



3



4

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).



Table of Characteristics

20 (+)	Fruit: number of warts	Note
QN VG/MS (d)	few	3
	medium	5
	many	7

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).





Table of Characteristics

21 (*)(+)	Wart: size	Note
QN	small	3
VG	medium	5
(d)	large	7

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).

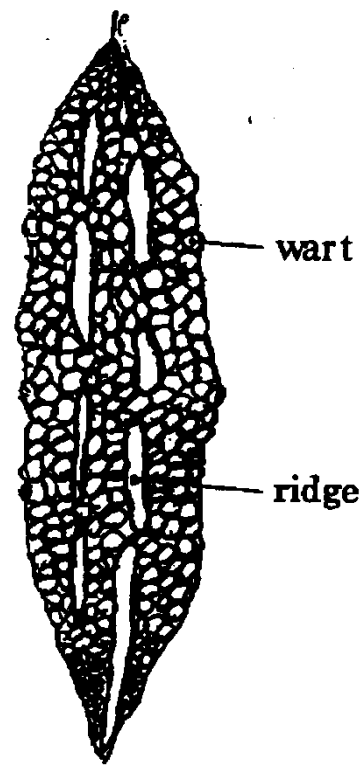




Table of Characteristics

22 (*)(+)	Wart: shape of top	Note
PQ VG (d)	acute	1
	obtuse	2
	rounded	3

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).





Table of Characteristics

23	Wart: presence of spines	Note
QL VG (d)	absent	1
	present	9

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).



Table of Characteristics

24 (*)(+)	Fruit: length of ridge	Note
QN VG/MS (d)	short	3
	medium	5
	long	7

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).

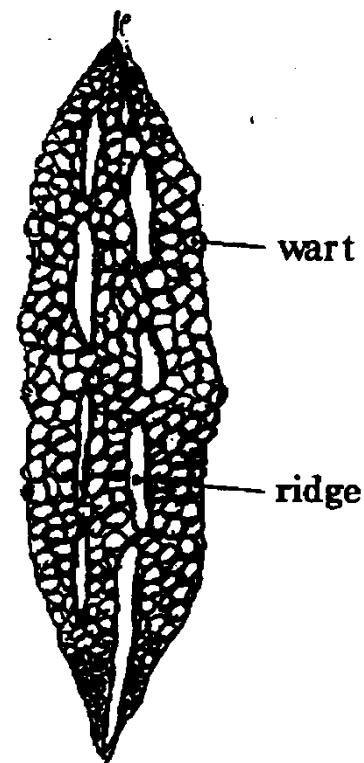




Table of Characteristics

25 (*)(+)	Fruit: color of skin at ripe stage	Note
PQ VG	yellow	1
	orange	2
	reddish orange	3

Observations should be made when the fruit left on the plant has turned completely yellow, orange or reddish orange





Table of Characteristics

26 (+)	Fruit: bitterness	Note
QL MG (d)	absent	1
	present	9

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).



Table of Characteristics

27 (+)	Fruit: intensity of bitterness	Note
QN	weak	3
MG	medium	5
(d)	strong	7

The bitterness of the fruit should be observed by tasting the flesh of the middle part of the fruit at harvest maturity

Fruit: All observations on the fruit should be made approximately 20 days after flowering (harvest maturity stage).



Table of Characteristics

28	Seed: size	Note
QN VG (e)	small	3
	medium	5
	large	7

Seed: All observations on the seed should be made on fully developed and dry seed, after washing and drying in the shade





Table of Characteristics

29	Seed: intensity of brown color of testa	Note
QN	light	3
VG	medium	5
(e)	dark	7

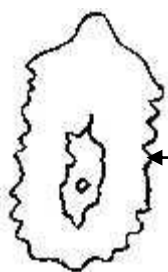
Seed: All observations on the seed should be made on fully developed and dry seed, after washing and drying in the shade





Table of Characteristics

30 (+)	Seed: indentation of edge	Note
QN	small	3
VG	medium	5
(e)	large	7



indentation of edge

Seed: All observations on the seed should be made on fully developed and dry seed, after washing and drying in the shade



3



5



7



Table of Characteristics

31 (+)	Time of physiological maturity	Note
QN VG	early	3
	medium	5
	late	7

The time of physiological maturity is when the fruit is fully developed



**THANK YOU FOR
YOUR ATTENTION**