

MELON (*Cucumis melo* L.) DESCRIPTORS

III CHARACTERIZATION AND EVALUATION DESCRIPTORS

Melon genetic resources evaluation methodology:

For all quantitative descriptors (metric traits), record the average of at least five measurements per individual accession, unless otherwise specified. If the characterization is combined with multiplication, at least 25 plants per accession should be planted. Characterization descriptors should be evaluated in three year period.

Each accession has to be characterized separately. Most of the observations should be made at maximum vegetative growth state (at 50% flowering), unless otherwise specified.

For accessions exhibiting variability for a descriptor, each type should be recorded along with a frequency (% of total). For example: Accession A may have 50% globular fruit, 35% elongate fruit, and 15% scallop fruit. This same accession may also have 70% smooth, and 30% netted fruit. To make the colour recording simple, only the main colours are listed. If colour charts are used, specify in descriptor.

Characterization of testing location:

- a. Country of characterization
- b. Institute name and address
- c. Institute site (latitude, longitude, elevation)
- d. Planting date
- e. Harvest date
- f. Plot size
- g. Number of plants per plot
- h. Number of evaluated plants
- i. Place of evaluation – field, greenhouse u.s.w.
- j. Number of replications
- k. Fertilizer (types, doses)
- l. Plant protection

ENVIRONMENT CHARACTERISTIC

- m. Soil type
- n. Relief
- o. Soil pH
- p. Soil organic matter content
- q. Soil texture
- r. Temperature range (growing period mean, maximum, minimum)
- s. Precipitation (sum in growing period)
- t. Frost (date and lowest temperature of most recent frost)

Descript or code	Number of trait in other descriptors	Descriptor Scale (score)	Reference values	Remarks
III/1	Hypocotyl length			
	¹ IPGRI 7.1.3. ² UPOV 1	3- short 5- medium 7 - long		³ N=20, first true leaf opened
III/2	Size of cotyledons			
	UPOV 2	1 – very small 5 – medium		

		9 –very large		
III/3	Cotyledon ratio			
	¹ IPGRI 7.1.6.			N=20
III/4	Cotyledon bitterness			
	¹ IPGRI 7.1.7	0- absent 1- present		
III/5	Cotyledon colour			
	UPOV 3	1 – light green 2- green 3- dark green		
III/6	Seedling vigour			
	¹ IPGRI 7.1.8.	3 – poor 5 – intermediate 7- vigorous		N=20 20 days after emergence
III/7	Plant growth habit			
	IPGRI 7.1.11.	1 – compact 2 – dwarf 3 – determinant 4 – indeterminant 5 – multilateral 99 – other	Internode length 0.5 to 2.5 cm Internode length 4 – 6 cm, plant rarely exceeds 1 m Ends of branches terminate in cluster of flowers or leaves Branches continue to grow through season Many branches	At the beginning of the flowering period
III/8	Plant size			
	IPGRI 7.1.12	3 – small 5 –intermediate 7 - large	< 1 m ³ 1 - 3 m ³ > 3 m ³	
III/9	Number of nodes			
	IPGRI 7.2.1. UPOV 4	3 – few 5 – medium 7 -many		On the main branch including 1 st tendrill
III/10	Internode length			
	IPGRI 7.2.2.	1 – very short 2 – short 3 – short – intermediate 4 – intermediate 5 - long	Approx. 1cm Approx. 5 cm 5 cm as a young plant, then intermediate Approx. 10 cm Approx. 15 cm	Internode length of the 10-15 th node on the main vine
III/11	Number of nodes to the first fruit			
	IPGRI 7.2.3.		Count the total number of nodes to the 1 st fruit on the main barnch	
III/12	Plant branches			
	IPGRI		Number of flowering branches from each	

	7.3.1.		rootstock	
III/13	Leaf blade size			
	UPOV 5	1- small 3 -medium 5 - large	Fully expanded leaf in the middle of plant	
III/14	Leaf shape			
	IPGRI 7.5.1.	1 –entire 2 – trilobite 3 – pentalobate 4 – 3-palmately lobed 5 – 5-plamately lobed	Figure 1, Appendix	Fully expanded leaf in the middle of plant FOTO
III/15	Leaf outline			
	IPGRI 7.5.2.	1 – broady ovate 3 – very broady ovate 99 – other		FOTO
III/16	Leaf base shape			
	IPGRI 7.5.3.	1 – cordate 2 – acute 99- other		FOTO
III/17	Length of the terminal lobe			
	UPOV 7	3- short 5- medium 7- long	Figure 2, Appendix	FOTO
III/18	Central leaf lobe shape			
	IPGRI 7.5.5.	1 – broadly ovate 2 – shallowly oblong 3 – narrowly oblong 4 – eloptic 99 – other		FOTO
III/19	Leaf margin dentation			
	IPGRI 7.5.7.	3 – weak 5 – intermediate 7 – strong		FOTO
III/20	Leaf margin undualtion			
	IPGRI 7.5.8.	3 – weak 5 – intermediate 7 – strong		FOTO
III/21	Leaf blade blistering			
	IPGRI 7.5.13. UPOV 9	3 – weak 5 – medioum 7 – strong		FOTO
III/22	Leaf colour			
	IPGRI 7.5.14. UPOV	1 – light green 2 – green 3 –dark green 4 – variable 99- other		N=10 FOTO
III/23	Leaf pubescence density – upper surface			
	IPGRI 7.5.9.	3 – sparse 5 – intermediate 7 - dense		FOTO

III/24	Leaf pubescence density – lower surface			
	IPGRI 7.5.10.	3 – sparse 5 – intermediate 7 - dense		FOTO
III/25	Leaf glossiness			
	IPGRI 7.5.15.	3 – glossy 5 – intermediate 7 - dull		
III/26	Leaf size			
	IPGRI 7.5.18.	1 – small 2 – intermediate 3 - large	Approx. < 40 cm ³ Approx. 40-70 cm ³ Approx. >70 cm ³	Average size of 10-15 th true leaves on the main vein.
III/27	Leaf ratio			
	IPGRI 7.5.19		N=10 Leaf length divided by width. Measured in the middle of the main vein.	
III/28	Leaf petiole length			
	IPGRI 7.5.20. UPOV	3 –short 5 - medium 7 - long	Approx. 3 cm Approx. 10 cm Approx. 15 cm	
III/29	Leaf petiole hairiness			
	IPGRI 7.5.21.	1 – sparsely hispid 2 – hispid 3 – hispidulous 4 –retorse strigose 5 –l anate 99 - other		
III/30	Leaf tendrils			
	IPGRI 7.5.24.	1 – short 2 – medium 3 – long 99 - other		
III/31	Leaf persistence			
	IPGRI 7.5.27.	3 – low 5 – moderate 7 - high		Recorded, when 80 % of fruits are matured
III/32	Leaf senescence			
	IPGRI 7.5.28.	3 – slight visual senescence 5– moderate senescence 7 – conspicuous concurrent senescence		Recorded, when 80 % of fruits are matured
III/33	Sex type			
	IPGRI 7.6.1. UPOV	1 – monoecious 2 – andromonoecious 3 – gynoeious 4 - male sterile 5 – female sterile		Observed on the main stem at 1 st fruit set

		99- other		
III/34	Ratio female/ male flowers			
	IPGRI 7.6.3	1 – only female 2 – mostly female 3 – equal female/male 4 – mostly male 5 – only male 99 - other		
III/35	Earliness of male flower			
	IPGRI 7.6.4.	3 – early 5 – intermediate 7 - late		
III/36	Earliness of female flower			
	IPGRI 7.6.5.	3 – early 5 – intermediate 7 - late		
III/37	Days to 50 % flowering			
	IPGRI 7.6.7.		Number of days from sowing to stage when 50 % of plants in one accession have begun to flower	
III/38	Peduncle length			
	IPGRI 7.6.8.		Measure length (cm) of randomly chosen peduncles at maturity FOTO	
III/39	Mean length of standard petal			
	IPGRI 7.6.12.		Measure on randomly selected, fully expanded flowers, cm	
III/40	Ovary pubescence length			
	IPGRI 7.6.16	1 – short 2 – intermediate 3 - long	< 1cm 1 - 5 cm > 5cm	N=10
III/41	Ovary pubescence type			
	IPGRI 7.6.17	1 – spreading hairs 2 – apressed hairs	ssp. <i>melo</i> ssp. <i>agrestis</i>	Observed on youngest fruits FOTO
III/42	Ovary shape			
	IPGRI 7.6.18.	1 – flat 2 – round 3 – long 4 – very long		N=10 FOTO
III/43	Fruit shape			
	IPGRI 7.7.1. UPOV	1 – round 2 –flattened 3 – obate 4 – elliptical 5 – pear like 6 – ovate 7 – acorn 8 – elongate 99 -other	Figure 3, Appendix	Measured on ripe fruits N=10 FOTO

III/44	Fruit size			
	IPGRI 7.7.2.	1 -very small 2 - very small to small 3 – small 4 – small to intermediate 5 – intermediate 6 – intermediate to large 7 – large 8 – large to very large 9 - very large	< 100 g approx. 200 g approx. 450 g approx. 800 g approx. 1200 g approx. 1600 g approx. 2000 g approx. 2600 g > 3000 g	N=10
III/45	Fruit length / width ratio			
	IPGRI 7.7.3.		N=10 The length from the stem end to blossom end divided by the width at the broadest point.	
III/46	Time of maturity			
	IPGRI 7.7.5.	1 – early 2 – intermediate 3 – late 4 – very late	< 70 d 70 – 90 d 90 – 100 d >110 d	
III/47	Days to first mature fruit			
	IPGRI 7.7.6.		Number of days from sowing to first mature fruit	
III/48	Maturation period			
	IPGRI 7.7.7.		Number of days from 1 st flowering to 1 st mature fruit	
III/ 49	Predominant fruit skin colour			
	IPGRI 7.7.10. UPOV	1 – white 2 – light yellow 3 -cream 4 -pale green 5 – green 6 – dark green 7 - blackish green 8 – orange 9 – brown 10 – grey 99 - other		N=10 Colour which covers the largest fruit surface area. FOTO
III/50	Secondary fruit skin colour			
	IPGRI 7.7.11. UPOV	1 – white 2 – light yellow 3 -cream 4 -pale green 5 – green 6 – dark green 7 - blackish green 8 – orange 9 – brown 10 – grey 99 - other		N=10 Colour which covers the second largest fruit surface area. FOTO
III/51	Primary colour of immature fruit			

	IPGRI 7.7.12. UPOV	1 light green 2 intermediate 3 dark green		FOTO
III/52	Secondary colour of immature fruit			
	IPGRI 7.7.13.	0 – no secondary colour 1 – light green 2 – intermediate 3 – dark green		FOTO
III/53	Secondary skin colour pattern			
	IPGRI 7.7.15. UPOV	0 – no secondary colour 1 – speckled 2 – spotted 3 – striped 4 – short streaked 5 – long streaked 99 - other	Spots <0,5 cm Spots >0,5 cm Bands that run from peduncle to blossom end Elongated marks that are continuous from one end to other and < 4cm in length As 4 but > 4 cm	N=10 FOTO
III/54	Fruit surface			
	IPGRI 7.7.16. UPOV	1- smooth 2- grainy 3- finely wrinkled 4- deeply wrinkled 5- shallowly wavy 6- rare warts 7- numerous warts 8- lighty corked/netted 9- heavily corked/netted 10- sutures 99- other		FOTO
III/55	Fruit corking/netting distribution			
	IPGRI 7.7.17.	3 -partially covers fruit 5– intermediate 7 – fully covers fruit		FOTO
III/56	Fruit corking/ netting intensity			
	IPGRI 7.7.18.	3- superficial 5 – intermediate 7 - pronounced		FOTO
III/57	Fruit corking/ netting pattern			
	IPGRI 7.7.19.	1 – longitudinal 2 – transverse		FOTO

		3 – netted 4 – dotted 99 - other		
III/58	Fruit ribbing			
	IPGRI 7.7.21.	3 - superficial 5-intermediate 7- deep		FOTO
III/59	Blossom scare sizee			
	IPGRI 7.7.26.	3 – small 5 – intermediate 7 - large		FOTO
III/60	Diameter of peduncle			
	IPGRI 7.7.31.	3 – small 5 – intermediate 7 - large		N=10 Measured 1 cm from fruit
III/61	Fruit abscission			
	IPGRI 7.7.32.	1 – abscises when ripe 2 – abscises when over-ripe		
III/62	Fruit splitting/ cracking habit			
	IPGRI 7.7.34.	1 – superficial 2 – intermediate 3 - deep	< 1 mm 1-3 mm > 3 mm	FOTO
III/63	Fruit storage ability			
	IPGRI 7.7.36.	1 – low 2 – intermediate 3 - long	Approx. 1 week Approx. 1 month Approx.3 month	In room temperature in dry conditions
III/64	Fruit skin index			
	IPGRI 7.7.37.		Expressed as the rind thickness percentage in relation to whole width	
III/65	Internal colour of skin			
	IPGRI 7.7.39.	1 – white 2 - green 3 – yellow 4 – orange 5 – salmon 99 - other		N=10 FOTO
III/66	Main colour of flesh			
	IPGRI 7.7.40.	1 – white 2 – yellow 3 – cream 4 – pale green 5 – green 6 – pale orange 7 – orange 8 – salmon 99 - other		N=10 FOTO
III/67	Flesh colour intensity			
	IPGRI 7.7.42.	3 - light 5 - intermediate 7 - dark		

III/68	Flesh texture			
	IPGRI 7.7.43.	1 – smooth, firm 2 – grainy, firm 3 – soft, firm 4 – mealy 5 – fibrous, gelatinous 6 – fibrous, dry		N=10 Measured at max. fruit diameter
III/69	Flesh index			
	IPGRI 7.7.44.		Calculated on the fruit cross-section as flesh length percentage in relation to width	
III/70	Flesh flavor			
	IPGRI 7.7.45.	3 - insipid 5 - intermediate 7 – sweet 9 - acetone		N=10 If refractometer reading is preferred, specify method
III/71	Flesh moisture			
	IPGRI 7.7.48	3 - Low 5 - Intermediate 7 - high		N=10
III/72	Flesh thickness			
			N=10 Measured at max. fruit diameter, mm	
III/73	Placenta colour			
	IPGRI 7.7.53.	1 – white 2 – green 3 – yellow 4 – orange 5 - salmon		N=10 Colour of cavities/loculi
III/74	Bitterness of mature fruit			
	IPGRI 7.7.58.	0 - absent 3 - Low 5 - Intermediate 7 - high		N=10
III/75	Internal aroma			
	IPGRI 7.7.60.	0 – absent 1 - present		
III/76	Seed size			
	IPGRI 7.8.1.	1 – very small 2 – small 3 – intermediate 4 – large 5- very large	<5 mm 5-8 mm 9-12 mm 13-16 mm > 16 mm	
III/77	Seed shape			
	IPGRI 7.8.2.	1 – roundish 2 – eliptcal 3 – oval 4 – triangular 5 – pinonet type 99 - other	length/ width < 2.0 length/ width 2.1 -2.5 >2.5 Like pine seeds	N=50 FOTO

III/78	100 seed weight			
	IPGRI 7.8.9.			
III/79	Duration of vegetation period			
	IPGRI 8.1.3.		Expressed in days	
III/80	Number of fruits per plant			
	IPGRI 8.1.4.		N=5 Count only mature fruits.	
III/81	Main vine length			
	IPGRI 8.8.6.			cm
III/82	Fruit length			
	IPGRI 8.1.8.		Measured at seed harvest maturity, cm	
III/83	Fruit width			
	IPGRI 8.1.9.		Measured at seed harvest maturity, cm	
III/84	Fruit weight			
	IPGRI 8.1.10			g
III/85	Resistance to Powdery mildew (<i>Sphaerotheca fuliginea</i> un <i>Erysiphe cichoracearum</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/86	Resistance to Downy mildew (<i>Pseudoperonospora cubensis</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/87	Resistance to scab (<i>Cladosporium cucumerianum</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/88	Resistance to fusarium rot (<i>Fusarium oxysporum</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/89	Resistance to Verticillium wilt (<i>Verticillium albo-atrum</i> un <i>V. dahliae</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/90	Resistance to Septoria leaf spot (<i>Septoria cucurbitacearum</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/91	Resistance to Angular leaf spot (<i>Pseudomonas syringae</i> var. <i>lachrymans</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/92	Resistance to Two spotted spider mite (<i>Tetranychus urticae</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/93	Resistance to Melon aphid (<i>Aphis gossypii</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/94	Resistance to Green peach aphid (<i>Myzus persicae</i>)			
	UPOV	0 absent	Detected by inoculation according to	

	IPGRI	1 present	UPOV and IPGRI guidelines
III/95	Resistance to Onion trips (<i>Thrips tabaci</i>)		
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines
III/96	Resistance to Zucchini yellow mosaic virus - ZYMV		
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines
III/97	Resistance to Papaya ringspot – type W - PRSV-W		
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines
III/98	Resistance to Muskmelon vein necrosis - MVNV		
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines
III/99	Resistance to Cucumber mosaic - CMV		
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines
III/100	Biochemical characters		
	IPGRI 8.2.1. – 8.3.3.		If available
III/101	Notes		
			Any other additional information
III/102	Cytological characteristics and identified genes		
			If available
III/103	Molecular markers		
			If available
III/104	Pictures		
			If available

Explanations

¹IPGRI *Melon*

²UPOV TG/104/5

³ number of measurements

Appendix

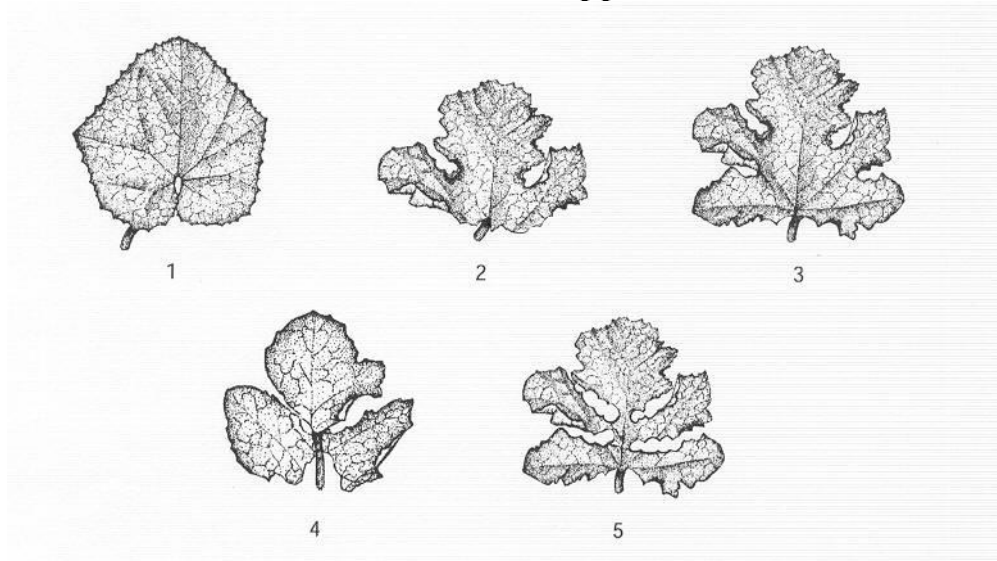


Figure 1. **Leaf shape**

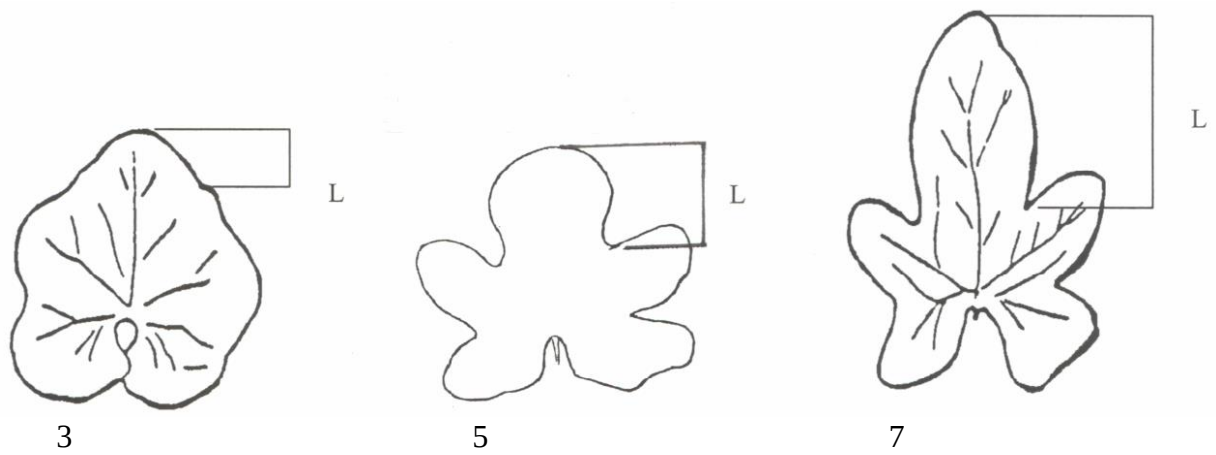


Figure 2. **Length of the terminal lobe**

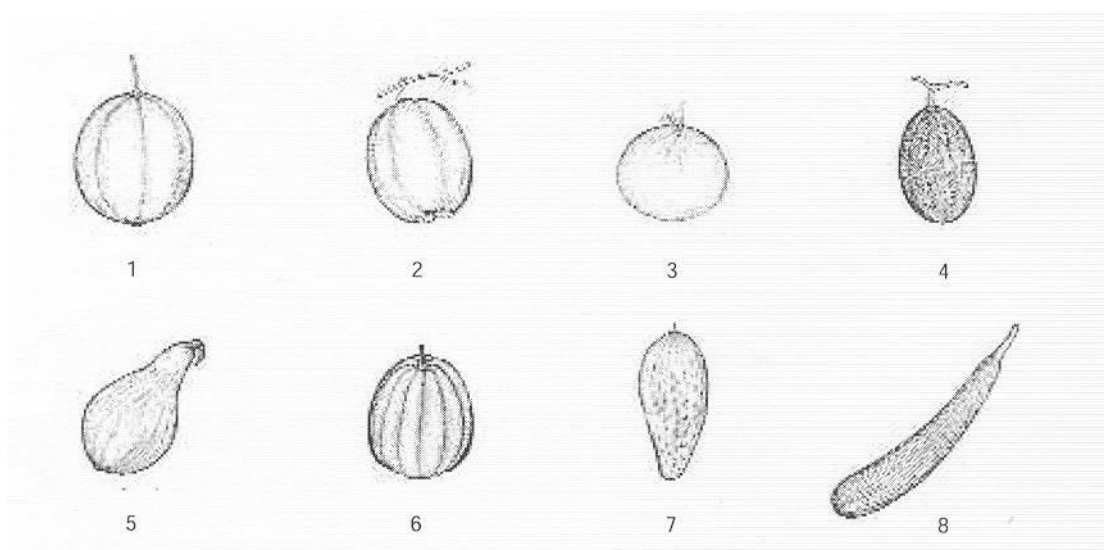


Figure 3. **Fruit shape**