

GARLIC (*Allium sativum* L.) DESCRIPTORS

III CHARACTERIZATION AND EVALUATION DESCRIPTORS

Garlic genetic resources evaluation methodology:

For all quantitative descriptors (metric traits), record the average of at least five measurements per individual accession, unless otherwise specified. 50 plants per accession are desired for complete evaluation of the accession.

Characterization descriptors should be evaluated in three-year period. Each accession has to be characterized separately. Observations should be made on fully developed plants at the beginning of flowering, unless otherwise indicated.

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)

Descriptor code	Number of trait in other descriptors	Descriptor Scale (score)	Reference values	Remarks
III Characterization and evaluation descriptors				
III/1		Foliage colour		
	¹ IPGRI 7.1.1. ² UPOV 3	1 Light green 2 Yellow green 3 Green 4 Grey-green 5 Dark green 6 Bluish green 7 Purplish-green		Recorded on fully developed plants, at flowering stage
III/2	Foliage height			
	UPOV 5		Record the average length of longest	

			leaf, cm, of 5–10 fully developed plants.	
III/3	Leaf width			
	IPGRI 7.1.3. UPOV 6	3 Narrow 5 Medium 7 Broad		Record the maximum width of the longest leaf of 5–10 fully developed plants.
III/4	Foliage attitude			
	IPGRI 7.1.5. UPOV 2	3 Prostrate (or spreading) 5 Intermediate 7 Erect		
III/5	Density of leaves			
	IPGRI 7.1.4. UPOV 1	3 Low 5 Medium 7 High		Fig.1 FOTO
III/6	Degree of leaf waxiness			
	IPGRI 7.1.8. UPOV 4	3 Weak 5 Medium 7 Strong		
III/7	Pseudostem length			
	IPGRI 7.1.9.	3 Short 5 Intermediate 7 Long	<18 cm >27 cm	cm (Pseudostem). Measured on mature plants in the ground, from soil level to the inner lamina notch
III/8	Pseudostem diameter			
	IPGRI 7.1.10. UPOV 9	3 Narrow 5 Intermediate 7 Broad		Measured on the base of mature plants
III/9	Shape of mature dry bulbs			
	IPGRI 7.1.12. UPOV 15	1 Circular, basal plate prominent 2 Heart-shaped, basal plate retracted 3 Broadly ovate, basal plate even		Fig.2 FOTO
III/10	Outer skin ground colour of bulb			
	IPGRI 7.1.16. UPOV 21	1 White 2 Cream 3 Beige 4 White stripes 5 Light violet 6 Violet 7 Dark violet		FOTO
III/11	Anthocian stripes on dry external scales			

	UPOV 22	0 Absent 1 Present		FOTO
III/12	Scale colour of cloves			
	IPGRI 7.1.16.2. UPOV 29	1 white 2 cream 3 pink 4 purple 5 brown 6 brown-creamy 7 brown -pink		Detected on mature bulbs FOTO
III/13	Anthocian stripes on clove scale			
	UPOV 31	0 Absent 1 Present		Detected on mature bulbs
III/14	Thickness of dry external scales			
	UPOV 24	3 thin 5 medium 7 thick		Detected on mature bulbs
III/15	Number of cloves per bulb			
	IPGRI 7.1.19. UPOV 25	1 1 2 2–4 3 5–10 4 11–15 5 16–20 6 >20 7 Around 50		
III/16	Bulb structure type			
	IPGRI 7.1.20. UPOV 26	1 Regular multi-fan groups (or multi- shelled) 2 Regular two-fan groups 3 Regular multi-cloved radial 4 Regular quadruple 5 Regular two-cloved 6 Irregular		Fig.3 FOTO
III/17	External cloves			
	UPOV 27	0 Absent 1 Present		FOTO
III/18	Clove flesh colour			
	UPOV 32	1 white 2 yellowish		FOTO
III/19	Weight of cloves			
		1 <2 g 2 2–4 g 3 >4–6 g 4 >6–10 g 5 >10–15 g 6 >15 g		Average weight of 10 cloves (of 5–10 plants) (outer whorl only)
III/20	100 bulbil weight			
	IPGRI 7.1.23.	1 Low 2 Medium	<10 g 10–30 g	

		3 High	>30 g	
III/21	Number of bulbils (topsets)			
	IPGRI 7.1.24.	0 Absent 1 Few 2 Many	<30 >30	Average number of 5–10 inflorescences from different plants
III/22	Ability to flower			
	IPGRI 7.2.1. UPOV 10	0 No 1 Yes		
III/23	Flowering stem length			
	IPGRI 7.2.3. UPOV 12		Average scape length of 5–10 plants with fully bloomed primary umbels, cm	
III/24	Flowering stem curvature			
	UPOV 11	0 Absent 1 Present		
III/25	General fertility			
	IPGRI 7.2.5.	1 Sterile 2 Male sterile 3 Female sterile 4 Fertile		
III/26	Number of days to maturity			
			Recorded when 50% have fallen tops	
III/27	Vegetation type			
		1 spring 2 winter		
III/28	Resistance to Downy mildew (<i>Peronospora destructor</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/29	Resistance to Rust (<i>Puccinia (porri) allii</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/30	Resistance to Black mould (<i>Botrytis allii</i> (<i>B. aclada</i>))			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/31	Resistance to Leaf blight (<i>Botrytis squamosa</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/32	Resistance to Bulb mite (<i>Rhizoglyphus echinopus</i>)			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/33	Resistance to Onion fly (<i>Delia (Hylemya) antiqua</i>)			
	UPOV IPGRI	0 absent 1 present		
III/34	Resistance to <i>Onion yellow dwarf virus</i> OYDV			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	

III/35	Resistance to <i>Garlic latent virus</i> GarLV			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/36	Resistance to <i>Garlic common latent virus</i> GarCLV			
	UPOV IPGRI	0 absent 1 present	Detected by inoculation according to UPOV and IPGRI guidelines	
III/37	Notes			
			Any other additional information	
III/38	Cytological characteristics and identified genes			
				If available
III/39	Molecular markers			
				If available
III/40	Pictures			
				If available
III/41	Biochemical composition			
				If available
III/42	Molecular passport data			
				If available

Explanations

¹IPGRI *Allium*

²UPOV TG/162/4

Appendix



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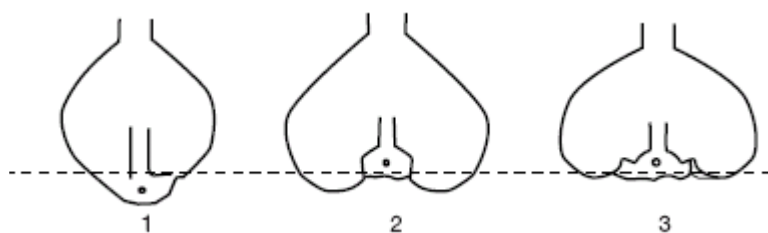


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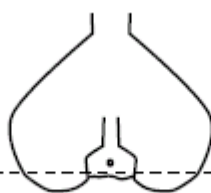


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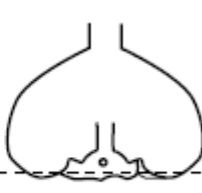
Figure 1. **Density of leaves**



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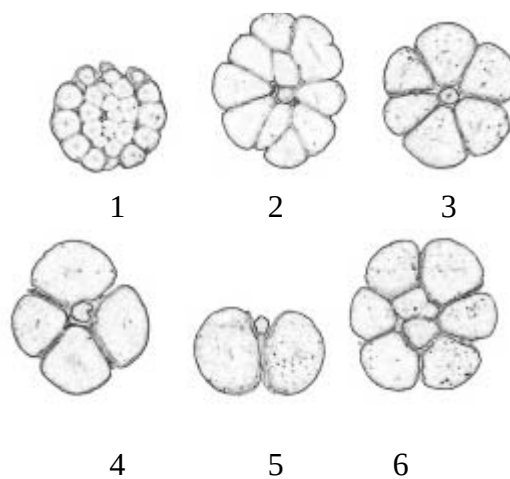


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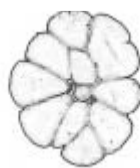


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Figure 2. **Shape of mature bulbs**



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Figure 3. **Bulb structure type**