

**Draft Descriptor List *Carum* spp.**

Highly discriminating descriptors in this descriptor list are marked with an asterisk [**\***].

Characterization *ex situ* should be made on an average of minimum 10 plants randomly chosen per accession from the population.

Recommended spacing of plants is 40 x 15 cm, plot area 5m<sup>2</sup>, sowing in the spring (up to mid-April).

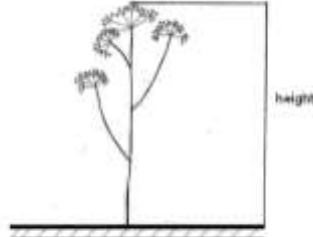
**Locality:** Country, GPS


**Date** [YYYYMMDD]:


**Specimen No.** (In case of *in situ* characterization):



**Accession No.** (In case of *ex situ* characterization/evaluation):

		<i>In situ</i>	<i>Ex situ</i>
<b>CHARACTERIZATION</b>			
<b>7. Plant descriptors</b>			
<b>7.1 Plant (vegetative)</b>			
<b>*</b>	<b>7.1.1 Life cycle</b>	√	√
	1 Annual		
	2 Biennial		
<b>*</b>	<b>7.1.2. Plant growth habit</b>	√	√
	Observed at full flowering of main primary umbels.		
	3 Prostrate		
	5 Semi-erect		
	7 Erect		

		<i>In situ</i>	<i>Ex situ</i>
*	<p><b>7.1.3. Plant height [cm]</b>                      Measured at flowering from soil surface to terminal branch, including umbel (See figure 1).                      3 Low (&lt;70)                      5 Intermediate (70-90)                      7 High (&gt;90)</p>	√	√
	 <p>Figure 1. Plant height</p>		
	<p><b>7.2. Stem</b></p>		
*	<p><b>7.2.1 Stem branching density</b>                      Observed at full flowering of main primary umbel.                      3 Sparse                      5 Intermediate                      7 Dense</p>	√	√
*	<p><b>7.2.2 Main stem diameter [mm]</b>                      Measured in the middle third of the terminal shoot.</p>	√	√
	<p><b>7.2.3 Foliage density</b>                      Observed at full flowering of main primary umbel.                      3 Sparse                      5 Intermediate                      7 Dense</p>	√	√
	<p><b>7.3. Leaf</b>                      Measured on 20 leaves in growth.</p>		
*	<p><b>7.3.1 Leaf rosette position (attitude)</b>                      Observed in the sowing year on fully developed leaf rosette.                      3 Prostrate                      5 Semi-erect                      7 Erect</p>	√	√

		<i>In situ</i>	<i>Ex situ</i>
*	<p><b>7.3.2 Leaf length [cm]</b> (See figure 2)</p> <p>3 Short (&lt;20) 5 Intermediate (20-30) 7 Long (&gt;30)</p>	√	√
			
	<p>Figure 2. Leaf : length (a) and width (b) Petiole: length (c) and thickness (d)</p>		
*	<p><b>7.3.3 Leaf width [cm]</b> (See figure 2)</p> <p>3 Narrow (&lt;10) 5 Intermediate (10-15) 7 Wide (&gt;15)</p>	√	√
*	<p><b>7.3.4 Petiole length [cm]</b> (See figure 2)</p> <p>3 Short (&lt;5) 5 Intermediate (5-10) 7 Long (&gt;10)</p>	√	√
*	<p><b>7.3.5 Petiole thickness [mm]</b> Measured closely below the splitting of the first feathering. (See figure 2)</p> <p>3 Narrow (&lt;2) 5 Intermediate (2-3) 7 Broad (&gt;3)</p>	√	√

			<i>In situ</i>	<i>Ex situ</i>
*	<b>7.3.6. Leaf dissection</b> (See figure 3)		√	√
	3 Slightly dissected			
	5 Intermediate			
	7 Highly dissected			
	 <p>slightly dissected (3)      intermediate (5)      highly dissected (7)</p> <p>Figure 3. Leaf dissection</p>			
*	<b>7.3.7 Mature leaf colour</b>	(RHS colour chart code)	√	√
	1 Yellow green	(144A – 154D)		
	2 Green	(131A – 143D)		
	3 Dark green	(136B)		
	<b>7.4. Inflorescence</b>			
*	<b>7.4.1 Width of open primary umbel [cm]</b>		√	√
	Average value of the 10 measured terminal umbels.			
	3 Small (<5)			
	5 Intermediate (5-7)			
	7 Large (>7)			

		<i>In situ</i>	<i>Ex situ</i>
	<p><b>7.4.2 Number of umbellets in primary umbel</b> (See figure 4)</p> <p>3 Low (&lt;7) 5 Intermediate (8-10) 7 High (&gt;10)</p>	√	√
			
<p>Figure 4. Number of umbellets</p>			
*	<p><b>7.4.3 Flower colour</b> (RHS colour chart code)</p> <p>1 White (155A – 155D) 2 Green white (156A – 157D) 3 Red purple (62A – 69D)</p>	√	√
*	<p><b>7.4.4 Umbels position before harvest</b> (See figure 5)</p> <p>3 Open 5 Intermediate 7 Constricted</p>	√	√
			
<p>Figure 5. Umbels position</p>			
*	<p><b>7.4.5 Heading time of primary umbel</b></p> <p>Number of days from sowing to appearance of the terminal umbel, compared to check cultivars considered as intermediate: for annuals: Karzo (1994, The Netherlands); for biennials: Rekord (1978, Czechoslovakia).</p> <p>3 Early 5 Intermediate 7 Late</p>	√	

		<i>In situ</i>	<i>Ex situ</i>
*	<b>7.4.6 Flowering time of primary umbel</b> Number of days from sowing to when 25% of the terminal umbels start to flower, compared to check cultivars considered as intermediate: for annuals: Karzo (1994, The Netherlands); for biennials: Rekord (1978, Czechoslovakia). 3 Early 5 Intermediate 7 Late	√	
*	<b>7.4.7 Full flowering time</b> Number of days from sowing to full flowering, when terminal umbel ends flowering and majority of subsequent umbels keep flowering, compared to check cultivars considered as intermediate: for annuals: Karzo (1994, The Netherlands); for biennials: Rekord (1978, Czechoslovakia). 3 Early 5 Intermediate 7 Late	√	
*	<b>7.4.8 Maturity time of primary umbel</b> Number of days from sowing to technical maturity of the terminal umbel, compared to check cultivars considered as intermediate: for annuals: Karzo (1994, The Netherlands); for biennials: Rekord (1978, Czechoslovakia). 3 Early 5 Intermediate 7 Late	√	
*	<b>7.4.9 Full maturity time</b> Number of days from sowing to when 90% of plants are ready for seed harvest, compared to check cultivars considered as intermediate: for annuals: Karzo (1994, The Netherlands); for biennials: Rekord (1978, Czechoslovakia). 3 Early 5 Intermediate 7 Late	√	
	<b>7.5. Fruit (achene)</b>		
*	<b>7.5.1 Fruit shape</b> 1 Straight 2 Falcate (lunate)	√	√
*	<b>7.5.2 Fruit length [mm]</b> Average value calculated from 50 measured seeds. 3 Short (<4) 5 Intermediate (4-6) 7 Long (>6)	√	√
*	<b>7.5.3 Fruit thickness (diameter) [mm]</b> 1 Narrow (<1) 2 Broad (>1)	√	√

			<i>In situ</i>	<i>Ex situ</i>
*	<b>7.5.4 Fruit colour at maturity</b>	(RHS colour chart code) 1 Greyed green (191A – 198D) 2 Grey brown (199A – N199D) 3 Brown (200A – N200D) 99 Other (remarks)	√	√
*	<b>7.5.5 1000-seed weight [g]</b>	According to ISTA (International Seed Testing Association) rules: 5-6% moisture content 3 Low (<2.4) 5 Intermediate (2.4–2.8) 7 High (>2.8)	√	√
	<b>7.5.6 Seed yield [g per plant]</b>	3 Low (<80) 5 Intermediate (80–120) 7 High (>120)	√	√
*	<b>7.5.7 Seed shattering [%]</b>	Percentage of fallen seeds after slight hit against a firm table (measured on 20 primary umbels harvested at technological maturity) 3 Low (<25) 5 Intermediate (25-50) 7 High (>50)	√	
	<b>7.3 Remarks</b>	Any additional information, especially in the category “99 = Other” above, may be specified here.		√

## EVALUATION

### 8. Plant descriptors

#### 8.1 Chemical composition

*	<b>8.1.1 Essential oil content in the seed dry matter</b>	[ml/kg DW] According to ISTA (International Seed Testing Association) rules: 5-6% moisture content 3 Low (<20) 5 Intermediate (20-35) 7 High (>35)	√	√
*	<b>8.1.2 Carvon rate in essential oil [%]</b>	3 Low (<50) 5 Intermediate (50) 7 High (>50)	√	√

			<i>In situ</i>	<i>Ex situ</i>
*	<b>8.1.3</b>	<b>Limonene rate in essential oil [%]</b>		
		3 Low (<47)	√	√
		5 Intermediate (47)		
		7 High (>47)		
	<b>8.2</b>	<b>Cytological characters</b>	√	√
*	<b>8.2.1</b>	<b>Chromosome number</b>		

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**CONTRIBUTORS**

Karel Dušek, Ph.D.  
Crop Research Institute, Department of Vegetables and Special Crops Olomouc  
Šlechtitelů 11  
783 71 Olomouc-Holice  
Czech Republic  
Email: dusek@genobanka.cz

Elena Dušková  
Crop Research Institute, Department of Vegetables and Special Crops Olomouc  
Šlechtitelů 11  
783 71 Olomouc-Holice  
Czech Republic  
Email: duskova@genobanka.cz

Vladimír Vinter, Ph.D.  
Palacký University in Olomouc  
Faculty of Science, Department of Botany  
Křížkovského 8  
771 47 Olomouc  
Czech Republic  
Email: vladimir.vinter@upol.cz



## REVIEWERS

Aixa del Greco<sup>1</sup>  
Bioersity International  
Via Tre Denari 472/a  
00057 Maccarese-Fiumicino, Rome  
Italy

Iva Faberová  
Crop Research Institute  
Drnovská 507  
161 06 Praha 6-Ruzyně  
Czech Republic  
E mail: faberova@vurv.cz

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<sup>1</sup> (has now left the institute)