THE COLLECTION OF GENETIC RESOURCES OF GARLIC

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The germplasm collection of garlic (*Allium sativum* L.) maintained at the Institute of Horticulture in Skierniewice was established in 1986. The collection includes 373 accessions of garlic: 176 non-bolting garlic accessions suitable for spring growing season and 194 accessions of bolting garlic for autumn growing season. The garlic accessions originated from 23 countries.

The accessions of garlic, after initial multiplication, are included in 3-year trials (3–4 replications) to characterize and evaluate their economic value. After a 3-year research cycle, the accessions are maintained in the field collection in one replication (50-100 plants of each accession). Characterization is conducted according to the descriptors for *Allium* developed by IPGRI (IPGRI et al. 2001).

Bolting garlic accessions revealed great variability of the weight and number of bulbils and also flower number in the inflorescence.

1 - very low (>5 g/100) 42,9% | **3 - low** (5 - 15 g/100) 16,8% | **5 - medium** (15 - 30 g/100) 18,9% | **7 - high** (30 - 50 g/100) 12,0% | **9 - very high** (<50 g/100) 9,4%

Weight of 100 garlic bulbils (1,5 - 113,8 g)

On the base of measurements of these parameters in 97 bolting garlic accessions, five classes for weight and number of bulbils were distinguished. Because these traits are stable over years, they can be used as criteria four grouping accessions in collections.

Twenty-one types of cloves arrangement on transversal cut of the head were observed in 185 garlic accessions of both forms.

The maintenance of vegetatively propagated garlic collection each year in the field cause phytosanitary troubles and high costs. Therefore it is necessary to search for alternative methods of long term storage of the most valuable garlic germplasm. In this aim the cryopreservation using vitrification method is applied in garlic research program. 47 bolting garlic and 20 non-bolting garlic accessions from Polish collection were placed in liquid nitrogen in the frame of EURALLIVEG project.

The type of bulb structure

Number of bulbils in inflorescence (4 - 325)

Class	Number	%
1 - Few	1-5	1,2
3 - Sparse	6-30	35,5
5 - Medium	30-100	27,7
7 - Many	100-200	34,3
9 - Very many	>200	1,3

The type of bulb structure