



# The CNR Gene Bank of Bari Activities in Crop Wild Relatives

Perrino, P.<sup>1</sup>, V. Tomaselli<sup>1</sup>, M., Terzi<sup>1</sup>, G. Sarli<sup>1</sup>, G. Maruca<sup>1</sup>, L. Mallardi<sup>1</sup>, I. Scarascia<sup>1</sup>, M. Scarascia<sup>1</sup>, P. Cataldo<sup>1</sup>, K. Hammer<sup>2</sup>, D. Lafiandra<sup>3</sup>

1. CNR, Plant Genetic Institute (ex Germplasm Institute), Bari - Italy
2. University of Kassel - Germany
3. University of Tuscia, Viterbo - Italy

## Collecting

The Italian Gene Bank of the National Research Council (CNR) at Bari, started to collect crop wild relatives (CWR) in 1970, together with threatened crops. At the very beginning CWR did not receive much attention as it was later on and especially in collaboration with FAO, IPGRI, ICARDA, IPK (Germany), Institute of Agrobotany (Hungary), University of Tuscia (Italy), and others. Samples of the genetic material, gathered in all the Mediterranean countries, including Italy, Ethiopia, South Africa, Middle East, etc., were shared with national institutions and in some occasions were duplicated to IPK gene bank. The most important collected CWR concern species related to wheat, barley, oat, rye, pea, bean, cabbage, cowpea, lentil, sugar beet, meadow grass, white clover, lettuce, sage, crambe and several others.

## Conservation

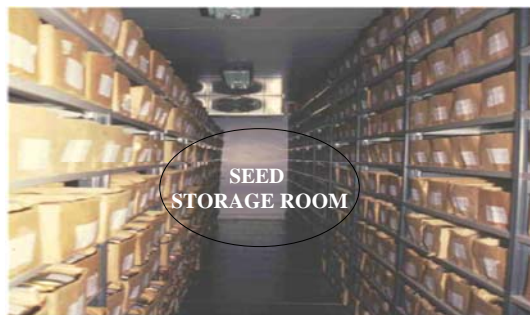
CWR collected in more than 30 years are conserved *ex situ* at 0°C and 35% of R.H (short and medium term) and at -20°C (long term). A database of the collection by genera and species has been created.

## Utilization

A part from the research carried out in other centers on the material provided to them, for which, unfortunately, there is no feedback, a lot of research has been carried out at Bari in collaboration with other Italian and foreign research centers.

## National projects

From 1988 to 2000 the Italian Gene Bank of Bari coordinated a national project of CNR on plant, animal and microbial biodiversity, including wild species and CWR, with the aim to improve *in situ* and *ex situ* conservation and utilization of genetic resources. From 2002 to 2005, the Gene Bank, in collaboration with the Ministry of Environment, the Regional Council of Basilicata and the University of Bari, has also realized in Basilicata (at Policoro, PZ) a Thematic Center for the Safeguard and Protection of Mediterranean Plant Biodiversity, including endemic species and CWR. Data and information concerning genera and specie of CWR collected, preserved and studied at the Bari Gene Bank for utilization are shown below.



**Genus: Triticum**

Species	N. of accessions	N. of origin
<i>T. aestivum</i>	6	1
<i>T. araraticum</i>	124	4
<i>T. boeoticum</i>	321	8
<i>T. dicoccoides</i>	173	9
<i>T. dicoccum</i>	371	7
<i>T. monococcum</i>	86	6
<i>T. spelta</i>	310	12
<i>T. timopheevii</i>	34	4
<i>T. urartu</i>	140	4
<b>TOTAL</b>	<b>1565</b>	

**Genus: Hordeum**

Species	N. of accessions	N. of origin
<i>H. bulbosum</i>	30	1
<i>H. maritimum</i>	9	2
<i>H. murinum</i>	35	2
<b>TOTAL</b>	<b>74</b>	<b>5</b>

**Gramineae**

Genus	N. of species	N. of accessions	N. of origin
<i>Aegilops</i>	40	1609	21
<i>Aegilotriticum</i>		2	1
<i>Dasyphyrum</i>	1	156	4
<i>Dactylis</i>	1	258	5
<i>Lolium</i>	7	369	12
<i>Panicum</i>	2	100	5
<i>Pennisetum</i>	3	53	1
<i>Phalaris</i>	13	162	6
<i>Oryza</i>	3	732	13
<i>Secale</i>	12	399	11
<i>Setaria</i>	1	5	2
<b>TOTAL</b>	<b>83</b>	<b>3845</b>	

**Vegetable crops**

Genus	N. of species	N. of accessions	N. of origin
<i>Allium</i>	9	180	5
<i>Anethum</i>	1	7	3
<i>Apium</i>	1	32	4
<i>Beta</i>	2	140	8
<i>Brassica</i>	17	642	13
<i>Capsicum</i>	7	167	6
<i>Cichorium</i>	2	91	5
<i>Citrullus</i>	2	74	9
<i>Cucumis</i>	4	158	16
<i>Cucurbita</i>	4	162	12
<i>Cuminum</i>	1	9	3
<i>Cynara</i>	2	15	2
<i>Daucus</i>	1	40	6
<i>Eruca</i>	2	38	3
<i>Foeniculum</i>	1	44	5
<i>Lactuca</i>	3	98	5
<i>Lagenaria</i>	2	29	3
<i>Lycopersicon</i>	10	560	25
<i>Nasturtium</i>	1	61	1
<i>Ocimum</i>	2	37	2
<i>Origanum</i>	1	12	2
<i>Petroselinum</i>	3	55	5
<i>Raphanus</i>	2	93	11
<i>Sinapis</i>	2	18	2
<i>Solanum</i>	3	53	8
<i>Spinacia</i>	1	30	4
<b>TOTAL</b>	<b>86</b>	<b>2845</b>	

**Leguminosae**

Genus	N. of species	N. of accessions	N. of origin
<i>Hedysarum</i>	3	29	2
<i>Lathyrus</i>	14	184	2
<i>Lens</i>	4	1129	8
<i>Lupinus</i>	4	67	6
<i>Medicago</i>	18	1118	2
<i>Phaseolus</i>	10	1758	16
<i>Vicia</i>	51	1168	12
<i>Vigna</i>	40	850	13
<b>TOTAL</b>	<b>144</b>	<b>6303</b>	

**Miscellany species**

Genus	N. of species	N. of accessions	N. of origin	Genus	N. of species	N. of accessions	N. of origin
<i>Abelmoschus</i>	1	50	3	<i>Gossypium</i>	1	23	1
<i>Agrostemma</i>	1	3	1	<i>Helianthus</i>	4	93	7
<i>Alcea</i>	1	1	1	<i>Hibiscus</i>	3	70	7
<i>Amaranthus</i>	4	46	1	<i>Isatis</i>	1	1	1
<i>Ammi</i>	1	1	1	<i>Kochia</i>	1	2	1
<i>Angelica</i>	1	1	1	<i>Lawsonia</i>	1	1	1
<i>Anthriscus</i>	1	2	2	<i>Lesquerella</i>	11	14	2
<i>Anthriscum</i>	1	2	1	<i>Levisticum</i>	1	1	1
<i>Arctium</i>	1	4	1	<i>Linum</i>	3	30	3
<i>Asparagus</i>	1	2	2	<i>Luffa</i>	1	2	2
<i>Atriplex</i>	1	8	3	<i>Malva</i>	2	2	2
<i>Basella</i>	1	1	1	<i>Mathiola</i>	1	4	1
<i>Carduus</i>	1	2	1	<i>Melissa</i>	1	1	1
<i>Carica</i>	1	10	1	<i>Morandia</i>	1	3	1
<i>Carthamus</i>	1	17	3	<i>Nicotiana</i>	2	24	4
<i>Carum</i>	1	6	1	<i>Nigella</i>	2	5	4
<i>Caucalis</i>	1	1	1	<i>Papaver</i>	1	4	1
<i>Centrosema</i>	1	4	2	<i>Perilla</i>	1	2	1
<i>Chrysanthemum</i>	1	4	1	<i>Phacelia</i>	1	1	1
<i>Cofea</i>	1	1	1	<i>Pimpinella</i>	1	8	3
<i>Corchorus</i>	1	35	3	<i>Plantago</i>	1	1	1
<i>Corlandrum</i>	1	14	6	<i>Peruflaca</i>	1	1	1
<i>Coronilla</i>	2	4	1	<i>Prunus</i>	1	1	1
<i>Crambe</i>	5	43	9	<i>Rhinanthus</i>	1	1	1
<i>Cryptotaenia</i>	1	2	1	<i>Ricinus</i>	1	4	3
<i>Cuphea</i>	2	8	1	<i>Sesamum</i>	1	116	7
<i>Datura</i>	2	2	1	<i>Simmondsia</i>	1	2	1
<i>Dianthus</i>	1	6	1	<i>Sisymbrium</i>	1	1	1
<i>Erucaria</i>	1	1	1	<i>Smyrniolum</i>	1	1	1
<i>Erucasrum</i>	1	1	1	<i>Stokesia</i>	1	1	1
<i>Pagophyllum</i>	1	4	1	<i>Tecoma</i>	1	1	1
<i>Gleisium</i>	1	1	1	<i>Tetragonia</i>	1	1	1
<b>TOTAL</b>	<b>42</b>	<b>287</b>		<b>TOTAL</b>	<b>51</b>	<b>422</b>	