

Field collection and conservation of wild edible species in the Germplasm Bank of Zaragoza (Spain)

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There is a high number of non-cultivated edible plant species. Some of them are still appreciated and consumed, in other cases their consumption is only in the memory of the elderly people and the knowledge about these species is at risk of disappearing. Within the framework of the Spanish project 'The genetic resources of edible underutilized species: field collection, multiplication and conservation in the Germplasm Bank', during 2009 various collecting expeditions across Aragón, a region of 47720 km² in the northeast of Spain, were performed with the following aims: 1) To compile information about wild species used for eating, 2) To locate these species within their natural habitat, 3) To classify them taxonomically, 4) To obtain some seeds and maintain them under long-term storage conditions.

IDENTIFIERS

A total of 31 personal interviews have been carried out. The age of the informers was between 44 and 92, being the average age 66 years old. Local information providers were mainly farmers (61.3%) and community members (32.2%) (Figure 1).

PLANT IDENTIFICATION

A total of 95 seed samples of wild edible species have been collected, belonging to 16 families and 29 species (Figure 2 and Table 1).



Figure 2. Plant species. A: *Scolymus hispanicus*; B: *Scorzonera laciniata*; C: *Sylbium marianum*; D: *Bryonia dioica*; E: *Chondrilla juncea*; F: *Rorippa nasturtium-aquaticum*; G: *Clematis vitalva*; H: *Eruca sativa*; I: *Asparagus acutifolius*.

DESCRIPTORS

COLLECTING FORM - VEGETABLE GERmplasm BANK OF ZARAGOZA	
DATE (1.1)	FARMER'S ACTIVITY (1.2)
INTERVIEWER (1.3)	COLLECTOR NUMBER (1.4)
INFORMER PROVIDER (1.5)	ADDRESS (1.6)
PROFESSION (1.7)	MAIL OCCUPATION (1.8)
FAMILY (1.9)	GENUS (2.1)
SPECIES (2.2)	LOCAL NAME (2.3)
COMMON NAME (2.4)	COLLECTING RANGE (2.5)
ECOLOGICAL STATUS (2.6)	PLANT USE (2.7)
COUNTRY (3.1)	PROVINCE (3.2)
SITE (3.3)	LOCATION PLACE (3.4)
LATITUDE (3.5)	LONGITUDE (3.6)
ELEVATION (3.7)	DISTANCE (3.8)
SOURCE (3.9)	COLLECTOR'S NOTES (3.10)

Table 1. Collected species.

Family	Species	Accessions
Alliaceae	<i>Allium ampeloprasum</i> L.	2
Apiaceae	<i>Petroselinum crispum</i> (MILL.) NYMAN.	6
Apiaceae	<i>Foeniculum vulgare</i> MILL.	1
Asteraceae	<i>Centaurea aspera</i> L.	1
Asteraceae	<i>Chondrilla juncea</i> L.	6
Asteraceae	<i>Lactuca serriola</i> L.	3
Asteraceae	<i>Scorzonera laciniata</i> L.	3
Asteraceae	<i>Sylbium marianum</i> (L.) Gaertn.	2
Asteraceae	<i>Taraxacum officinale</i> (L.) WEBER	1
Asteraceae	<i>Picris echioides</i> L.	2
Asteraceae	<i>Scolymus hispanicus</i> L.	9
Asteraceae	<i>Sonchus oleraceus</i> L.	1
Borraginaceae	<i>Anchusa italica</i> RETZ.	1
Borraginaceae	<i>Borago officinalis</i> L.	1
Brassicaceae	<i>Eruca sativa</i> MILL.	5
Brassicaceae	<i>Rorippa nasturtium-aquaticum</i> (L.) HAYEK	5
Hamamelidaceae	<i>Hamulus lupulus</i> L.	2
Capparidaceae	<i>Capparis spinosa</i> L.	2
Caryophyllaceae	<i>Silene vulgaris</i> (MOENCH) GARCKE	9
Cheopodiaceae	<i>Beta</i> sp.	1
Cucurbitaceae	<i>Bryonia dioica</i> Jacq.	10
Lamiaceae	<i>Satureja montana</i> L.	1
Liliaceae	<i>Asparagus acutifolius</i> L.	7
Papaveraceae	<i>Papaver rhoeas</i> L.	1
Papaveraceae	<i>Papaver somniferum</i> L.	2
Polygonaceae	<i>Rumex acetosa</i> L.	1
Polygonaceae	<i>Rumex</i> sp.	1
Portulacaceae	<i>Portulaca oleracea</i> L.	1
Ranunculaceae	<i>Clematis vitalba</i> L.	2
Unknown		1
Total		95

Figure 1. Informers identifying the plants or collecting the seeds.

SITE (GEOGRAPHICAL CONTEXT)

Twenty-seven localities have been visited, all of them in the Autonomous Community of Aragón (Figure 3). Samples were collected mainly in wild habitats (17.9%), cultivated habitats (9.5%) and weedy, disturbed or ruderal habitats (68.4%). More than half of the samples were collected in field margins (56.8%).

ABUNDANCE

Most of the edible plants mentioned are abundant species commonly found in the entire collecting zone (96.8 %), although people indicated that currently some of them are less frequent mainly due to agronomical practices.

TRADITIONAL KNOWLEDGE ABOUT PLANTS

In Spain, wild plants are considered as famine food, eaten, above all, in times of scarcity. In that way, the collected plants are mainly used for food security and scarcity. When there were not other food alternatives, people used to gather these plants from nature for food. That is why some of these plants are no longer used. However, some species are very much appreciated, at least locally, and they are still gathered and even marketed. Figures 5 and 6 illustrate parts of the plant used for food and different uses.

CONSERVATION

All reported species are held as seed samples at the Vegetable Germplasm Bank of Zaragoza (Spain), with low moisture content (~4% RH) and low temperature (-18 °C) in hermetic bottles with silicagel (Figure 4).

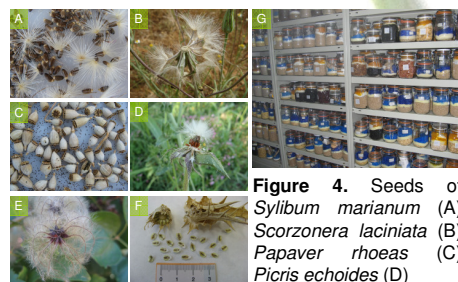


Figure 4. Seeds of *Sylbium marianum* (A) *Scorzonera laciniata* (B) *Papaver rhoeas* (C) *Picris echioides* (D) *Clematis vitalva* (E) *Scolymus hispanicus* (F) and cold store (G).



Figure 5. Parts of the plant used. A: Flower heads (*Sylbium marianum*); B: Tender shoots (*Clematis vitalva*); C: Young plants (*Scolymus hispanicus*).

Figure 3. Prospected localities from Aragón (Spain)



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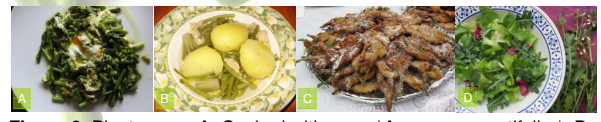


Figure 6. Plants uses. A: Cooked with eggs (*Asparagus acutifolius*); B: Cooked with potatoes (*Scolymus hispanicus*); C: Fried (*Borago officinalis*); D: In salad (*Eruca sativa*).