

Adapting agriculture to climate change:  
collecting, protecting and preparing crop wild relatives

# Chile



# Seed Collecting Guide



MILLENNIUM  
SEED BANK  
PARTNERSHIP

Royal Botanic Gardens  
**Kew**



**CROP  
TRUST**

---

Please cite this guide as:  
RBG Kew (2016) Chile Seed Collecting Guide

NOTE: This guide has been abridged owing to copyright restrictions for selected images and/or datasets. Full, unabridged guides are only available from the Kew Millennium Seed Bank Library Archive. To request access to a full, unabridged guide, please contact the Seed Bank Librarian at [msbllib@kew.org](mailto:msbllib@kew.org).

The content of this collecting guide is intended only as a general reference for future collecting missions; the contents and data within are not guaranteed to be complete, correct, timely, current or up-to-date at the time of publishing. For general information and resources on collecting crop wild relatives, visit [cwrdiversity.org](http://cwrdiversity.org).

#### **Cover photos**

TOP LEFT: *Eleusine coracana*, CREDIT: Jose Hernandez @ USDA-NRCS PLANTS Database;

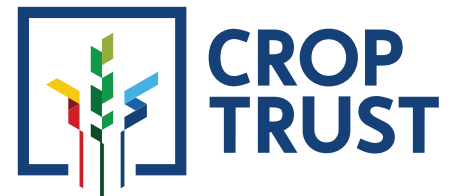
TOP RIGHT: *Solanum etuberosum*, CREDIT: Dick Culbert;

BOTTOM LEFT: Maize, CREDIT: CIAT/Flickr;

BOTTOM RIGHT: Black Beans, CREDIT: Neil Palmer (CIAT)

This work was undertaken as part of the initiative “Adapting Agriculture to Climate Change” which is supported by the Government of Norway. The project is managed by the Global Crop Diversity Trust with the Millennium Seed Bank of the Royal Botanic Gardens, Kew, in partnership with national and international genebanks and plant breeding institutes around the world. It is implemented in accordance with the International Treaty on Plant Genetic Resources for Food and Agriculture. For further information see the project website: [www.cwrdiversity.org/](http://www.cwrdiversity.org/)

Many individual scientists, herbaria, genebanks and specialist institutes are contributing advice and information to the Project and these guides. The Project aims to collect the wild relatives of 29 key crops, conserve them in genebanks, and prepare them for use in plant improvement programs to breed new crop varieties adapted to future climates.



The boundaries and names shown on the maps included in this guide do not imply official endorsement or acceptance by the Adapting Agriculture to Climate Change Project. Data source: GADM, Version 1.0 via [diva-gis.org](http://diva-gis.org)

This work is licenced by RBG Kew (2016) under the Creative Commons CC BY-NC-ND 4.0 Licence. To view a copy of the licence visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>. If use in any further context is required please contact RBG Kew for permission. Copyright restrictions for the datasets and images used in the compilation remain as stated at their primary sources.

The Harlan and de Wet Crop Wild Relatives Checklist was developed by Holly Vincent and Nigel Maxted at the University of Birmingham.

UNIVERSITY OF  
BIRMINGHAM



International Center for Tropical Agriculture  
Since 1967 *Science to cultivate change*

The Gap Analysis work which informed the list of species included in this guide, and all the map files, were produced by the Gap Analysis team at CIAT: Andy Jarvis, Nora Castañeda, Colin Khoury and Julian Ramirez-Villegas.

RBG Kew is involved in the research and collection phases of the project. This collecting guide was developed based on the work of the Millennium Seed Bank Enhancement Project Species Targeting Team.

Royal Botanic Gardens  
Kew



CROP  
TRUST

The Crop Wild Relatives Project is led by the Global Crop Diversity Trust. This work was undertaken as part of the initiative.

Specimen data was kindly provided to this project by many individuals and organisations who are listed on the website: <http://www.cwrdiversity.org/home/data-sources>

This data set will be made available for download. Please refer to the website for more information on this dataset.

This collecting guide has been compiled by:

**Richard Allen**

Collecting Guide Compiler  
Crop Wild Relatives Project  
Herbarium, Library Art & Archives  
Royal Botanic Gardens, Kew

**Dr Ruth Eastwood**

Crop Wild Relatives Project Co-ordinator  
Millennium Seed Bank Partnership  
Seed Conservation Department  
Royal Botanic Gardens, Kew

This collecting guide consists of species profiles and information sheets contained within this folder, alongside a CD which contains localities of the taxa in an excel file.

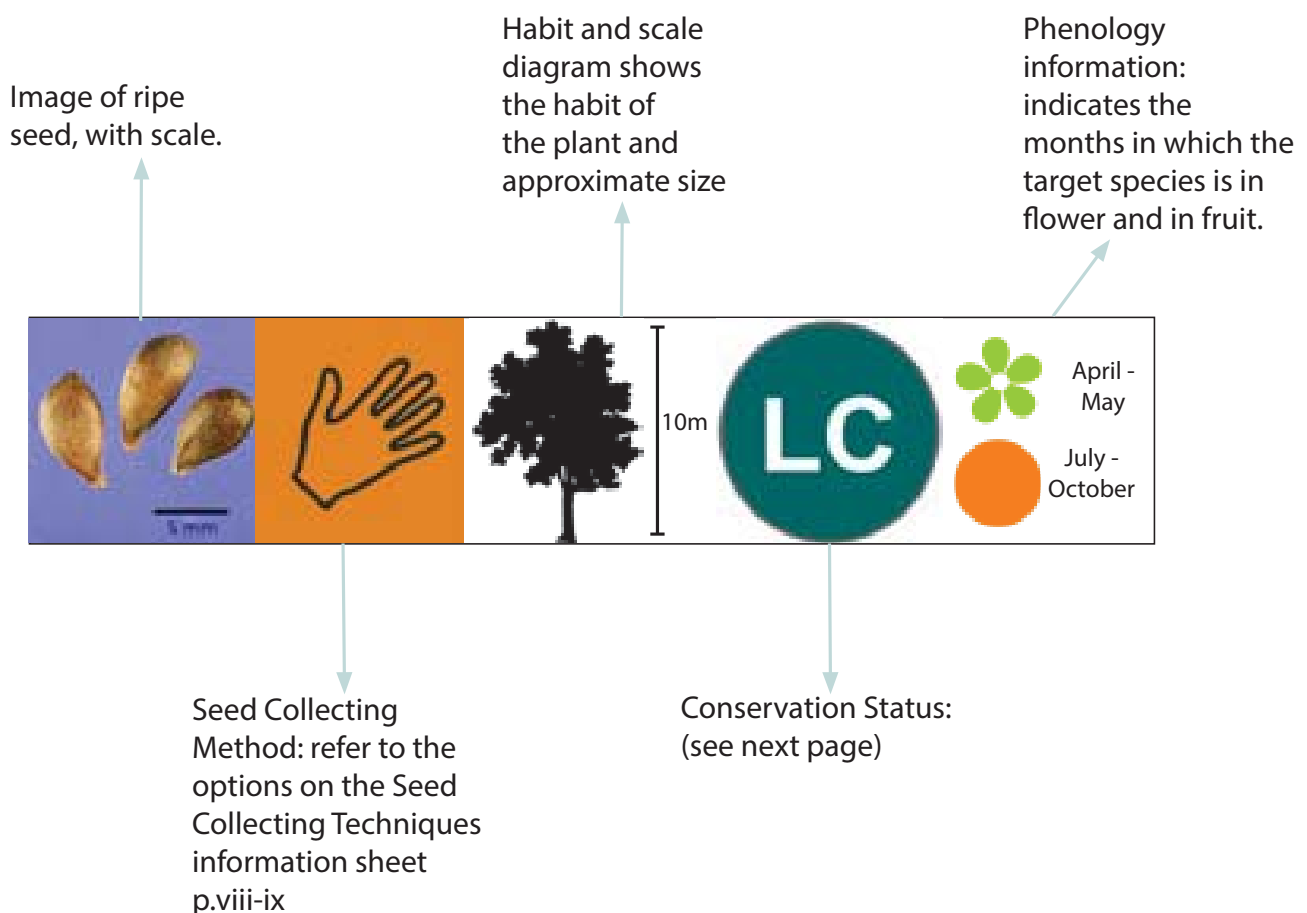
The species included in this guide are a selection of the wild relatives of the 29 key crops which this project covers (African Rice, Alfalfa, Apple, Aubergine, Bambara groundnut, Banana, Barley, Bread Wheat, Butter Bean, Carrot, Chickpea, Common Bean, Cowpea, Faba bean, Finger millet, Grasspea, Lentil, Oat, Pea, Pearl millet, Pigeon pea, Plantain, Potato, Rice, Rye, Sorghum, Sunflower, Sweet potato, Vetch). It is not a definitive guide to the Crop Wild Relatives in this country.

The guides are designed to be used both in the planning of a collecting trip, and also in the field.

At the front of this guide there is a phenology table showing the flowering and fruiting times of all the taxa to indicate which species may be found at a certain time of year, or when to collect target species.

Synonyms for each species are listed in the Appendix at the end of this guide.

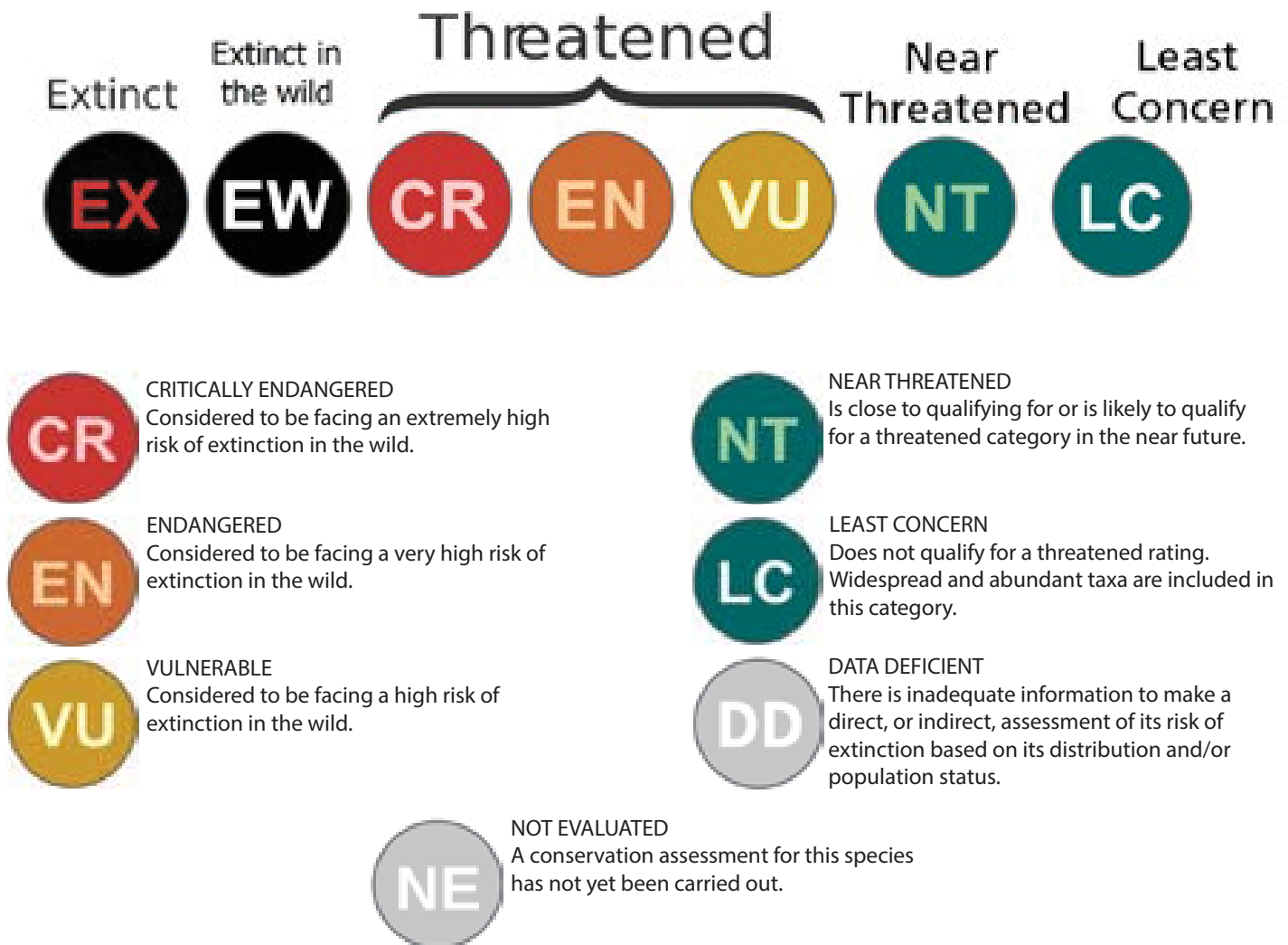
On each species profile, there is a collection of images to help identify the target species, accompanied by a series of symbols :



# Conservation Assessments

## Conservation Status:

Assessments are completed using 2001 IUCN Red List Categories and Criteria version 3.1 with the following categories:



Where a full conservation assessment has not been completed, a preliminary conservation rating may be indicated. Preliminary assessments are produced using specimen locality data and GIS, which calculates two parameters accepted by IUCN as suitable measures of range: namely extent of occurrence (EOO) and area of occupancy (AOO). These values derived for each species are then compared with thresholds set out by IUCN under Criterion B.

Where a preliminary conservation assessment has been calculated this is indicated by the word PRELIM:



# Maps

Two maps are provided for each target species. The first map shows a point distribution of all the known localities of this species based on herbarium specimen records and existing data-sets. The area shaded on this map shows the predicted distribution based on Maxent.



The second map shows the potential gaps in gene bank collections, where seed collections should be targeted.



# Useful resources

The following resources are available online.

## Kew technical information sheets

- Assessing a potential seed collection:  
<http://brahmsonline.kew.org/Content/Projects/msbp/resources/Training/02-Assessing-population.pdf>
- Post-harvest handling of seed collections:  
<http://brahmsonline.kew.org/Content/Projects/msbp/resources/Training/04-Post-harvest-handling.pdf>

Other sheets covering the following topics are available from

<http://brahmsonline.kew.org/msbp/Training/Resources>

- Protocol for comparative seed longevity testing
- Measuring seed moisture status using a hygrometer
- Selecting containers for long-term seed storage
- Low-cost monitors of seed moisture status
- Small-scale seed drying methods
- Equilibrating seeds to specific moisture levels
- Identifying desiccation-sensitive seeds
- Seed bank design: seed drying rooms
- Seed bank design: cold rooms for seed storage
- Cleaning seed collections for long-term conservation

## ENSCONET seed collecting manual for wild species

[http://ensconet.maich.gr/PDF/Collecting\\_protocol\\_English.pdf](http://ensconet.maich.gr/PDF/Collecting_protocol_English.pdf)

## Seed conservation: turning science into practice

<https://academic.oup.com/aob/article/95/5/888/201951>

## Collecting plant genetic diversity: Technical guidelines (Bioversity)

[http://cropgenebank.sgrp.cgiar.org/index.php?option=com\\_content&view=article&id=390&Itemid=557](http://cropgenebank.sgrp.cgiar.org/index.php?option=com_content&view=article&id=390&Itemid=557)

## FAO – Commission on Genetic Resources for Food and Agriculture

<http://www.fao.org/nr/cgrfa/en/>

## IUCN Red List Categories and Criteria (Version 3.1)

<https://iucn-csg.org/red-list-categories/>

## Plants of the World Online

<http://plantsoftheworldonline.org/>

For more information about the Crop Wild Relatives Project and to access the Harlan and de Wet Crop Wild Relatives checklist, please visit the website:

[www.cwrdiversity.org](http://www.cwrdiversity.org)



# Identification Keys

---

Interactive identification keys can be accessed using the links below.

[Kew Grassbase interactive identification key](#)

<http://www.kew.org/data/grasses-db/ident.htm>

[An Ecogeographical Study of the Genus \*Hordeum\* \(2nd edition\)](#)

[http://www.biodiversityinternational.org/fileadmin/biodiversity/publications/Web\\_version/271/begin.htm#Contents](http://www.biodiversityinternational.org/fileadmin/biodiversity/publications/Web_version/271/begin.htm#Contents)

# Seed Collecting Techniques

Michael Way and Kate Gold, Seed Conservation Department

Seed collecting from wild plants requires care, resourcefulness and determination. There are many different collecting techniques. The most appropriate technique will depend on the species, particularly the type of dispersal unit (fleshy fruit, dry fruit, individual seeds etc). This information sheet outlines the manual techniques most commonly used to make seed collections of adequate quality and quantity, for long term conservation.

## Hand picking of whole fruits

The most basic and flexible of techniques, hand picking or plucking, has many benefits. Consider though, if you can use a more efficient technique.

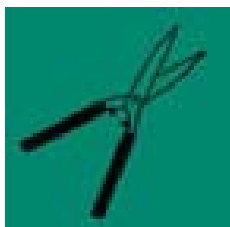


Plucking is particularly suitable when:

- target fruits can easily be selected by eye (e.g. due to colour or texture change of fruit coat, or swelling of fruit);
- non-target (e.g. immature or damaged) fruit cannot be excluded from the collection by more efficient techniques;
- fruits are easily accessible and collectors can tie buckets or similar containers around the waist, releasing both hands for collecting;
- collecting many-seeded fleshy or dry indehiscent fruits; and
- making small seed collections.

## Pruning clusters of fruit

This technique is typically used to collect tree seeds. Cut groups or clusters of fruits using secateurs or tree pruners. Assess for ripeness and damage before adding seeds to the collection.

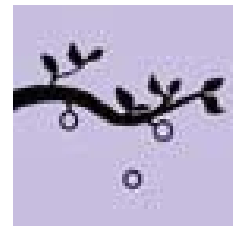


This is a very effective technique when:

- seed is clustered at the distal (terminal) parts of branches;
- the species is abundant and a small associated loss of branch and foliage is acceptable;
- seed is beyond reach of the collectors and has to be obtained using tree pruners.

## Shaking branches

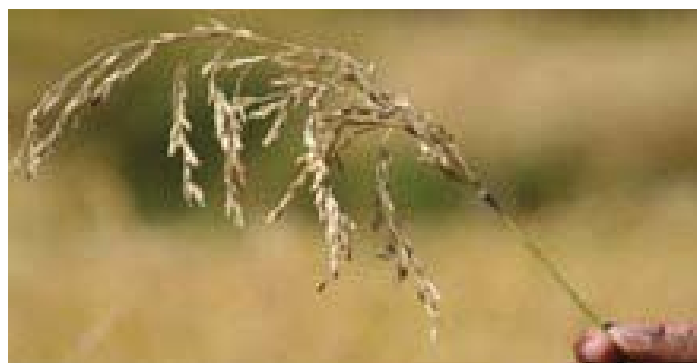
Careful shaking of branches will sometimes dislodge the best available seed, which can be collected in buckets or on a tarpaulin held or spread out beneath the plant. Start with gentle taps, and carefully check each sample of seed dislodged. Light shaking will often dislodge fully ripe fruits and seeds, leaving immature, poorly developed and damaged seeds to be retained on the parent plant. Too-heavy beating of branches may cause damage to the tree, and may also dislodge other plant material and associated insects, necessitating additional cleaning of the collection.



Shaking branches may be useful when collecting:

- dehiscent fruits with medium large seeds;
- seeds with irritant plumes (e.g. *Cercocarpus* of the Rosaceae);
- spiny trees such as *Prosopis* (Fabaceae);
- on level, open terrain suitable for tarpaulin use.

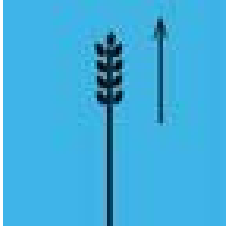
This technique may not be suitable for light, plumed seed from *Bombacaceae* and *Asclepiadaceae*, which may be carried away by air currents.



ABOVE: Stripping seed heads may be appropriate for grasses  
Credit: Global Crop Diversity Trust/Britta Skagerfält

## Stripping entire seed-heads

This is a popular technique for collecting seed from grasses and may be suitable for other species with erect inflorescences (seedheads). Grasp the seedheads at the base with a gloved hand and slide the hand upwards, dislodging many or all of the seeds. This technique may introduce a proportion of immature seeds into the collection. Such seeds might need further postharvest ripening which can be time consuming and is best avoided.

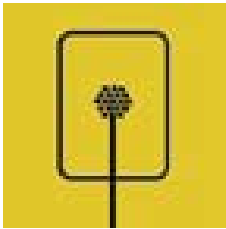


The stripping technique is most suitable for:

- dense, mono-specific stands of target species with no weed or other species present; and
- inflorescences which are completely and consistently at the natural dispersal stage.

## Bagging seed-heads

If there is frequent access to the collecting site, and if seeds would otherwise be lost, fix a well-tied mesh bag loosely over pre-dispersal seed heads. Seeds are captured as soon as they are shed, and can be periodically removed. This has been successfully used on a small scale, e.g. for collecting *Fouquieria* sp.



## Collecting from the ground

You will frequently find seeds on the ground below trees or shrubs, but they will often be damaged by pests or pathogens. The seeds may have been on the ground for several months, and could even date from the previous year. Such seed will have aged and life-span in storage will be reduced. Inspect the seed carefully, noting any variation in the fruit, seed coat and internal tissues.



In general, only collect from the ground when:

- the parent tree(s) can be determined without doubt;
- you are certain that you are collecting recently dispersed seeds;
- seeds have not suffered significant damage from pests or pathogens; and
- other techniques or collecting options are unsuitable.

## Collecting fleshy fruits

- Collect fleshy fruits directly into strong plastic bags or tubs with as much air as possible.
- Pack the bags in a rigid plastic container to ensure that the fruits are not squashed and help prevent them getting too hot and fermenting during transit.
- You may need to remove the seeds from fleshy fruits either during or immediately after the field trip.



ABOVE Collecting small seeds into paper bags  
Credit: Ruth Harker/ RBG Kew

## Containers

Collect into buckets, cloth or paper bags, and check each person's sample carefully before combining into a single population collection.

Using buckets has the advantage of allowing you to monitor the quality of the collection whilst associated insects disperse freely.

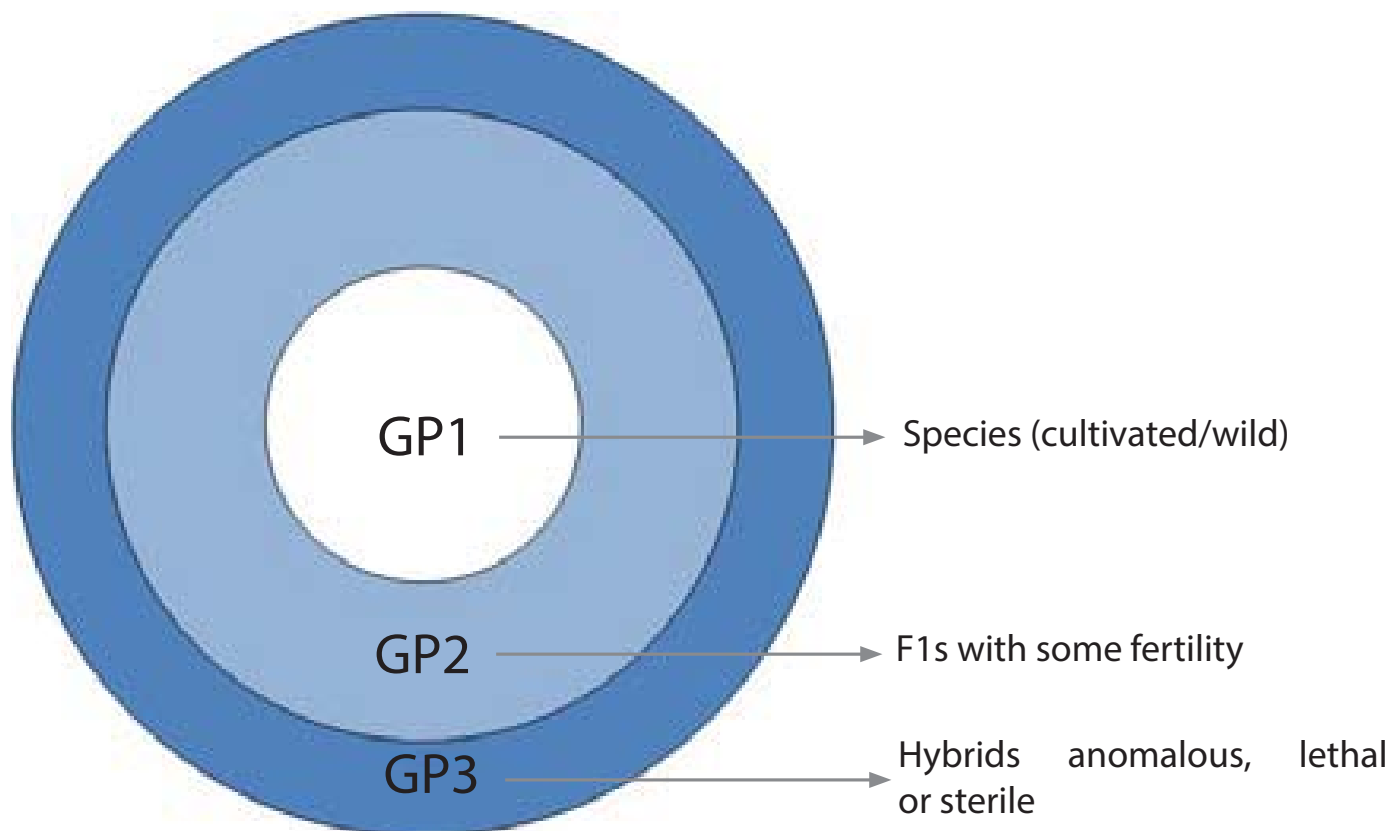
Place collections of dry, ripe seed into cloth or paper bags for transit. Store any awned seed or hooked fruit, that would damage or get stuck in cotton bags, in cardboard boxes or strong paper bags. Never collect or store seeds in plastic bags.

Label all seed containers inside and out with a unique collection number, and seal them securely. It is best to prepare sufficient labels before filling the containers.

Each target species in this guide is a wild relative of a crop. On each species profile it is indicated how closely related the target species is to the crop using either the Gene Pool concept or the Taxon Group concept. Species more closely related to the crop are higher priorities for collecting.

## Gene Pool Concept

Harlan and de Wet, 1971



## Taxon Group Concept

Maxted et al. 2006

Taxon Group 1 – cultivated/wild form of the crop

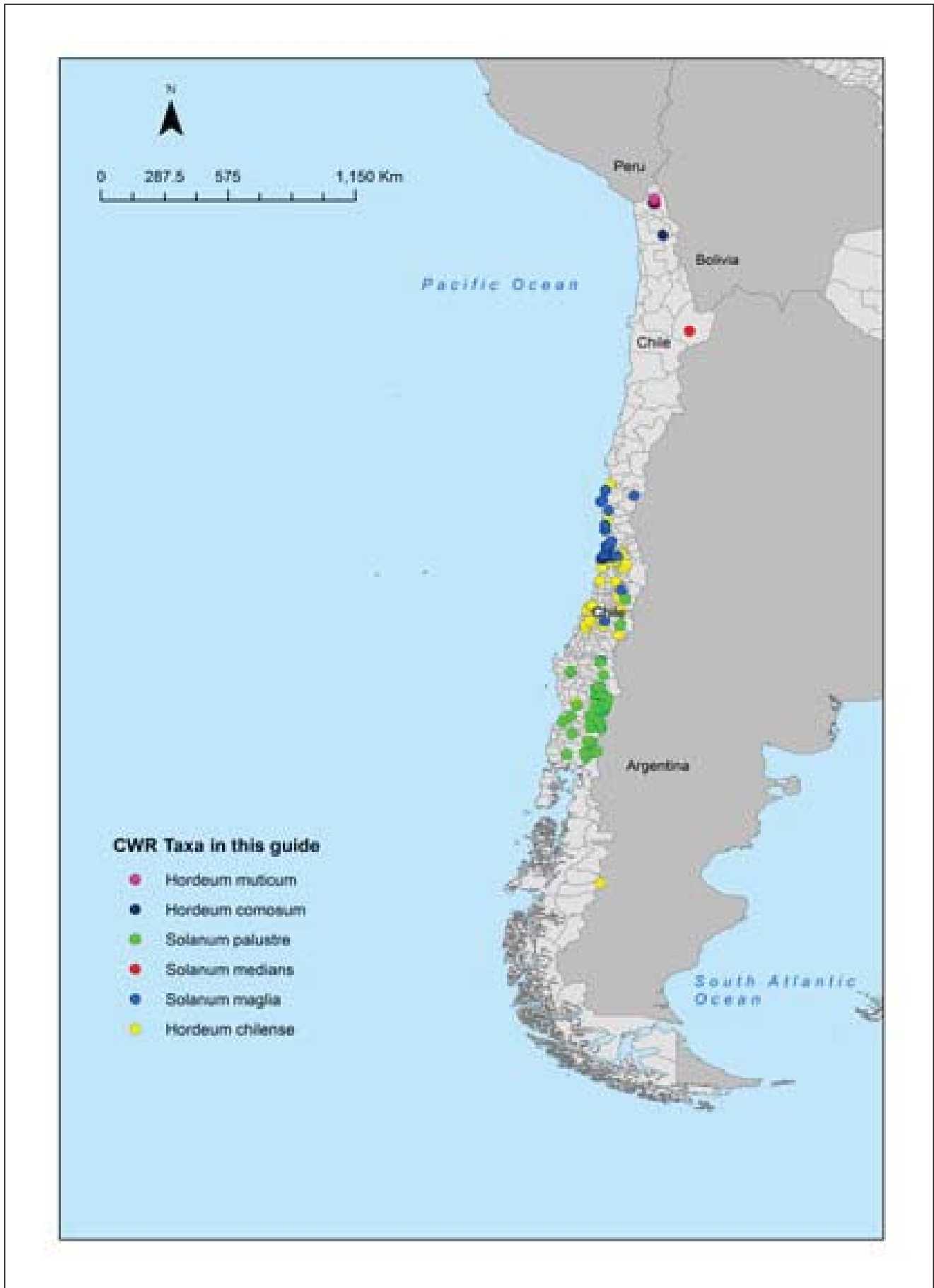
Taxon Group 2 – species in same series/section as crop

Taxon Group 3 – species in same subgenus as crop

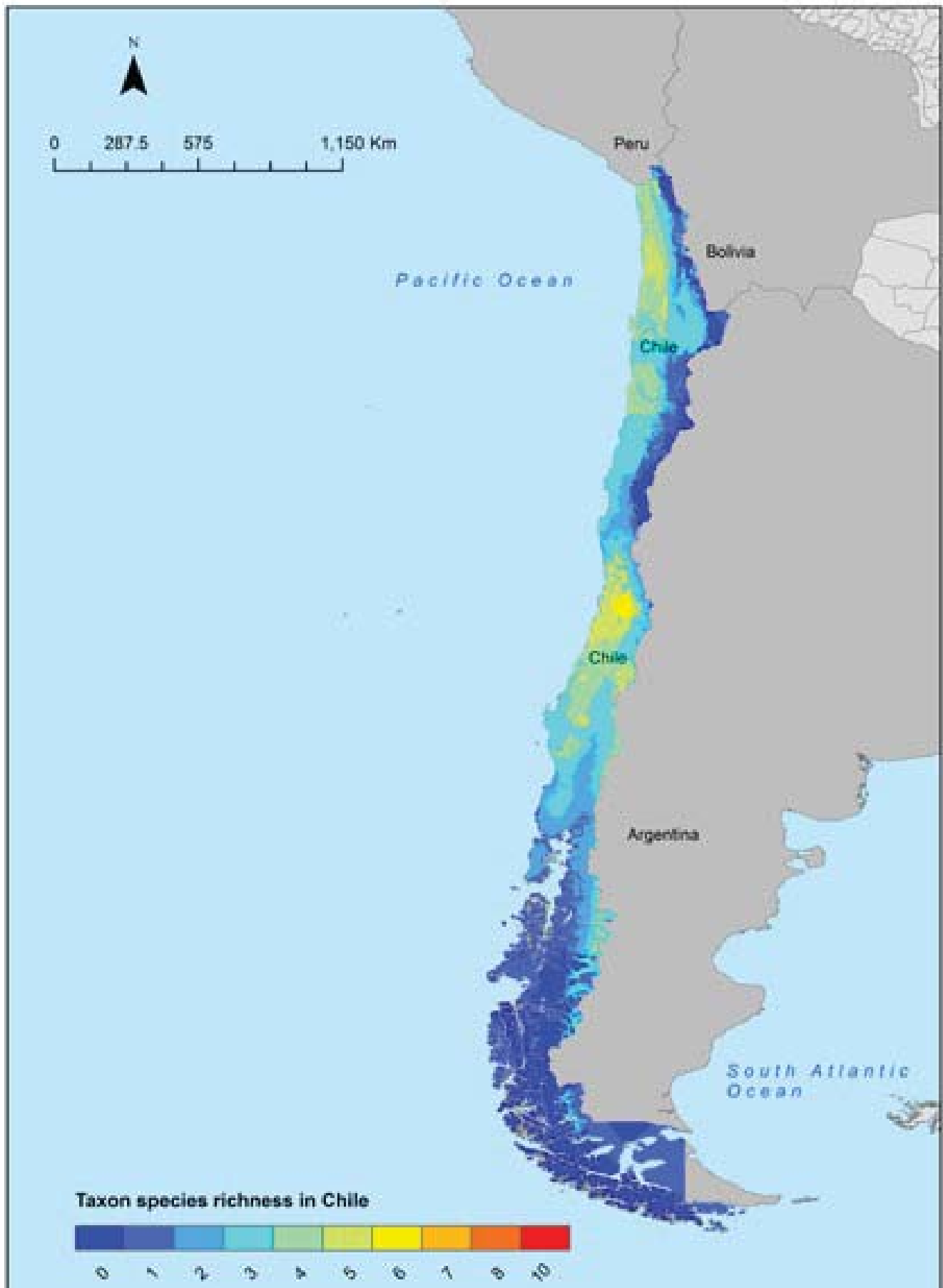
Harlan, J. and J. de Wet (1971). Towards a rational classification of cultivated plants. *Taxon* 20: 509-517.

Maxted, N., B.V. Ford-Lloyd, S.L. Jury, S.P. Kell and M.A. Scholten (2006). Towards a definition of a crop wild relative. *Biodiversity and Conservation* 14: 1-13.

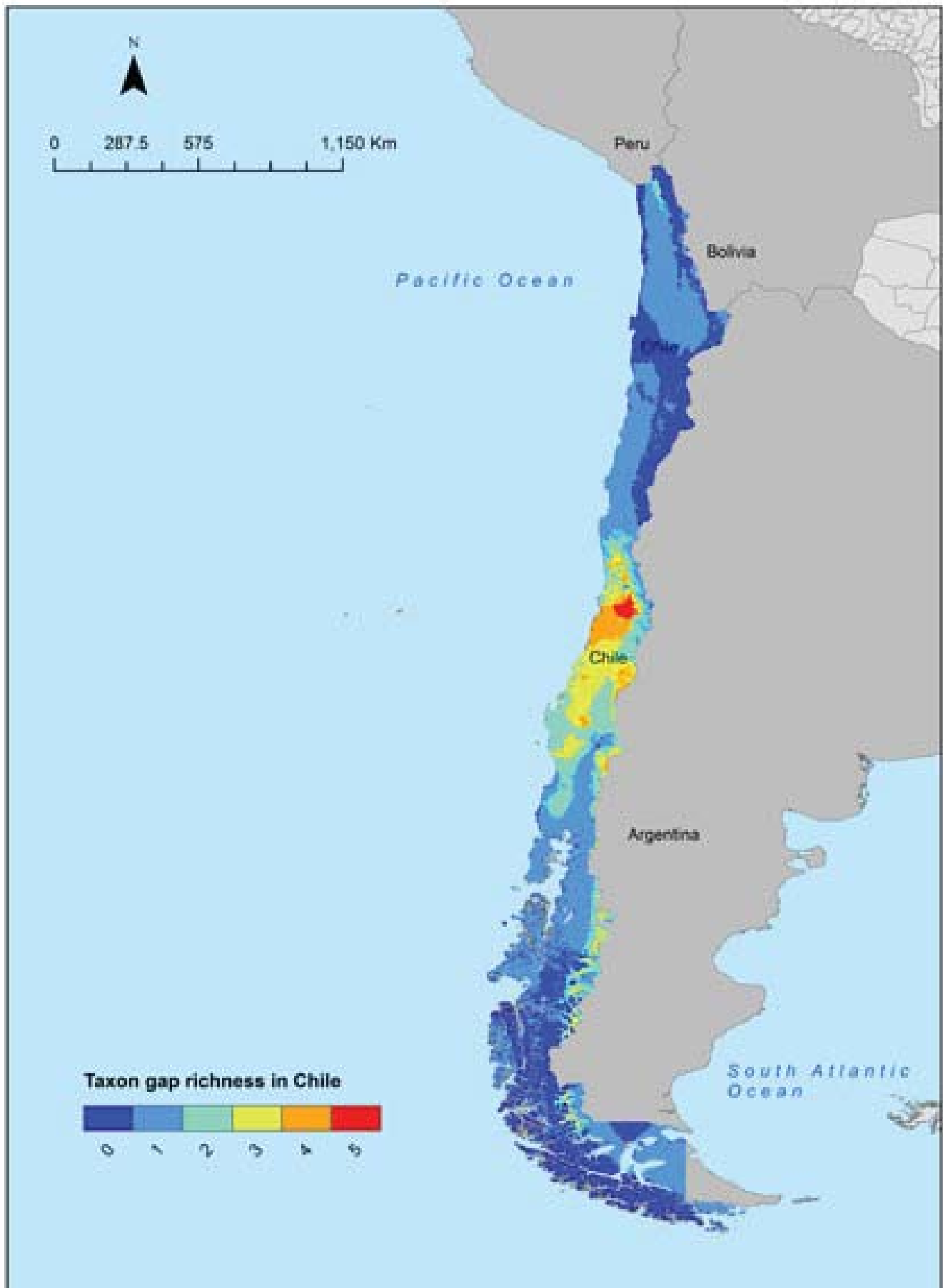
Occurences of all taxa in this guide, as a point distribution



## Species richness



## Gap richness



# Species in this guide

Species profiles are arranged alphabetically by family and taxon.

Family	Taxon	Genepool	Collection Priority	Sheet
Fabaceae	Medicago arborea	Alfalfa	Low	1
Poaceae	Eleusine tristachya	Finger Millet	High	2
Poaceae	Hordeum chilense	Barley	Low	3
Poaceae	Hordeum comosum	Barley	Low	4
Poaceae	Hordeum fuegianum	Barley	Low	5
Poaceae	Hordeum halophilum	Barley	Low	6
Poaceae	Hordeum lechleri	Barley	Low	7
Poaceae	Hordeum muticum	Barley	Low	8
Poaceae	Hordeum parodii	Barley	Low	9
Poaceae	Hordeum patagonicum	Barley	Low	10
Poaceae	Hordeum pubiflorum	Barley	Low	11
Poaceae	Hordeum tetraploidum	Barley	Low	12
Solanaceae	Solanum etuberosum	Potato	Low	13
Solanaceae	Solanum fernandezianum	Potato	Low	14
Solanaceae	Solanum infundibuliforme	Potato	Low	15
Solanaceae	Solanum maglia	Potato	High	16
Solanaceae	Solanum medians	Potato	Low	17
Solanaceae	Solanum palustre	Potato	Low	18





# Phenology table

Taxon	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<i>Solanum medians</i> Bitter	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
<i>Solanum palustre</i> Schltld.	Orange	Orange	Green	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange

KEY

Species in flower



Species in fruit



Data gathered from literature and herbarium specimens

Gene Pool Tertiary relative of *Medicago sativa* L.

**HABIT:** Woody perennial shrub, 1-3(-4) m, young twigs and leaves finely and densely pubescent with whitish simple hairs, aging twig surfaces cracking longitudinally to reveal developed bark.

**LEAVES:** Leaflets 10-20 mm long, obovate to ovate, sometimes truncate or obcordate, cunate at base.

**INFLORESCENCE:** Very short, capitate raceme of 4-5(-8) crowded flowers.

**FLOWERS:** (10)12-15 mm long, orange-yellow. Calyx about as long as fruited pedicel; corolla more than twice length of calyx.

**FRUIT:** (5)10-15 mm in diameter with a central opening at least 1 mm wide, without dorsal suture spines, with short, appressed hairs; 0.5-1.5 coils, mostly in a flat plane; coil face with 20-30 radial veins anastomosing on the outer half, then reaching the dorsal suture.

**SEEDS:** 2-8 per pod, 3.5-4(4.5) mm long, brownish or yellow-brown, reniform, separated by a spongy transverse fruit septum, radicle equal to half seed length or slightly more.

**Habitat:**

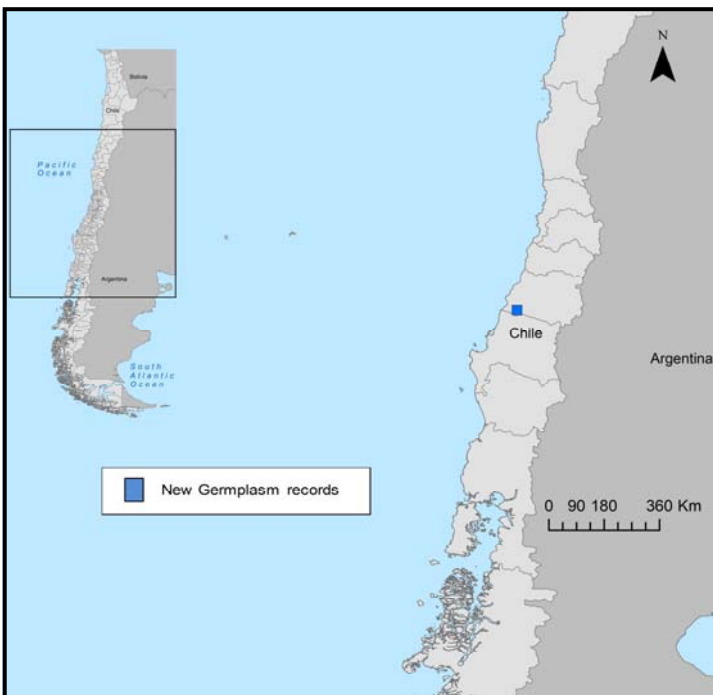
Hills, steep cliffs, seashore rocks, especially on limestone.

**Distribution:**

Native to Parts of Europe; Introduced to Chile, Australia, New Zealand, South Africa, Ethiopia, China.

**Altitude:** up to 800 m

<i>Medicago arborea</i>	May be confused with: <i>Medicago strasseri</i> , <i>Medicago citrina</i>
Pods: 10-15 mm; Seed 3.5-4.7 mm long; Flowers yellow to orange-yellow.	<i>M. strasseri</i> : Pods 5-7 mm; Seed 2-2.5 mm; Fl.: yellow to orange-yellow. <i>M. citrina</i> : Pods 10-15 mm; Seed 3.5-4.7 mm; Fl. lemon-yellow.



All populations priority  
for collection.

**References:** Small, E. (2011), Alfalfa and Relatives; Evolution and Classification of *Medicago*.

Gene Pool Tertiary relative of *Medicago sativa* L.



No seed image available



1-3(-4) m



**HABIT:** Perennial; short-lived; caespitose. Culms geniculately ascending, or decumbent; slender; 10-45 cm long. Culm-internodes elliptical in section. Leaves mostly basal. Leaf-sheaths keeled; outer margin glabrous. Ligule a ciliate membrane. Leaf-blades 6-25 cm long; 1-4 mm wide.

**INFLORESCENCE:** Composed of racemes.

**RACEMES:** 2-3; digitate; linear, or oblong; unilateral; 1-4 cm long; 10-16 mm wide. Rhachis broadly winged.

**SPIKELETS:** Appressed; solitary. Fertile spikelets sessile.

**FERTILE SPIKELETS:** Spikelets comprising 6-13 fertile florets; with diminished florets at the apex. Spikelets ovate; laterally compressed; 5-9 mm long; 4-6 mm wide; breaking up at maturity; disarticulating below each fertile floret.

**GLUMES:** Persistent. Lower glume lanceolate; 1.5-2 mm long; 0.5 length of upper glume; membranous; 1-keeled; 1-3 veined. Lower glume apex acute. Upper glume elliptic; 3-4 mm long; 0.7-0.8 length of adjacent fertile lemma.

**FLORETS:** Fertile lemma ovate; 4-5 mm long; membranous; keeled; 3-veined (excluding subsidiaries). Lemma midvein with contiguous subsidiary veins (3-veined). Lemma apex acute. Palea 0.66 length of lemma; 2-veined.

**FLOWER:** Lodicules 2; cuneate; fleshy.

**FRUIT:** Caryopsis with free soft pericarp; orbicular; 2 mm long; dark brown; rugose.

**Habitat:**

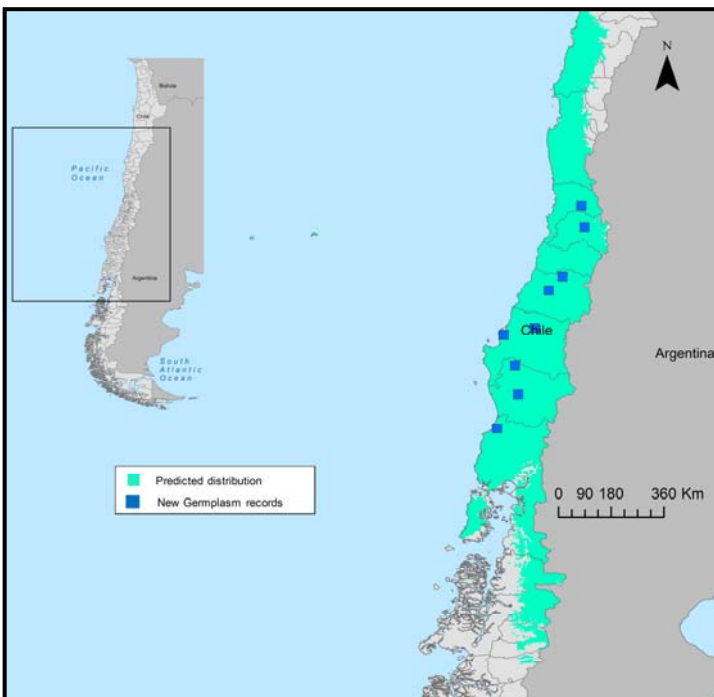
In open anthropic areas and grasslands in the Atlantic Rainforest and Pampa phytogeographic domains.

**Distribution:**

Africa; Europe; temperate Asia; Australasia; and South America. In Brazil in the Central West (MS), Southeast (SP), and South (PR, RS, SC).

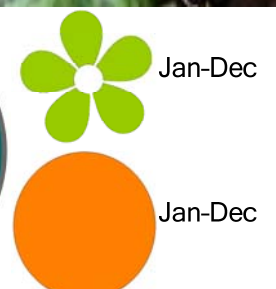
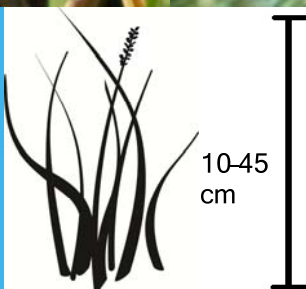
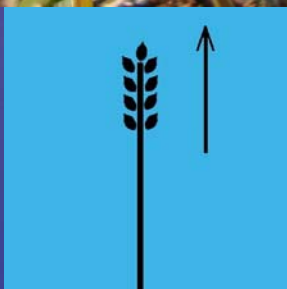
**Altitude:** 0 - 1350 m

<i>Eleusine tristachya</i>	May be confused with: <i>Eleusine indica</i>
Spikes less than 3 cm, 7-10 mm broad; backs curved inward towards lemma.	Spikes usually more than 3 cm long, usually less than 7 mm broad; backs of lemmas usually straight or very slightly curved towards apex.



All populations priority  
for collection.

**References:** GrassBase - The Online World Grass Flora. <http://www.kew.org/data/grasses-db.html>  
Eleusine in Flora do Brasil 2020. JBRJ. <http://floradobrasil.jbrj.gov.br/reflora/floradobrasil/FB13192>



Gene Pool Tertiary relative of *Hordeum vulgare* L.

**HABIT:** Perennial; caespitose. Butt sheaths pubescent; persistent and investing base of culm. Culms geniculately ascending; 20-80 cm long. Leaf-sheath auricles absent. Ligule an eciliate membrane; 0.4-1.8 mm long. Leaf-blades 4-17 cm long; 2-5 mm wide. Leaf-blade surface smooth, or scaberulous; glabrous, or pilose.

**INFLORESCENCE:** Composed of racemes.

**RACEMES:** 1; single; linear; bilateral; 4-8 cm long; 4-7 mm wide. Rhachis fragile at the nodes; narrowly winged; flattened.

**SPIKELETS:** In threes. Fertile spikelets sessile; 1 in the cluster. Companion sterile spikelets pedicelled; 2 in the cluster.

**STERILE SPIKELETS:** Companion sterile spikelets well-developed; containing empty lemmas; lanceolate; dorsally compressed; 10-22 mm long. Companion sterile spikelet glumes subulate.

**FERTILE SPIKELETS:** Spikelets comprising 1 fertile florets. Spikelets lanceolate; dorsally compressed; 6.5-11.7 mm long.

**GLUMES:** Lower glume linear; 4.2-7.5 mm long; 1 length of upper glume. Lower glume surface scabrous. Lower glume apex awned; 1 -awned. Lower glume awn 4-18 mm long.

**FLORETS:** Fertile lemma lanceolate; 6.5-11.7 mm long; without keel; 5 -veined.

**FLOWER:** Ovary pubescent on apex.

**FRUIT:** Caryopsis with adherent pericarp; sulcate on hilar side; hairy at apex. Hilum linear.

**Habitat:**

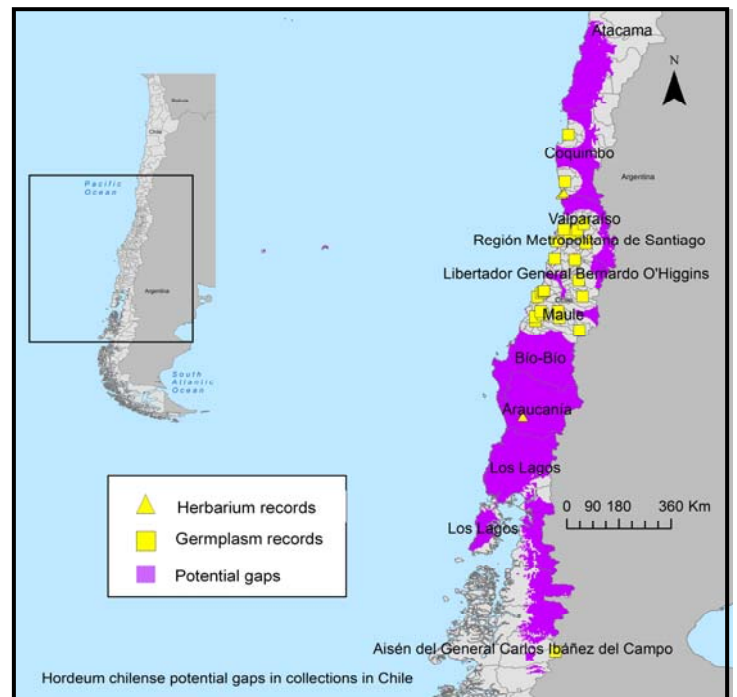
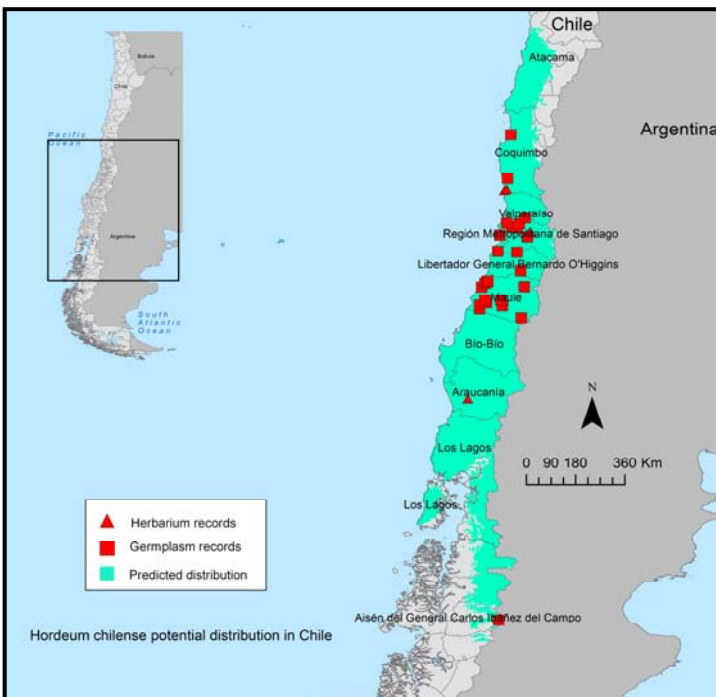
Roadsides, pastures, mesic as well as xeric habitats.

**Distribution:**

Central Chile and the westernmost parts of the provinces of Neuquen and Rio Negro, Argentina.

**Altitude:** up to 1000 m

<i>Hordeum chilense</i>	May be confused with:
This species is morphologically similar to other <i>Hordeum</i> species that are not found in South America.	



**References:** von Bothmer, R. et al. (1991). An ecological Study of the Genus *Hordeum*.

Gene Pool Tertiary relative of *Hordeum vulgare* L.



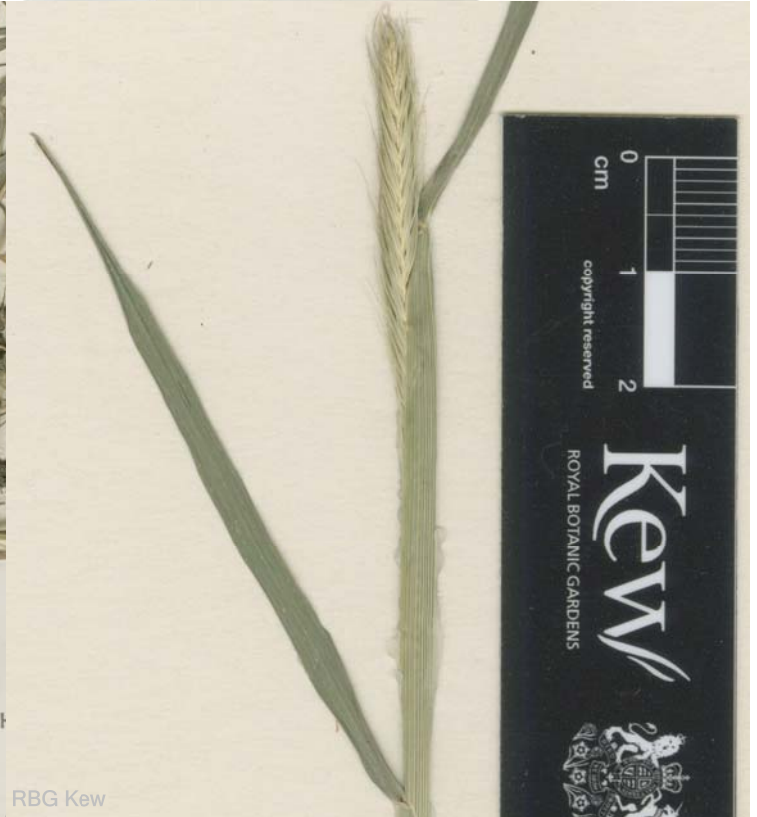
Jardín Botánico Nacional, Viña del Mar



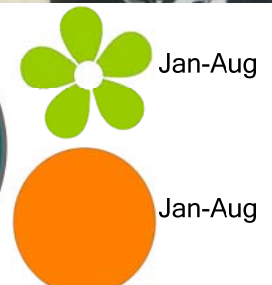
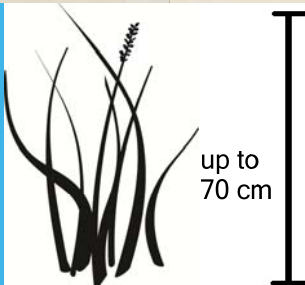
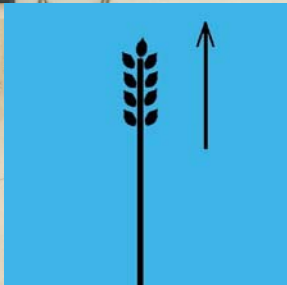
RBG Kew



RBG Kew



RBG Kew





Gene Pool Tertiary relative of *Hordeum vulgare* L.

**HABIT:** Perennial; caespitose. Butt sheaths purple; persistent and investing base of culm; with compacted dead sheaths. Culms 10-70 cm long; Leaf-blade surface pubescent; hairy on both sides.

**INFLORESCENCE:** Composed of racemes; exerted, or embraced at base by subtending leaf. Racemes 1; single; bilateral; 4-10 cm long. Spikelets in threes. Fertile spikelets sessile; 1 in the cluster. Companion sterile spikelets pedicelled; 2 in the cluster. Pedicels oblong; 1-1.5 mm long. Sterile spikelets, dorsally compressed; 20-30 mm long; shorter than fertile, or as long as fertile; fertile spikelets, 1 fertile florets; with a barren rhachilla extension. Spikelets lanceolate; dorsally compressed; 20-35 mm long

**GLUMES:** Collateral; similar; exceeding apex of florets; gaping. Lower glume subulate; 20-35 mm long; 1 length of upper glume; coriaceous. Lower glume surface scabrous. Upper glume subulate; 20-35 mm long; coriaceous. Upper glume surface scabrous.

**FLORETS:** Fertile lemma lanceolate; 7-15 mm long; coriaceous; yellow, or purple; surface scaberulous; rough above, apex acuminate; Principal lemma awn 15-25 mm long overall

**FLOWER:** Lodicules 2; 1-2 mm long; ciliate. Anthers 3; 2-4.3 mm long. Ovary pubescent on apex.

**FRUIT:** Caryopsis with adherent pericarp; hairy at apex. Hilum linear.

**Habitat:**

Grows in dry habitats.

**Distribution:**

South America.

**Altitude:** up to 4000 m

<i>Hordeum comosum</i>	May be confused with: <i>H. procerum</i> , <i>H. lechleri</i> , <i>H. pubiflorum</i> , <i>H. halophilum</i>
10-45 cm tall, Spikes 40-100 cm, Lemma glabrous.	



**References:** von Bothmer, R. et al. (1991). An ecological Study of the Genus *Hordeum*.

Gene Pool Tertiary relative of *Hordeum vulgare* L.



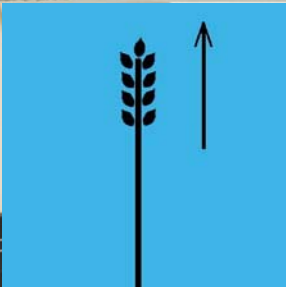
Mihai Costea

RBG Kew



RBG Kew

RBG Kew



10-45 cm



Oct-Mar

Oct-Mar

Gene Pool Tertiary relative of *Hordeum vulgare* L.

**HABIT:** Perennial; caespitose; clumped densely. Rhizomes absent, or short; leaf-sheath auricles absent.

**INFLORESCENCE:** Composed of racemes. Peduncle 15-32 cm long; Racemes 1; single; bilateral; 4-7 cm long; 4-5 mm wide; bearing 20-45 fertile spikelets on each; spikelets in threes. Fertile spikelets sessile; 1 in the cluster; companion sterile spikelets pedicelled; 2 in the cluster; pedicels oblong; curved; 1.5-3.3 mm long. Sterile spikelets; well-developed; containing empty lemmas, or male; dorsally compressed; 15-15.4 mm long. Fertile spikelets comprising 1 fertile florets; with a barren rhachilla extension; lanceolate; dorsally compressed; 10.2-15.4 mm long; 0.9-1.6 mm wide.

**GLUMES:** Collateral; similar; exceeding apex of florets; gaping. Lower glume subulate; 10.2-15.4 mm long; 1 length of upper glume; coriaceous. Upper glume subulate; 10.2-15.4 mm long; coriaceous.

**FLORETS:** Lemma lanceolate; 6.7-9.3 mm long; coriaceous; without keel; lemma surface glabrous, or pilose, apex acuminate; principal lemma awn 3.8-8.4 mm long overall. Rhachilla extension 4.2-6.5 mm long; pilose.

**FLOWER:** Lodicules 2; 0.9-1.4 mm long; glabrous, or ciliate; obtuse, or acute. Anthers 3; 1.5-2.1 mm long; yellow, or purple. Ovary pubescent on apex.

**FRUIT:** Caryopsis with adherent pericarp; hairy at apex. Hilum linear.

**Habitat:**

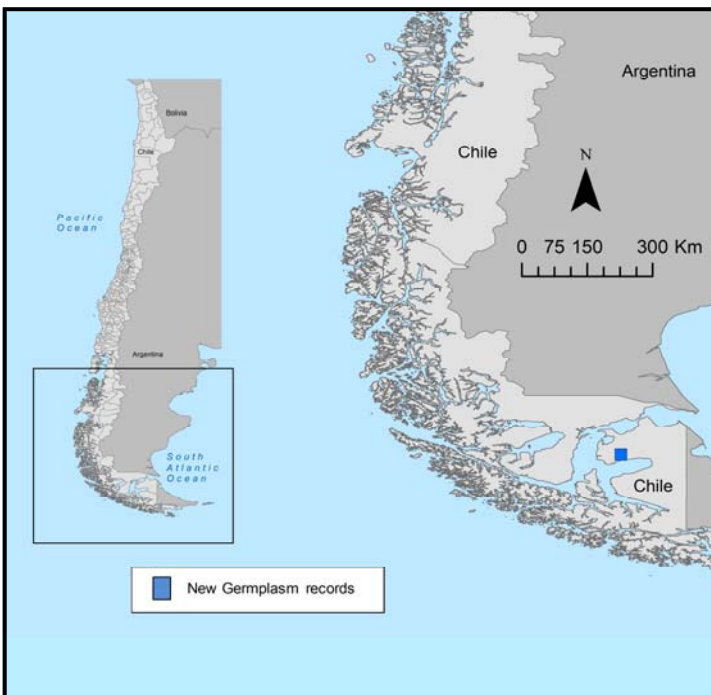
Meadows and grasslands, often in riverbeds, also near the sea.

**Distribution:**

Argentina, Chile.

**Altitude:** up to 100 m

<i>Hordeum fuegianum</i>	May be confused with:
	Slender forms of <i>H. fuegianum</i> resemble <i>H. parodii</i> and <i>H. tetraploidum</i> .

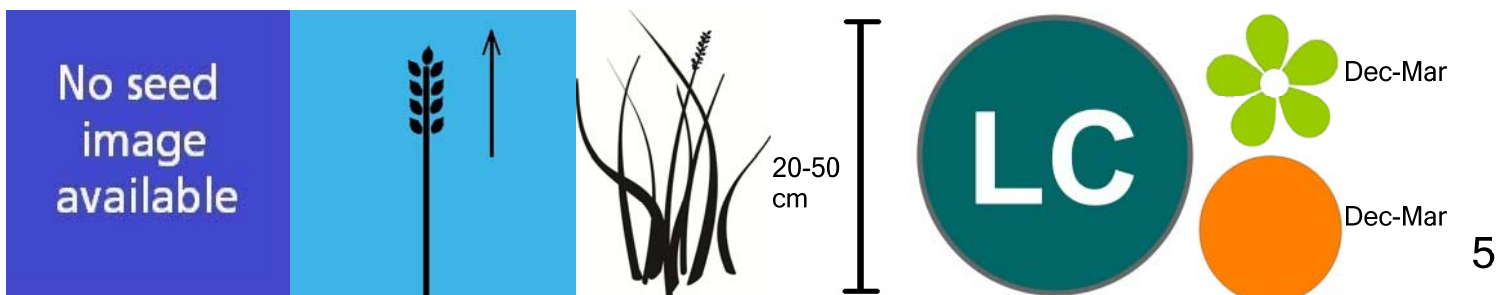


All populations priority for collection.

**References:** von Bothmer, R. et al. (1991). An ecological Study of the Genus *Hordeum*.

NO IMAGE AVAILABLE

If you know of an image or link to an image of this species please let us know [cropwildrelatives@kew.org](mailto:cropwildrelatives@kew.org)



Gene Pool Tertiary relative of *Hordeum vulgare* L.

HABIT: Perennial; up to 40 cm tall, forming loose tufts.

INFLORESCENCE: Culms erect to genticulate, slender; nodes glabrous; leaves flat, sometimes involute, shortly pubescent on the adaxial side; auricles lacking; spikes 25-50(-80) mm long, laterally compressed, reddish; central spikelet sessile, glumes 10-20 mm long, setaceous, spreading at maturity.

FLORETS: Lemmas glabrous, rarely pubescent at the apex, awn of lemma 6-10 mm long; anthers 0.8-1.4 mm long, violet; lateral spikelets sterile; glumes setaceous; lemma including awn 4-5 mm long.

**Habitat:**

Lowland to high mountain meadows, in both saline and fresh water environments.

**Distribution:**

From Tierra del Fuego northwards on both sides of the Andes through Argentina and Chile. Bolivia and Peru.

Altitude: up to 4000 m

*Hordeum halophilum*

May be confused with:

*H. procerum*, *H. comosum*, *H. pubiflorum*, *H. lechleri*

Up to 20 cm tall, spikes 20-30 cm, 8-10 cm.

Up to 40 cm tall, 25-50 cm, glumes 10-20 mm long.



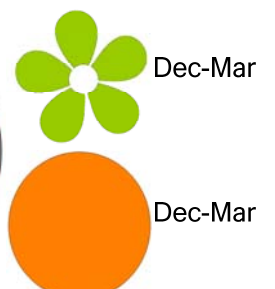
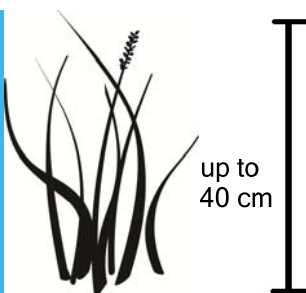
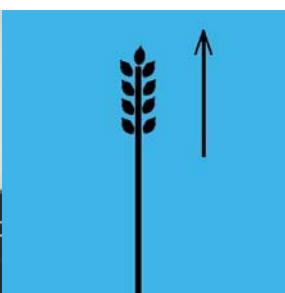
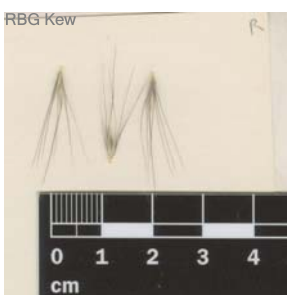
All populations priority for collection.

References: von Bothmer, R. et al. (1991). An ecological Study of the Genus *Hordeum*.

Gene Pool Tertiary relative of *Hordeum vulgare* L.



RBG Kew



Gene Pool Tertiary relative of *Hordeum vulgare* L.

**HABIT:** Perennial; caespitose. Culms geniculately ascending; 25-65 cm long. Ligule an eciliate membrane. Leaf-blades flat, or convolute; 1-3 mm wide. Leaf-blade surface pilose; hairy on both sides.

**INFLORESCENCE:** Composed of racemes. Racemes 1; single; bilateral; 5-12 cm long. Rhachis fragile at the nodes; flattened; pubescent on margins. Spikelets in threes. Fertile spikelets sessile; 1 in the cluster. Companion sterile spikelets pedicelled; 2 in the cluster. Pedicels oblong; 1 mm long. Sterile spikelets containing empty lemmas, or male; lanceolate; 27-55 mm long. Companion sterile spikelet glumes similar in width; subulate; 27-55 mm long; scabrous. Fertile spikelets comprising 1 fertile florets; with a barren rhachilla extension.

**GLUMES:** Collateral; similar; exceeding apex of florets; gaping. Lower glume subulate; 27-55 mm long; 1 length of upper glume; coriaceous. Lower glume surface scabrous. Upper glume subulate; 27-55 mm long; coriaceous. Upper glume surface scabrous.

**FLORETS:** Fertile lemma lanceolate; 8-10 mm long; coriaceous; without keel; 5 -veined. Lemma surface asperulous; rough above, margins scabrous, apex acuminate; principal lemma awn 20-45 mm long overall.

**FLOWER:** Lodicules 2; 1-1.5 mm long; ciliate.

**FRUIT:** Caryopsis with adherent pericarp; 5 mm long; hairy at apex. Hilum linear.

**Habitat:**

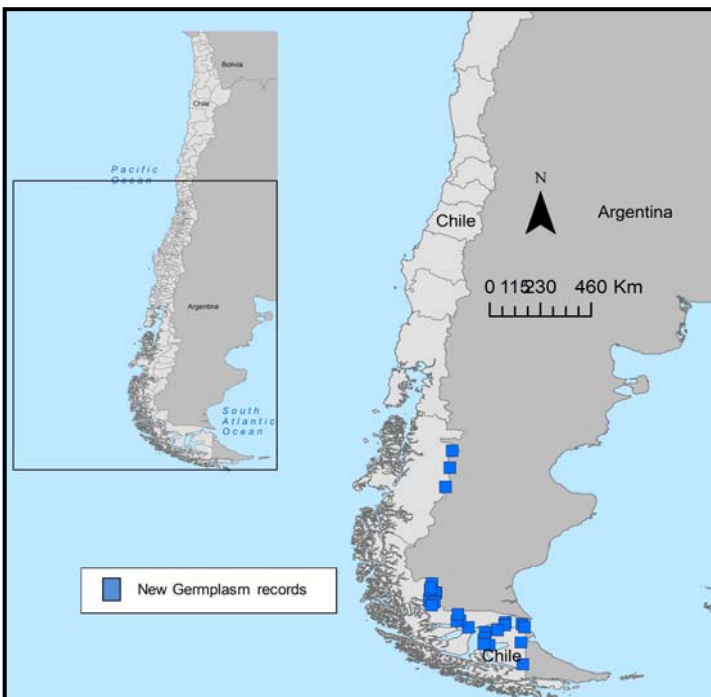
River valleys, meadows, roadsides and disturbed areas.

**Distribution:**

Chile and Argentina.

**Altitude:** up to 2000 m

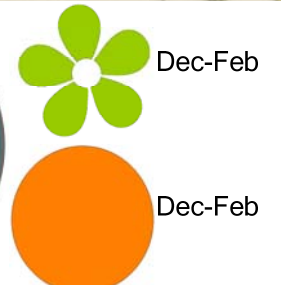
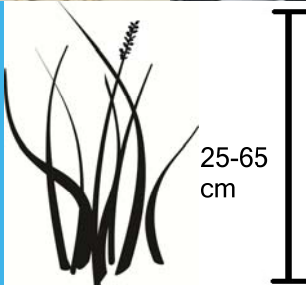
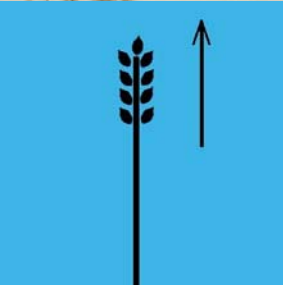
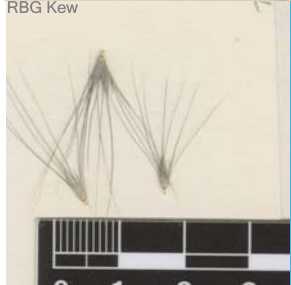
<i>Hordeum lechleri</i>	May be confused with: <i>H. procerum</i> , <i>H. comosum</i> , <i>H. pubiflorum</i> , <i>H. halophilum</i>
25-65 cm tall; Spikes 50-120 mm long; Lemma scabrid.	



All populations priority  
for collection.

**References:** von Bothmer, R. et al. (1991). An ecological Study of the Genus *Hordeum*.

Gene Pool Tertiary relative of *Hordeum vulgare* L.





Gene Pool Tertiary relative of *Hordeum vulgare* L.

**HABIT:** Perennial; Culms erect, or geniculately ascending; up to 70 cm long; 2-6 -noded. Leaf-blades 3-12 cm long; 1.5-3 mm wide, surface scabrous; glabrous, or pilose.

**INFLORESCENCE:** Racemes 1; single; bilateral; 20-90 cm long. Rhachis fragile at the nodes; flattened. Spikelet packing broadside to rhachis; spikelets in threes. Fertile spikelets sessile; 1 in the cluster. Companion sterile spikelets pedicelled; 2 in the cluster. Pedicels oblong; 1-2.5 mm long.

**STERILE SPIKELETS:** Companion sterile spikelets well-developed; containing empty lemmas, or male; lanceolate; dorsally compressed; 4-8 mm long; shorter than fertile; deciduous with the fertile. Fertile spikelets: Comprising 1 fertile florets; without rhachilla extension, or with a barren rhachilla extension. Spikelets lanceolate; dorsally compressed; 4-8 mm long.

**GLUMES:** Collateral; similar; reaching apex of florets, or shorter than spikelet. Lower glume subulate; 4-8 mm long.

**FLORETS:** Fertile lemma elliptic; 4-7 mm long; coriaceous; without keel; Lemma lateral veins obscure, surface scabrous; rough above, apex acuminate.

**FLOWER:** Lodicules 2; ciliate.

**FRUIT:** Caryopsis with adherent pericarp; 2.9-3.6 mm long; hairy at apex.

**Habitat:**

Wet Andean pastures or somewhat drier puna steppes.

**Distribution:**

Argentina, Chile, Bolivia, Peru, Ecuador and Colombia.

**Altitude:** Above 3000 m

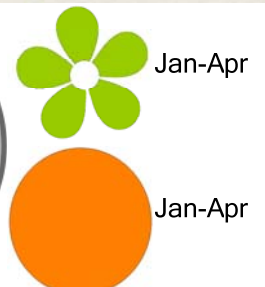
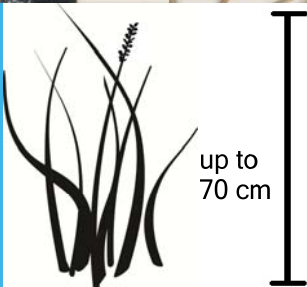
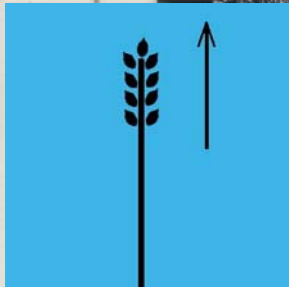
<i>Hordeum muticum</i>	May be confused with: <i>Hordeum pubiflorum</i>
Glumes 4 - 8 mm	Similar to short-awned and short-glumed forms of <i>H. pubiflorum</i> . Glumes normally 10 - 25 mm.

Reported from Chile  
but no localities  
known

All populations priority  
for collection.

References: <http://www.kew.org/data/grasses-db/www/imp05444.htm>

Gene Pool Tertiary relative of *Hordeum vulgare* L.



Gene Pool Tertiary relative of *Hordeum vulgare* L.

**HABIT:** Perennial; caespitose. Culms 40-100 cm long. Leaf-sheaths pubescent. Leaf-sheath auricles absent, or falcate. Ligule an eiliate membrane; 1 mm long; truncate. Leaf-blades 7-11 cm long; 4.5-7 mm wide; glaucous.

**INFLORESCENCE:** Composed of racemes, Racemes 1; single; bilateral; 8-15 cm long; spikelet packing broadside to rachis; spikelets in threes; fertile spikelets sessile; 1 in the cluster; Pedicels oblong; curved; 1-1.5 mm long; fertile spikelets comprising 1 fertile florets; without rhachilla extension, or with a barren rhachilla extension; spikelets lanceolate; 6-9 mm long.

**GLUMES:** Collateral; similar; shorter than spikelet, or reaching apex of florets; lower glume lanceolate; 5.5-8 mm long; 1 length of upper glume; coriaceous; lower glume surface scabrous; lower glume apex setaceously attenuate. Upper glume lanceolate; 5.5-8 mm long; coriaceous; upper glume surface scabrous.

**FLORETS:** Fertile lemma lanceolate; 7-15 mm long; coriaceous; yellow, or purple; surface scaberulous; rough above, apex acuminate; Principal lemma awn 15-25 mm long overall; Palea surface scabrous. Rhachilla extension 3-5.5 mm long.

**FLOWER:** Lodicules 2; 1-1.8 mm long; ciliate; acute. Anthers 3; 3-4 mm long. Ovary pubescent on apex.

**FRUIT:** Caryopsis with adherent pericarp; hairy at apex. Hilum linear.

**Habitat:**

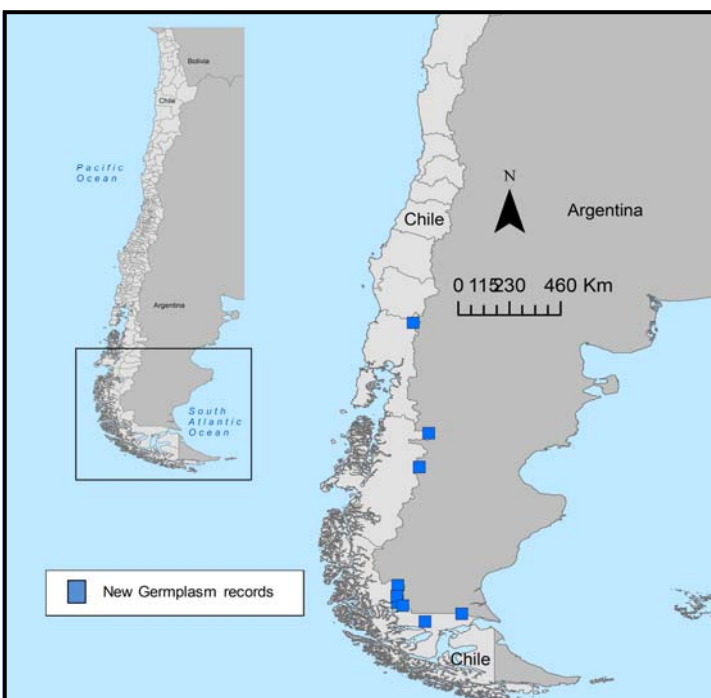
Grows in dry habitats.

**Distribution:**

South America.

**Altitude:** up to 4000 m

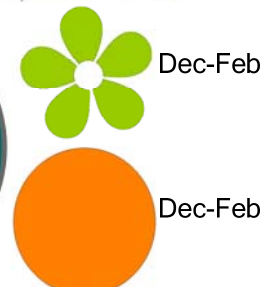
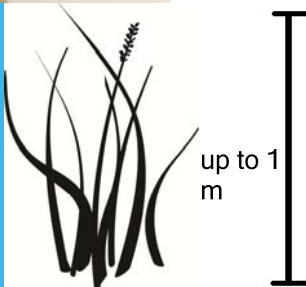
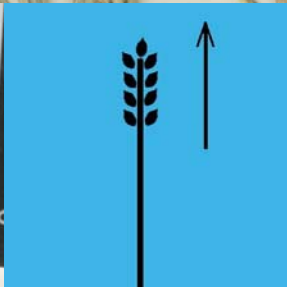
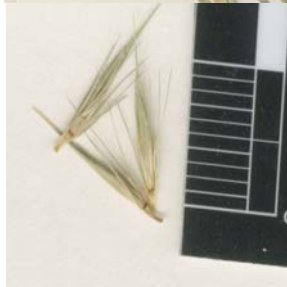
<i>Hordeum parodii</i>	May be confused with: <i>Hordeum tetraploidum</i>
Up to 80 cm tall; Spikes 40-80 mm long; Culms slender to coarse.	Up to 100 cm tall; Spikes 45-100 mm long; Culms erect.



All populations priority  
for collection.

**References:** von Bothmer, R. et al. (1991). An ecological Study of the Genus *Hordeum*.

Gene Pool Tertiary relative of *Hordeum vulgare* L.



Gene Pool Tertiary relative of *Hordeum vulgare* L.

**HABIT:** Perennial; caespitose. Culms 3-10 cm long; 1-2 -noded. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane; 0.3-0.4 mm long. Leaf-blades curved; filiform; 1-3 cm long; 0.5-1 mm wide; stiff; glaucous. Leaf-blade surface scabrous.

**INFLORESCENCE:** Composed of racemes; exserted, or embraced at base by subtending leaf. Racemes 1; single; bilateral; 1.5-2 cm long. Spikelets in threes. Fertile spikelets sessile; 1 in the cluster; companion sterile spikelets well-developed; containing empty lemmas; lanceolate; 7-9 mm long. Fertile spikelets comprising 1 fertile florets; with a barren rhachilla extension; lanceolate.

**GLUMES:** Collateral; similar; exceeding apex of florets; gaping. Lower glume subulate; 7-9 mm long. Lower glume surface puberulous. Upper glume subulate; 7-9 mm long; coriaceous, surface puberulous.

**FLORETS:** Fertile lemma lanceolate; 5-6 mm long; coriaceous; dull; without keel; 5 -veined, surface puberulous; hairy all along, apex acuminate; awned; 1 -awned. Principal lemma awn 3-4 mm long overall. Palea 4.5-5 mm long, surface scabrous.

**FLOWER:** Lodicules 2; 0.75-0.85 mm long; glabrous. Anthers 3; 1.1-1.3 mm long.

**FRUIT:** Caryopsis with adherent pericarp; 2.5 mm long; hairy at apex. Hilum linear.

**Habitat:**

Seaside localities, saltpans, salty areas around lakes and along rivers.

**Distribution:**

Argentina, Chile.

**Altitude:** up to 300 m

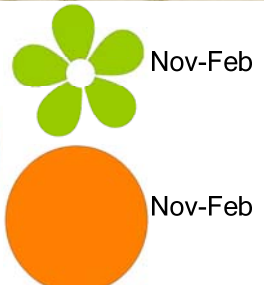
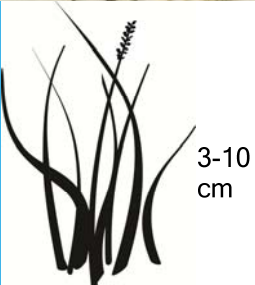
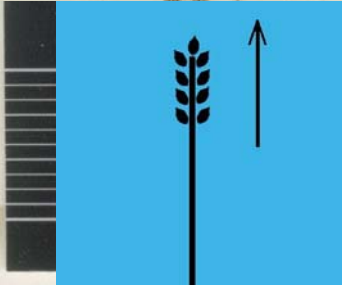
<i>Hordeum patagonicum</i>	May be confused with:
Similar to small specimens of <i>Hordeum parodii</i> and <i>Hordeum tetraploidum</i> .	



All populations priority for collection.

**References:** von Bothmer, R. et al. (1991). An ecological Study of the Genus *Hordeum*.

Gene Pool Tertiary relative of *Hordeum vulgare* L.



Gene Pool Tertiary relative of *Hordeum vulgare* L.

**HABIT:** Perennial. Culms geniculately ascending; 10-40 cm long; 1-3 -noded. Leaf-sheaths glabrous on surface, or pubescent. Ligule an eciliate membrane; truncate. Leaf-blades flat, or convolute; 1.5-2 mm wide.

**INFLORESCENCE:** Composed of racemes. Peduncle glabrous, or pubescent above. Racemes 1; single; bilateral; 3-6 cm long. Spikelets in threes. Fertile spikelets sessile; 1 in the cluster. Pedicels oblong; 0.5-0.7 mm long; ciliate. Sterile spikelets well-developed; containing empty lemmas; lanceolate; dorsally compressed; 18-20 mm long. Fertile spikelets, comprising 1 fertile florets; with a barren rhachilla extension; 18-25 mm long.

**GLUMES:** Collateral; similar; exceeding apex of florets; gaping. Lower glume subulate; 18-25 mm long; 1 length of upper glume; coriaceous. Lower glume surface pubescent. Upper glume subulate; 18-25 mm long; coriaceous, surface pubescent.

**FLORETS:** Fertile lemma lanceolate; 7.5-10 mm long; coriaceous; purple; without keel, surface pubescent; hairy all along, or above, apex acuminate. Principal lemma awn 10-16 mm long overall. Palea 1 length of lemma. Palea keels ciliate.

**FLOWER:** Lodicules 2; 0.7-1.3 mm long; ciliate.

**FRUIT:** Caryopsis with adherent pericarp; 2.5-3.5 mm long; hairy at apex. Hilum linear.

**Habitat:**

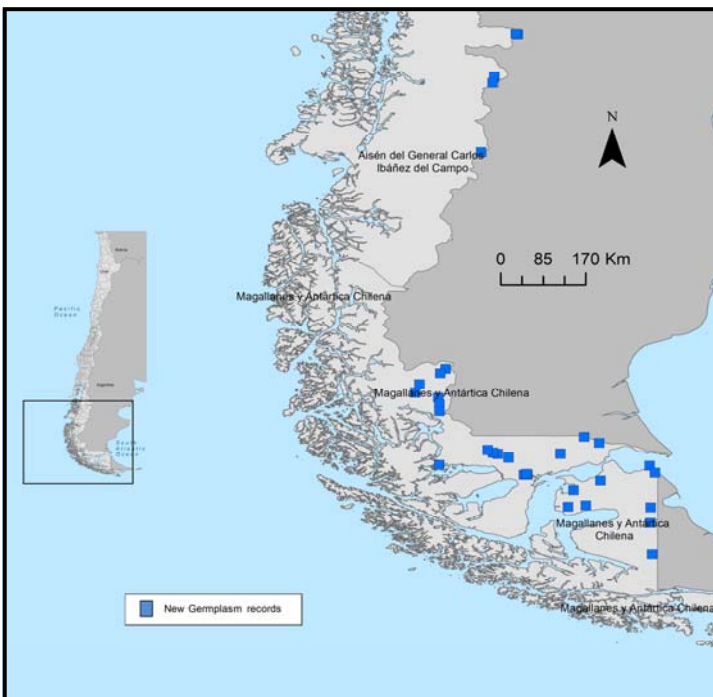
Lowland to high mountain meadows, in both saline and freshwater habitats.

**Distribution:**

Argentina, Chile.

**Altitude:** up to 2000 m

<i>Hordeum pubiflorum</i>	May be confused with: <i>H. procerum</i> , <i>H. comosum</i> , <i>H. lechleri</i> , <i>H. halophilum</i>
Up to 40 cm tall; Spikes 35-50 (-80) mm long; Lemma glabrous.	



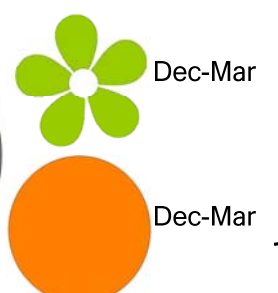
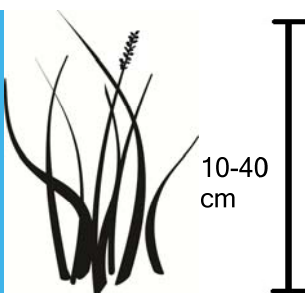
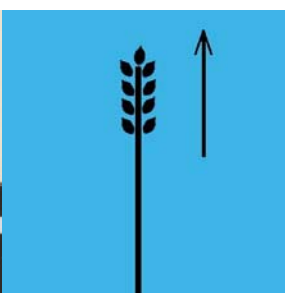
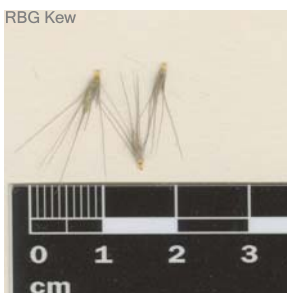
All populations priority for collection.

**References:** von Bothmer, R. et al. (1991). An ecological Study of the Genus *Hordeum*.

Gene Pool Tertiary relative of *Hordeum vulgare* L.



RBG Kew  
RBG Kew





Gene Pool Tertiary relative of *Hordeum vulgare* L.

**HABIT:** Perennial; caespitose. Culms erect; slender; 10-50 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane; 0.5 mm long; truncate. Leaf-blades 1-4 mm wide, surface glabrous, or puberulous.

**INFLORESCENCE:** Racemes. Racemes 1; single; bilateral; 2.5-6 cm long. Spikelets in threes. Fertile spikelets sessile; 1 in the cluster. Companion sterile spikelets pedicelled; 2 in the cluster. Sterile spikelets, 6-8 mm long; as long as fertile; deciduous with the fertile. Companion sterile spikelet glumes, subulate; 6-8 mm long. Companion sterile spikelet lemmas 1; 1.5-4.5 mm long. Fertile spikelets comprising 1 fertile florets; lanceolate; dorsally compressed; 6-8 mm long; falling entire.

**GLUMES:** Collateral; similar; shorter than spikelet, or reaching apex of florets; gaping. Lower glume subulate; 6-8 mm long; 1 length of upper glume; coriaceous. Upper glume subulate; 6-8 mm long; coriaceous.

**FLORETS:** Fertile lemma lanceolate; 5-8 mm long; coriaceous; purple; shiny; without keel; 5 -veined. Lemma surface smooth, apex acuminate; awned; 1 -awned. Principal lemma awn 2-4.5 mm long overall. Palea 5.5-6.5 mm long. Rhachilla extension 2.5-5 mm long.

**FLOWER:** Lodicules 2; 1-1.5 mm long; ciliate; acute. Anthers 3. Ovary pubescent on apex.

**FRUIT:** Caryopsis with adherent pericarp; hairy at apex. Hilum linear.

**Habitat:**

Wet or dry pastures, along streams, and at the shores of lakes and ponds.

**Distribution:**

Argentina, Chile.

**Altitude:** up to 1500 m

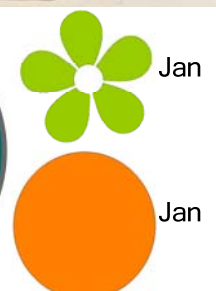
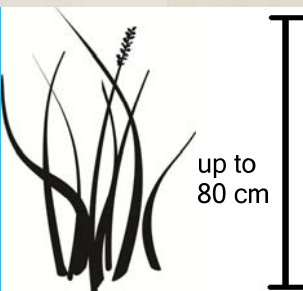
<i>Hordeum tetraploidum</i>	May be confused with: <i>Hordeum parodii</i>
Up to 100 cm tall; Spikes 45-100 mm long; Culms erect.	Up to 80 cm tall; Spikes 40-80 mm long; Culms slender to coarse.

Reported from Chile  
but no localities  
known

All populations priority  
for collection.

**References:** von Bothmer, R. et al. (1991). An ecological Study of the Genus *Hordeum*.

Gene Pool Tertiary relative of *Hordeum vulgare* L.



Gene Pool Tertiary relative of *Solanum tuberosum* L.

**HABIT:** Herb. Rhizomatous perennials, plants erect and sometimes becoming trailing, up to 1 m long. Stems branched, terete to angular, light yellowish-green to gray-green, sometimes tinged or mottled with purple, up to 2 cm wide at base.

**LEAVES:** Odd-pinnate, up to 35 cm long, 15 cm wide, glabrescent to more commonly moderately to densely glandular-pubescent; lateral leaflet pairs 4-6, light yellowish-green to gray-green, middle lateral leaflets 5-10 cm long, 1.5-4 cm wide, elliptic to lanceolate to narrowly ovate, apex acute to acuminate, base cuneate to obliquely rounded to obliquely cordate, sessile to petiolulate with petiolules up to 10 mm long; pseudostipules to 20 mm long and 15 mm wide, semi-lunate and clasping the stem

**INFLORESCENCE:** Dichasially branched, ebracteate, monochasial or dichasial cyme, 12-35 flowers, puberulent, all flowers perfect, peduncle 1-8 cm long; pedicels 6-20 mm long; typically articulate at the very base.

**FLOWERS:** With calyx 5-8 mm long, lobes oblong, apiculate to caudate, acumens (0.5)-1-1.2(2.8) mm long; corollas 2.2-3.5 cm in diameter, rotate to rotate-pentagonal, usually homogeneously violet.

**FRUITS:** 1.0-1.3 cm in diameter, globose, green to deep purple.

**SEEDS:** Uniformly green-white externally, ovoid, ca 2 mm long.

**Habitat:**

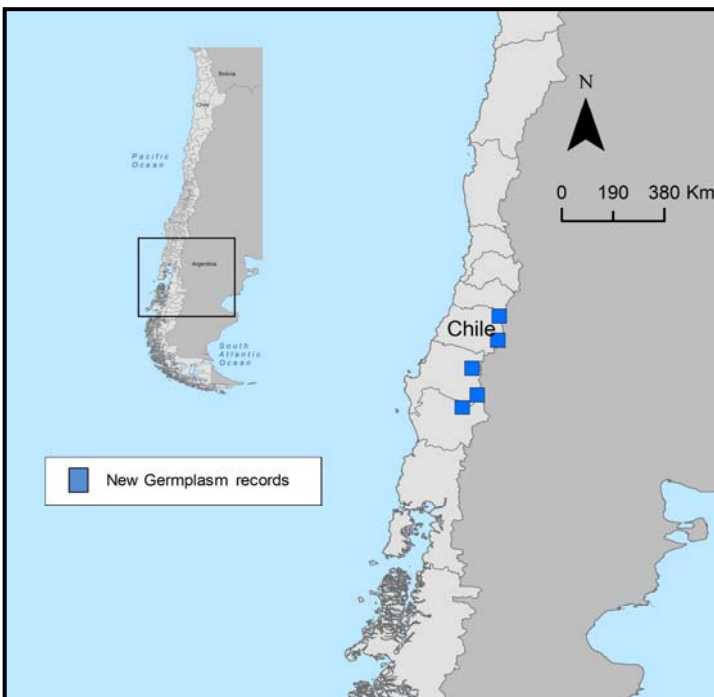
Areas of low, dry scrub forest, along streams or in the mists of waterfalls, always in full sun and usually in rocky soils.

**Distribution:**

Chile: Central Chile, from Región V- Región IX, in the foothills and mid to upper slopes of the Andes Mountains.

**Altitude:** 4340 - 2500 m

<i>Solanum etuberosum</i>	May be confused with: <i>Solanum fernandezianum</i> , <i>Solanum palustre</i>
Does not have a conspicuous purple dot on fresh mature seeds. Anthers 5-7 mm long.	Have a conspicuous purple dot on fresh mature seeds. Anthers 4-5 mm long.



All populations priority for collection.

References: <http://solanaceaesource.org/solanaceae/solanum-etuberosum>

Gene Pool Tertiary relative of *Solanum tuberosum* L.



Michail Belov



Michail Belov



Michail Belov



Michail Belov

No seed  
image  
available



up to 1  
m



Dec-Mar

Dec-Mar

Gene Pool Tertiary relative of *Solanum tuberosum* L.

**HABIT:** Herbaceous rhizomatous perennials, rhizomes branched or unbranched, up to 1 cm in diameter and up to 10 cm long, plants erect and sometimes becoming trailing, up to 1 m long.

**LEAVES:** Pseudostipules to 20 mm long and 15 mm wide, semi-lunate and clasping the stem. Leaves odd-pinnate, up to 35 cm long and 20 cm wide, glabrous except for occasional puberulent hairs along the veins, rarely between the veins adaxially and abaxially; petiolate, lateral leaflet pairs 4-6, subequal and somewhat decreasing in size from the middle to the apex and base.

**INFLORESCENCES:** Dichasially branched, ebracteate, monochasial or dichasial cyme, 2-3 forked, generally in the distal half of the plant, with 4-30 flowers, mostly glabrous, all flowers perfect, peduncle 1-10 cm long; pedicels 6-15 mm long, articulate at the very base.

**FLOWERS:** With the calyx 5-6 mm long, symmetrically 5-lobed at about the middle, lobes oblong, apiculate to caudate. Corollas 2.0-3.0 cm diameter, rotate to rotate-pentagonal, violet to violet-blue, usually light violet-blue in centre, darker-violet-blue beyond, with or without a white star in centre.

**FRUITS:** 1.3 cm in diameter, globose, green to deep purple.

**SEEDS:** Green-white with a purple spot formed by the purple embryo visible through the seed coat, ovoid, ca. 2 mm long.

**Habitat:**

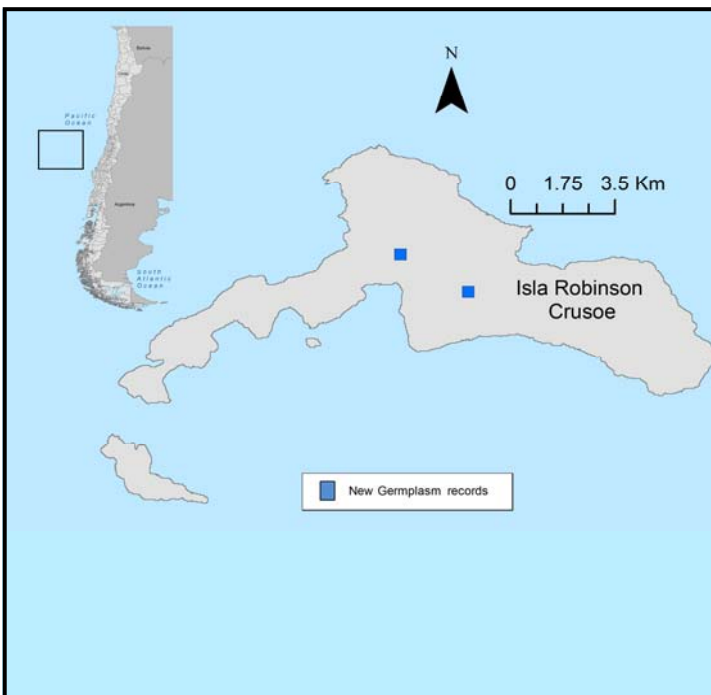
In mesic habitats of woods edges, shaded rock walls, valley bottoms.

**Distribution:**

Chile: Masatierra Island.

**Altitude:** 100 - 610 m

<i>Solanum fernandezianum</i>	May be confused with: <i>Solanum etuberosum</i> , <i>Solanum palustre</i>
Have a conspicuous purple dot on fresh mature seeds. Anthers 4-5 mm long.	<i>S. palustre</i> : Has a conspicuous purple dot on fresh mature seeds. Anthers 4-5 mm long. <i>S. etuberosum</i> : Does not have a purple dot on fresh mature seeds. Anthers 5-7 mm.



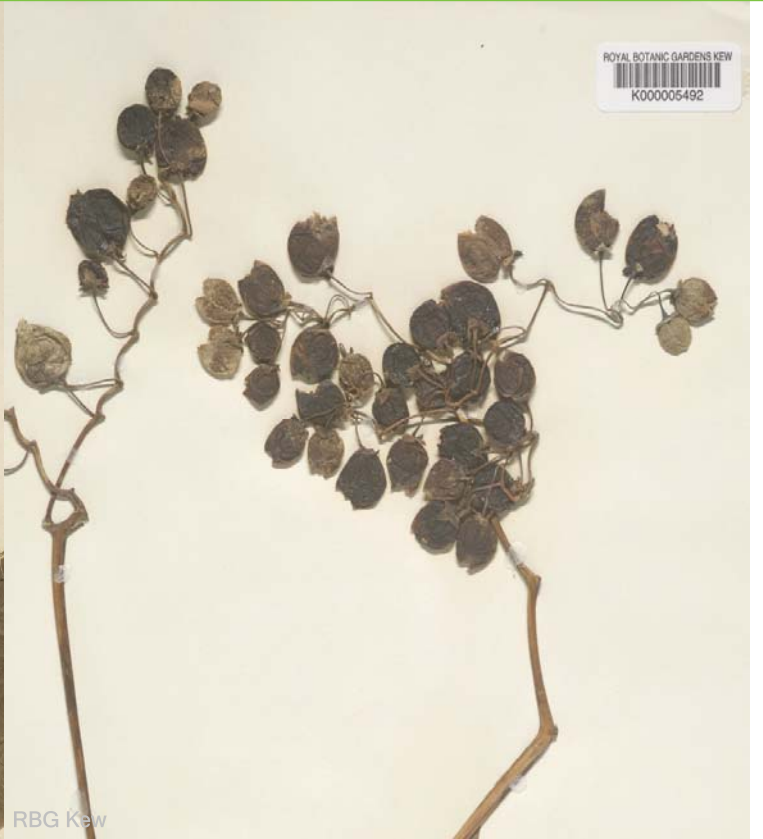
All populations priority for collection.

References: <http://solanaceaesource.org/solanaceae/solanum-fernandezianum>

Gene Pool Tertiary relative of *Solanum tuberosum* L.



RBG Kew



RBG Kew



RBG Kew

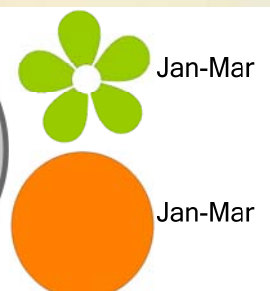


RBG Kew

No seed image available



up to 1 m



Gene Pool Primary relative of *Solanum tuberosum* L.

**HABIT:** Herbs 3-30 cm tall, decumbent to erect. Stems 1.5-4 mm in diameter at base of plant, green, unwinged, sparsely to densely pubescent with short whitish scabrous hairs.

**LEAVES:** Odd-pinnate, the blades 3.8-13 x 1.5-7.6 cm, green, membranous to chartaceous, pubescent adaxially and abaxially with hairs like those of the stems; most distal lateral leaflets 0.7-4.2 x 0.3-1.1 cm, narrowly elliptic to linear; terminal leaflet 2-6 x 0.2-1.1 cm, narrowly elliptic to linear.

**INFLORESCENCE:** 2-9 cm, terminal with a subtending axillary bud, generally in distal half of the plant, usually forked, with 3-9 flowers, with all flowers apparently perfect, the axes pubescent with hairs like those of the stem; peduncle 0.5-5.5 cm long; articulated at or distal to the middle.

**FLOWERS:** Homostylous, 5-merous. Calyx 5-8 mm long, the tube 1-2 mm, the lobes 3-7 mm, acute to long attenuate, pubescent with hairs like those of the stem. Corolla 1.5-2.8 cm in diameter, substellate to pentagonal to rotate, white to white tinged with blue or purple to entirely blue or purple, glabrous adaxially, minutely puberulent abaxially, especially along the midribs.

**FRUITS:** Globose berry, 0.8-1 cm in diameter, green when ripe, often with scattered white dots.

**SEEDS:** Ovoid and ca. 2 mm long, whitish to greenish in fresh condition and drying brownish.

**Habitat:**

Dry rocky areas without vegetation, among spiny shrubs or cacti, or at the edges of cultivated fields or roadsides, occasionally within a cultivated field, in river beds or along streamsides, often in disturbed soil

**Distribution:**

Central Bolivia to northern Argentina.

**Altitude:** 2350 - 4300 m

<i>Solanum infundibuliforme</i>	May be confused with: <i>Solanum viirsooi</i>
S. infundibuliforme is a very distinctive wild potato species with its narrowly elliptic to linear leaves.	

Reported from Chile  
but no localities  
known

All populations priority  
for collection.

**References:** <http://solanaceaesource.org/solanaceae/solanum-infundibuliforme>

Gene Pool Primary relative of *Solanum tuberosum* L.



No seed image available



3-30 cm



Jan-Apr

Jan-Apr



Gene Pool Secondary relative of *Solanum tuberosum* L.

**HABIT:** Herbs 0.5-1.5 m tall, erect. Stems 4-10 mm in diameter at base of plant, green to purple or slightly green and purple mottled, with wings 1-2 mm wide, invested with glandular and non-glandular multicellular trichomes.

**LEAVES:** Odd-pinnate, the blades 16-28.6 x 8.5-19 cm, green, membranous to chartaceous, moderately pubescent with glandular and non-glandular multicellular trichomes adaxially and abaxially, margin ciliate; terminal leaflet 6-5-15.3 x 3.5-7.5 cm, medium to broadly ovate to medium to broadly elliptic, the apex acute to acuminate; petiolules 0-5 mm; petioles 3-7.5 cm, pubescent as the stems.

**INFLORESCENCES:** 5-15 cm, 10-16 flowers, with all flowers apparently perfect, the axes pubescent with hairs like those of the stem; peduncle 4-16 cm long, with a dense pubescence of trichomes; pedicels 10-21 mm long in flower and fruit.

**FLOWERS:** Homostylous; calyx 3-5 mm long, the tube 1-2 mm, the lobes 1-4 mm, acute to attenuate, with hairs like those of the stem; corolla 2.3-3.3 cm in diameter, pentagonal to rotate, white abaxially and adaxially, edges flat, glabrous adaxially the tube 1-2 mm long, not folded dorsally.

**Fruits:** Fruit unknown.

**SEEDS:** Ovoid and ca. 2 mm long, whitish to greenish in fresh condition and drying brownish.

**Habitat:**

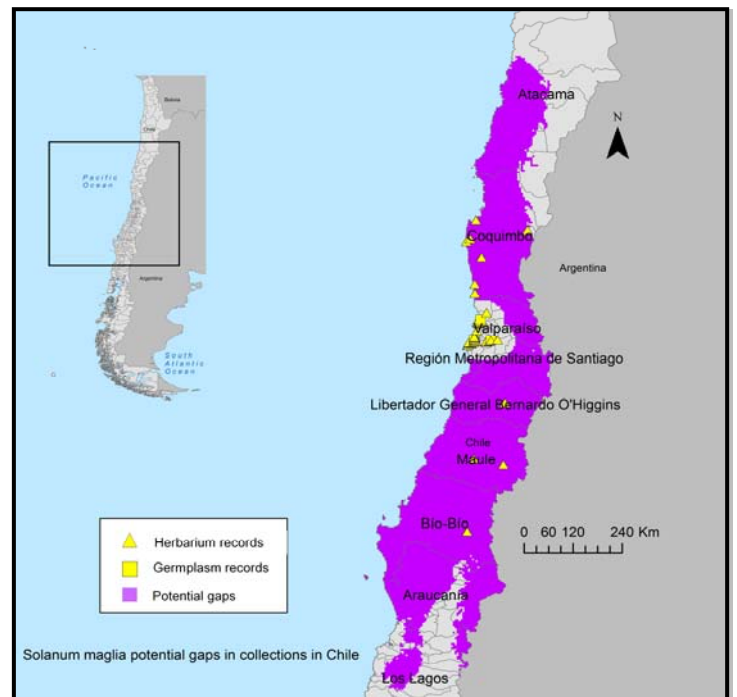
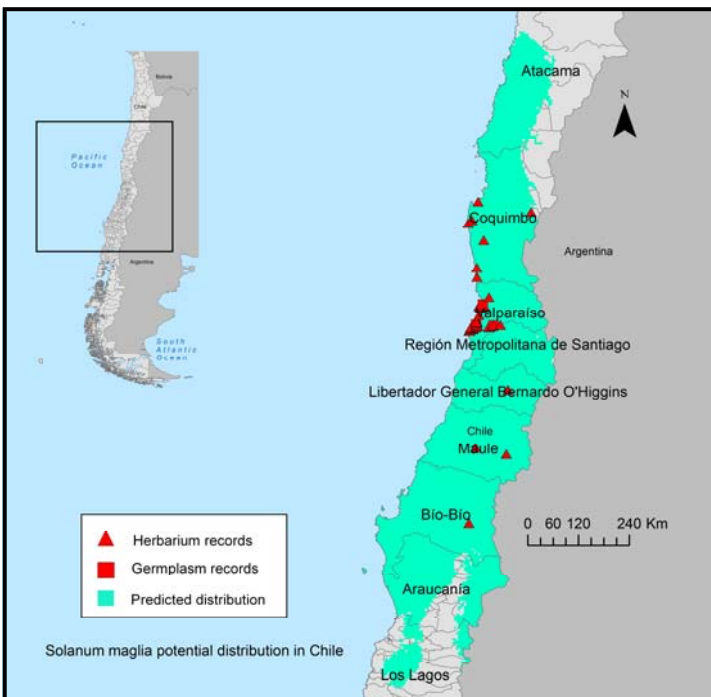
Coastal humid valleys, among rocks and sand.

**Distribution:**

Western Argentina (Prov. Mendoza); central and south Chile (Regions V, VII, VIII, IX, X).

**Altitude:** up to 1200 m

<i>Solanum maglia</i>	May be confused with:
Distinguished by its relatively broad leaflets, especially the terminal leaflet, and by its anthers with the tissue grading into the filaments rather than with distinct filaments.	



**References:** <http://solanaceaesource.org/solanaceae/solanum-maglia>

Gene Pool Secondary relative of *Solanum tuberosum* L.



No seed image available



0.5-1.5 m

LC PRELIM



Jan-Dec

Jan-Dec

Gene Pool Secondary relative of *Solanum tuberosum* L.

**HABIT:** Herbs 0.2-0.6 m tall, erect. Stems 3-5 mm in diameter at base of plant, dark green, sometimes tinged with purple, unwinged or with wings to 1 mm wide, coarsely pilose with typically whitish non-glandular erect trichomes.

**LEAVES:** Odd-pinnate, blades 8-15 x 5-15 cm, medium to dark green sometimes tinged with purple abaxially, membranous to chartaceous, moderately pubescent adaxially and abaxially with hairs like the stems; most distal lateral leaflets 1.5-10 x 0.4-8 cm, narrowly to broadly ovate to more rarely orbicular; terminal leaflet 3-14 x 1-8 cm.

**INFLORESCENCES:** 2.5-10 cm, 5-15 flowers, the axes pubescent with hairs like those of the stem; peduncle 1.3-8 cm long; pedicels 1.5-8 mm long in flower and fruit.

**FLOWERS:** Homostylous; Calyx 6-11 mm long, the tube 1-2 mm, the lobes 3-5 mm, linear to long attenuate, pubescent with hairs like those of the stem. Corolla 2.8-3.5 cm in diameter, pentagonal to rotate, dark blue to violet and typically with a green central star adaxially and abaxially.

**FRUIT:** Globose to slightly ovoid berry, ca. 1.5 cm wide, 1.5-1.8 cm long, medium to deep green when ripe, often with scattered white dots, glabrous.

**SEEDS:** Ovoid and 2 mm long, whitish to greenish in fresh condition and drying brownish.

#### Habitat:

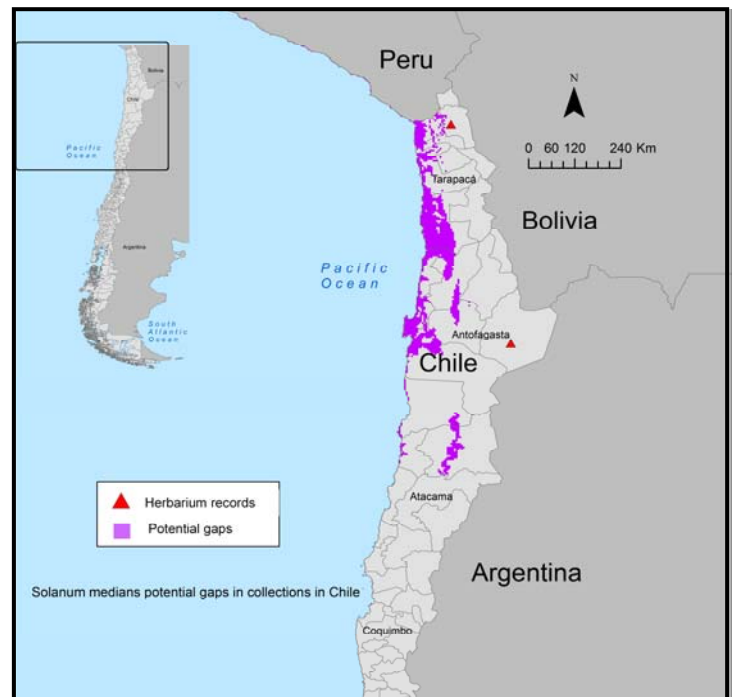
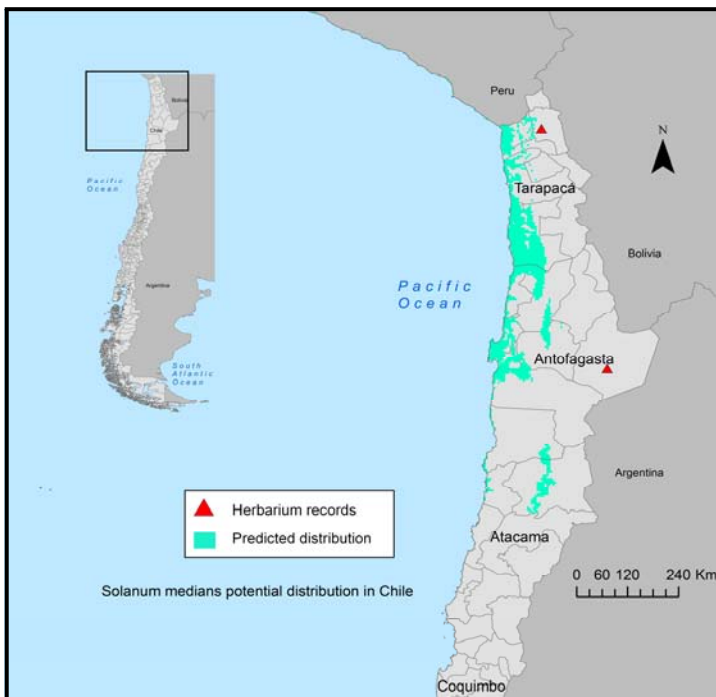
Sunny habitats along the dry coastal lomas to high frigid areas near snow fields, along field margins and streamsides.

#### Distribution:

Central Peru (Dept. Ancash) south to northern Chile in Regions I (Tarapacá) and II (Antofagasta), along the western slopes of the Andes.

Altitude: 200 - 3800 m

<i>Solanum medians</i>	May be confused with: <i>Solanum neoweberbaueri</i>
Moderately pubescent leaves and calyx. Pedicels, which are typically articulate in the distal half.	Subglabrous to sparsely pubescent leaves and calyx. Pedicels, which are typically articulate in the middle or slightly below the middle.



References: <http://solanaceaesource.org/taxonomy/term/108139/descriptions>

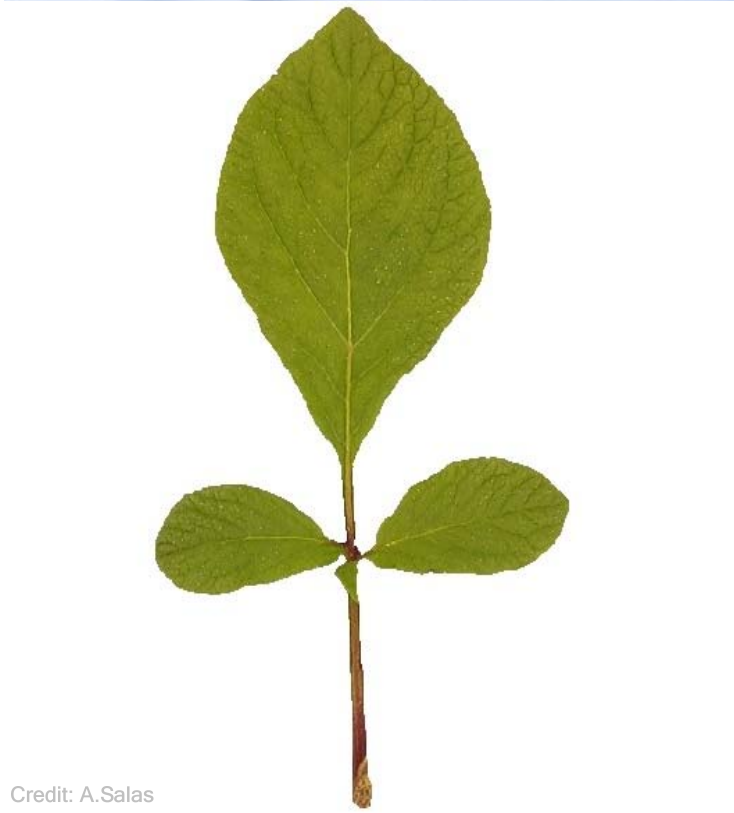
Gene Pool Secondary relative of *Solanum tuberosum* L.



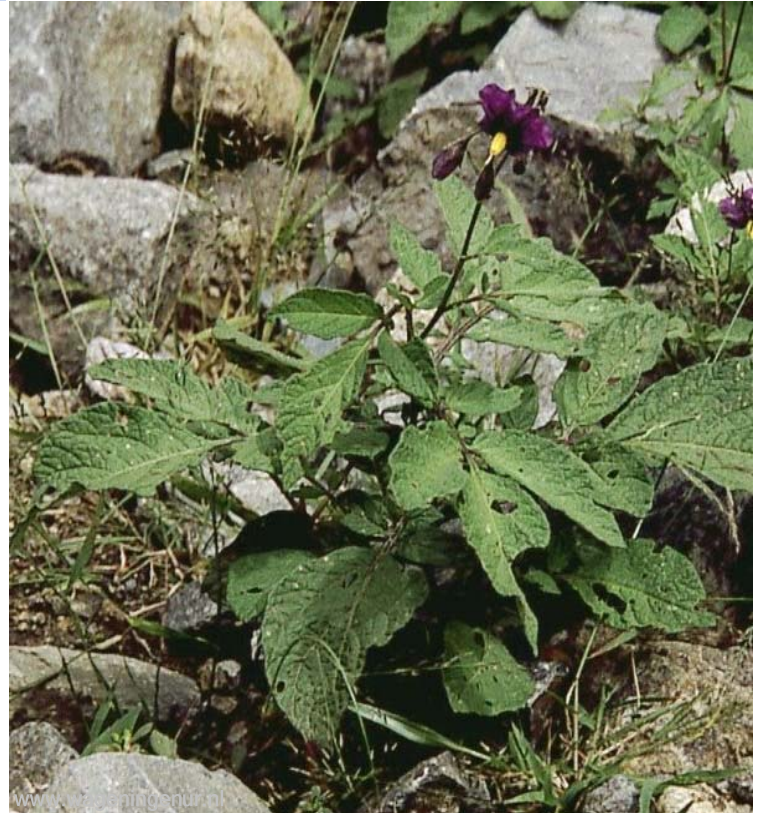
Credit: A.Salas/CIP



Credit: A.Salas



Credit: A.Salas



No seed image available



0.2-0.6 m



Jan-Dec

Jan-Dec

Gene Pool Tertiary relative of *Solanum tuberosum* L.

**HABIT:** Herbaceous rhizomatous perennials, rhizomes branched or unbranched, up to 1 cm in diameter and up to 10 cm long, plants erect and sometimes becoming trailing, up to 1 m long; Stems branched, terete to angular, medium to dark green, sometimes tinged with purple, up to 2 cm wide at base, green to purple, glabrous or with occasional puberulent hairs.

**LEAVES:** Odd-pinnate, up to 35 cm long and 21 cm wide, scarcely puberulent to more commonly moderately to densely glandular-pubescent; middle lateral leaflets 5-10 cm long, 1.5-4 cm wide, elliptic to lanceolate to narrowly ovate, apex acute to acuminate, base cuneate to obliquely rounded to obliquely cordate, sessile to petiolulate with petiolules up to 10 mm long.

**INFLORESCENCES:** 20-65 flowers, all flowers perfect, peduncle 1-10 cm long; pedicels 9-18 mm long.

**FLOWERS:** With the calyx 3.5-4.2 mm long; corollas 2.0-3.0 cm in diameter, rotate to rotate-pentagonal, light violet blue in centre, darker blue-violet beyond, with or without white star in centre.

**FRUITS:** 0-1.3 cm in diameter, globose, green to deep purple.

**SEEDS:** Green-white and with a purple spot formed by the purple embryo visible through the seed coat, ovoid, ca. 2 mm long.

**Habitat:**

Often in areas of recent fires, in full sun or partial shade, in organic soils.

**Distribution:**

Central Chile, Región V- Región X.

**Altitude:** 40 - 1170 m

*Solanum palustre*

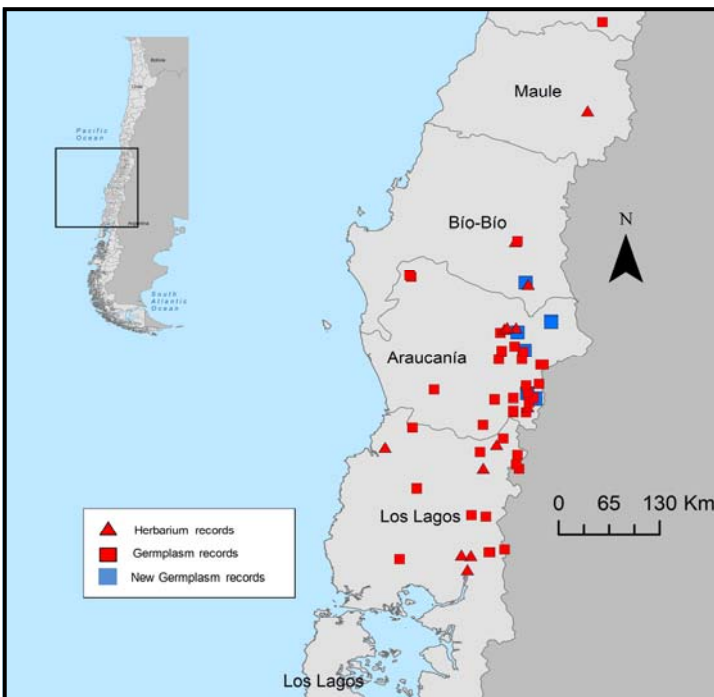
Have a conspicuous purple dot on fresh mature seeds. Anthers 4-5 mm long.

## May be confused with:

*Solanum fernandezianum*, *Solanum etuberosum*

*S. fernandezianum*: Does not have a conspicuous purple dot on fresh mature seeds. Anthers 5-7 mm long.

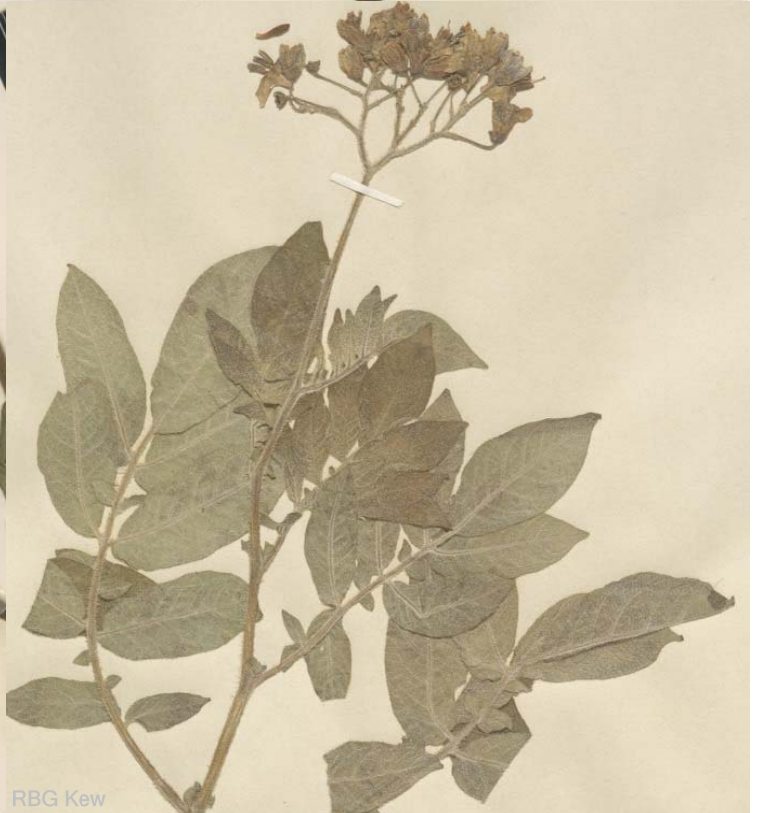
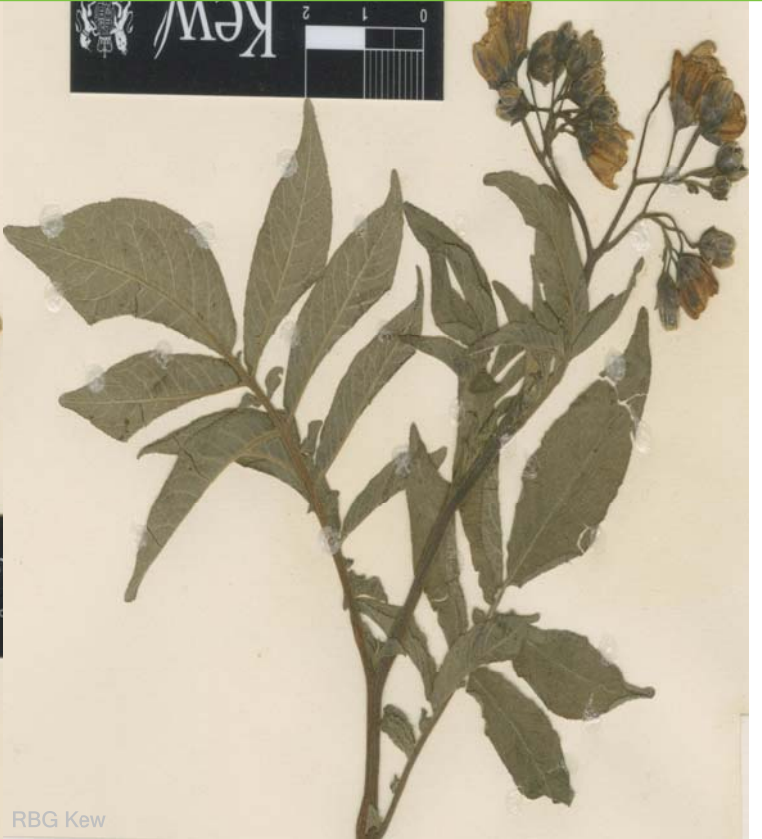
*S. etuberosum*: Has a conspicuous purple dot on fresh mature seeds. Anthers 5-7 mm.



All populations priority  
for collection.

References: <http://solanaceaesource.org/solanaceae/solanum-palustre-1>

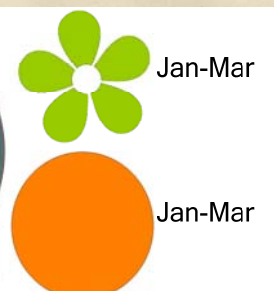
Gene Pool Tertiary relative of *Solanum tuberosum* L.



No seed image available



up to 1.5 m



# Appendix - Synonyms

Taxon		Synonyms
Medicago arborea L.	1	Medicago arborea var. citrina Font Quer; Medicago arborea subsp. citrina (Font Quer) O.Bolos & Vigo
Eleusine tristachya (Lam.) Lam.	2	Eleusine tristachya f. latifolia Hack.
Hordeum chilense Roemer & Schultes	3	Hordeum chilense var. compressum (Griseb.) Hauman; Hordeum chilense f. elongatum Hauman; Hordeum chilense f. longiaristatum Hauman; Hordeum chilense var. longiaristatum Hauman; Hordeum chilense var. magellanicum Parodi ex Nicora; Hordeum chilense var. muticum (J.Presl) Hauman
Hordeum comosum Presl	4	Critesion comosum (C.Presl) Á.Löve; Hordeum andinum Trin.; Hordeum comosum var. bifidum Parodi ex Nicora; Hordeum comosum var. flavescens É.Desv.; Hordeum comosum var. humile É.Desv.; Hordeum comosum var. rigida E. Desv.; Hordeum comosum var. rigidum É.Desv.; Hordeum jubatum var. comosum (J.Presl) Kuntze; Hordeum jubatum f. flavidum Kuntze; Hordeum jubatum f. versicolor Kuntze
Hordeum fuegianum Bothmer Jacobsen & Jorgensen	5	No Synonyms
Hordeum halophilum (Griseb.) Baden & Bothmer	6	Critesion pubiflorum subsp. halophilum (Griseb.) Á.Löve; Hordeum halophilum var. breviaristatum Parodi ex Nicora; Hordeum halophilum var. halophilum; Hordeum pubiflorum subsp. breviaristatum (Parodi & Nicora) C.Baden; Hordeum pubiflorum subsp. halophilum (Griseb.) C.Baden & Bothmer; Hordeum pubiflorum var. intermedia (Hauman) Melderis
Hordeum lechleri (Steudal) Schenck	7	Critesion lechleri (Steud.) Á.Löve; Elymus lechleri Steud.; Hordeum pubiflorum var. intermedium (Hauman) Melderis; Hordeum secalinum f. intermedium Hauman
Hordeum muticum Presl	8	Critesion muticum (C.Presl) Á.Löve; Hordeum andicola Griseb.; Hordeum chilense var. muticum (J.Presl) Hauman; Hordeum muticum var. andicola (Griseb.) Thell.; Hordeum secalinum var. andicola (Griseb.) Hauman
Hordeum parodii Covas	9	Critesion parodii (Covas) Á.Löve S; Hordeum parodii var. araucanum Parodi ex Nicora

# Appendix - Synonyms

b

Hordeum patagonicum (Haumann) Covas	10	Critesion magellanicum (Parodi & Nicora) Á.Löve; Critesion mustersii (Nicora) Á.Löve; Critesion patagonicum (Hauman) Á.Löve; Critesion santacrucense (Parodi & Nicora) Á.Löve; Critesion setifolium (Parodi & Nicora) Á.Löve; Hordeum chilense var. magellanicum Parodi ex Nicora; Hordeum maritimum var. patagonicum Hauman; Hordeum mustersii Nicora; Hordeum patagonicum subsp. magellanicum (Parodi & Nicora) Bothmer, Giles & N.Jacobsen; Hordeum patagonicum var. magellanicum (Parodi ex Nicora) C. Yen & J.L. Yang; Hordeum patagonicum subsp. mustersii (Nicora) Bothmer, Giles & N.Jacobsen; Hordeum patagonicum var. mustersii (Nicora) C. Yen & J.L. Yang; Hordeum patagonicum subsp. santacrucense (Parodi & Nicora) Bothmer, Giles & N.Jacobsen; Hordeum patagonicum var. santacrucense (Parodi ex Nicora) C. Yen & J.L. Yang; Hordeum patagonicum subsp. setifolium (Parodi & Nicora) Bothmer, Giles & N.Jacobsen; Hordeum patagonicum var. setifolium (Parodi ex Nicora) C. Yen & J.L. Yang; Hordeum santacrucense Parodi ex Nicora Hordeum setifolium Parodi ex Nicora
Hordeum pubiflorum Hook.f.	11	Critesion pubiflorum (Hook.f.) Á.Löve; Critesion pubiflorum subsp. pubiflorum; Hordeum comosum var. pubiflorum (Hook.f.) Thell.; Hordeum jubatum var. pilosulum Franch.; Hordeum jubatum f. violaceum Kuntze S; Hordeum jubatum f. viride Kuntze; Hordeum pubiflorum subsp. pubiflorum; Hordeum secalinum var. pubiflorum (Hook.f.) Hauman
Hordeum tetraploidum Covas	12	Critesion tetraploideum (Covas) Á.Löve
Solanum etuberosum Lindl.	13	Solanum bustillosii Phil.; Solanum kunzei Phil.; Solanum looseri Juz. ex Buk.; Solanum subandinum F. Meigen
Solanum fernandezianum Phil.	14	Solanum brevistylum Wittm.
Solanum infundibuliforme Phil.	15	Solanum glanduliferum Hawkes; Solanum infundibuliforme var. albiflorum Ochoa; Solanum infundibuliforme var. angustepinnatum Bitter; Solanum microphyllum Hawkes; Solanum microphyllum (Lam.) Dunal; Solanum pinnatifidum Lam.; Solanum platypterum Hawkes; Solanum xerophyllum Hawkes
Solanum maglia Schldl.	16	Solanum collinum Dunal; Solanum maglia var. collinum Bitter; Solanum maglia var. witasekianum Bitter
Solanum medians Bitter	17	Solanum medians var. angustifoliolum Ochoa; Solanum medians var. autumnale Correll; Solanum medians var. majorifrons Bitter; Solanum tacnaense Ochoa



# Appendix - Synonyms

Taxon		Synonyms
Solanum palustre Schltl.	18	Solanum brevidens Phil.; Solanum brevidens var. glabrescens Hawkes; Solanum bridgesii Phil.; Solanum bridgesii A. DC.; Solanum palustre var. parviflora Schltr.; Solanum tuberosum subsp. brevidens (Phil.) Reiche; Solanum tuberosum subsp. pearcei Reiche