

# INDEX SEMINUM 2020-2021



DENVER BOTANIC  
**GARDENS**

## ON THE COVER

*Eriogonum jamesii* blooming outside of the Boettcher Memorial Tropical Conservatory. Photo by Julian Gonzales.

Denver Botanic Gardens is proud to present [Medicinal Herbs of the Rocky Mountains](#) by Blake Burger, published by Falcon Guides, in summer 2022. This book focuses on herbs found in the Rocky Mountain region of North America with descriptions, herbal preparations and historical information for 61 species with medicinal properties. These species, and many found within this seed list, provide a wide range of medicinal uses for the Indigenous people of the region.

*Eriogonum jamesii* is a medicinal plant with such documented uses as an eye wash, easing labor pains and relieving stomachaches (Native American Ethnobotany Database, <http://naeb.brit.org/>). Other species with known medicinal uses (\*) are noted in the following list.

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## ABOUT DENVER BOTANIC GARDENS

Denver Botanic Gardens is situated at Latitude 39°43'55.4"N, Longitude 104°57'36.5"W, at an elevation of 5277 feet (1609 meters) above sea level. The Gardens includes 24 acres of display and collections including a tropical conservatory, rock alpine garden, Japanese garden, native plant gardens and water gardens.

## INTERNATIONAL PLANT EXCHANGE NETWORK (IPEN)

Denver Botanic Gardens is a member of IPEN with code KHD.

The IPEN number consists of four elements:

1. Country of origin (abbreviation according to IO 3166-1-alpha-2 <http://www.iso.org>, "XX" for unknown origin)
2. Restrictions of transfer ("1" if there exists a restriction, "0" if no restrictions).
3. Garden codes can be found on Botanic Gardens Conservation International website, <http://www.bgci.org/policy/ipen/>
4. Identification number (accession number from originating IPEN member garden)

For example:

US-0-KHD-060654

US: Plant material originates from the United States

0: There are no restrictions of transfer

KHD: Denver Botanic Gardens' IPEN code

060654: Our accession number

## GARDENS NAVIGATOR

We invite you to learn more about the selections provided through this year's Index Seminum through our Gardens Navigator website. Species names are linked to images, phenology and descriptive data throughout this catalog.

# SEED OF CULTIVATED PLANTS

Seeds were collected during 2020 or 2021 from cultivated gardens at Denver Botanic Gardens York Street or from the personal gardens of horticulture staff. All plant names are linked to descriptions and in many cases, to images on Gardens Navigator website at [gardensnavigator.org](http://gardensnavigator.org).

ORDER #	FAMILY/NAME	COLL. YR.	IPEN #	COLLECTION OR SOURCE DATA	MEDICINAL
<b>AMARYLLIDACEAE</b>					
01	<i>Allium akaka</i> Gmel.	2020	XX-0-KHD-171240		
02	<i>Allium geyeri</i> S. Watson	2021	US-0-KHD-131264	US: Colorado	
03	<i>Allium stellatum</i> Ker-Gawl.	2020	XX-0-KHD-181683		*
<b>APIACEAE</b>					
04	<i>Lomatium grayi</i> (Coul. & Rose) Coul. & Rose	2021	XX-0-KHD-010590	Leach Botanical Garden, Oregon	
05	<i>Musineon tenuifolium</i> (Nutt. ex Torr. & Gray) Coul. & Rose	2021	XX-0-KHD-220254		
<b>ASPARAGACEAE</b>					
06	<i>Nolina texana</i> S. Watson	2021	XX-0-KHD-163934	Lady Bird Johnson Wildflower Center	
<b>ASTERACEAE</b>					
07	<i>Antennaria chilensis</i> J. Rémy	2020	XX-0-KHD-161910		
08	<i>Berlandiera lyrata</i> Benth.	2020	XX-0-KHD-870408		*
09	<i>Gaillardia aristata</i> Pursh	2020	XX-0-KHD-002522		*
10	<i>Silphium terebinthinaceum</i> Jacq.	2021	XX-0-KHD-910236		*
11	<i>Townsendia parryi</i> D.C. Eaton	2021	XX-0-KHD-130042		
12	<i>Townsendia spathulata</i> Nutt.	2021	XX-0-KHD-130043		
13	<i>Verbesina alternifolia</i> (L.) Britton ex Kearney	2021	XX-0-KHD-170163		*
14	<i>Vernonia baldwinii</i> Torr.	2020	US-0-KHD-080293	US: Colorado: Adams County: Rocky Mountain Arsenal. Mead, Dennis s.n. 1 Jul 2007.	
15	<i>Vernonia larseniae</i> B.L. King & S.B. Jones	2021	XX-0-KHD-174138		
16	<i>Vernonia lindheimeri</i> A. Gray & Engelm.	2021	XX-0-KHD-193702		
17	<i>Zinnia grandiflora</i> Nutt.	2021	XX-0-KHD-861674		*



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ORDER #	FAMILY/NAME	COLL. YR.	IPEN #	COLLECTION OR SOURCE DATA	MEDICINAL
<b>BETULACEAE</b>					
18	<i>Carpinus caroliniana</i> Walter	2020	XX-0-KHD-832749		
<b>BRASSICACEAE</b>					
19	<i>Aethionema grandiflorum</i> Boiss. & Hohen.	2020	XX-0-KHD-022401		
20	<i>Alyssum markgrafii</i> O.E. Schulz	2020	XX-0-KHD-801016	Koninklijke Rotterdamse Diergaade	
21	<i>Draba alpina</i> L.	2020	XX-0-KHD-071172		
22	<i>Draba gilliesii</i> Hook. & Arn.	2021	CL-0-KHD-181349	Chileflora	
<b>CAMPANULACEAE</b>					
23	<i>Campanula incurva</i> Aucher ex A. DC.	2021	XX-0-KHD-022551		
24	<i>Edraianthus dalmaticus</i> A. DC.	2021	XX-0-KHD-800870		
<b>CARYOPHYLLACEAE</b>					
25	<i>Dianthus petraeus</i> Waldst. & Kit. ssp. <i>noeanus</i> (Boiss.) Tutin	2021	XX-0-KHD-802809		
<b>FABACEAE</b>					
26	<i>Caragana erinacea</i> Kom.	2020	XX-0-KHD-972276		
27	<i>Dalea candida</i> Willd.	2020	US-0-KHD-980210	US: Colorado: Pawnee Buttes: Along trail in arroyos. Johnson, Dan s.n. 20 Aug 1997.	*
28	<i>Desmanthus illinoensis</i> (Michx.) MacMill. ex B.L. Rob & Fernald	2021	US-0-KHD-980449	US: Colorado: Baca County: Cottonwood Creek (Carrizo Canyon Network). Sand bars along streams. Johnson, D. s.n. 15 Feb 1998.	*
29	<i>Oxytropis besseyi</i> (Rydb.) Blank. var. <i>argophylla</i> (Rydb.) Barneby	2020	XX-0-KHD-162829		
30	<i>Trifolium attenuatum</i> Greene	2021	US-0-KHD-202420	US: Colorado: Wolf Creek Pass.	

# SEED OF CULTIVATED PLANTS

ORDER #	FAMILY/NAME	COLL. YR.	IPEN #	COLLECTION OR SOURCE DATA	MEDICINAL
<b>GERANIACEAE</b>					
31	<i>Pelargonium alchemilloides</i> (L.) L'Herit.	2021	ZA-0-U-2011ZS00378	ZA: Balloch Farm (near S border of Lesotho).	
<b>IRIDACEAE</b>					
32	<i>Iris missouriensis</i> Nutt.	2020	XX-0-KHD-003188		*
33	<i>Iris pumila</i> L.	2021	AM-0-KHD-170644	AM: Lake Sevan. Jurasek s.n.	
<b>LAMIACEAE</b>					
34	<i>Sideritis pisidica</i> Boiss. & Heldr.	2021	XX-0-KHD-161338		
<b>LILIACEAE</b>					
35	<i>Tulipa turkestanica</i> (Reg.) Regel	2021	XX-0-KHD-132197		
<b>LOASACEAE</b>					
36	<i>Mentzelia decapetala</i> (Pursh ex Sims) Urb. & Gilg ex Gilg	2020	XX-0-KHD-211101		
37	<i>Mentzelia nuda</i> (Pursh) Torr. & A. Gray	2021	XX-0-KHD-220373		
<b>MALVACEAE</b>					
38	<i>Callirhoe involucrata</i> (Torr. & A. Gray) A. Gray	2020	XX-0-KHD-002507		*



*Desmanthus illinoensis* in Plains Garden (Cindy Newlander)



*Iris missouriensis* in Western Panoramas Bristlecone Border (Cindy Newlander)

# SEED OF CULTIVATED PLANTS

ORDER #	FAMILY/NAME	COLL. YR.	IPEN #	COLLECTION OR SOURCE DATA	MEDICINAL
<b>PAPAVERACEAE</b>					
39	<i>Argemone polyanthemos</i> (Fedde) Ownb.	2020	US-0-KHD-980595	US: Colorado: Jefferson County: White Ranch Open Space. Brune, R. s.n. 15 Aug 1995.	*
40	<i>Papaver aculeatum</i> Thunb.	2020	XX-0-KHD-171156		
41	<i>Papaver croceum</i> Ledeb.	2021	KG-0-KHD-194711	KG: Kuntur gold mine 2. Alpine scree slope, clay and gravel, north-facing canyon, full exposure. 3732 m. 41.89311, 77.68827. Mike Bone PCC-KG-153. 22 Aug 2019.	
42	<i>Papaver triniifolium</i> Boiss.	2021	XX-0-KHD-802071	University of Oxford Botanic Garden	
<b>PLANTAGINACEAE</b>					
43	<i>Globularia punctata</i> Lapeyr.	2020	XX-0-KHD-810268		
44	<i>Globularia stygia</i> Orph.	2020	XX-0-KHD-081470		
45	<i>Penstemon barbatus</i> (Cav.) Roth	2021	XX-0-KHD-220334		*
46	<i>Penstemon clutei</i> A. Nels.	2021	XX-0-KHD-182528		
47	<i>Penstemon cobaea</i> Nutt.	2021	XX-0-KHD-220336		
48	<i>Penstemon glaber</i> Pursh var. <i>brandegeei</i> (Porter) Freeman	2021	XX-0-KHD-152690		
49	<i>Penstemon laricifolius</i> Hook. & Arn. ssp. <i>laricifolius</i>	2021	XX-0-KHD-050982		
50	<i>Penstemon osterhoutii</i> Pennell	2021	US-0-KHD-132441	US: Colorado: Eagle County: Colorado River E of State Bridge. s.n. 15 Sep 2012.	
51	<i>Penstemon rydbergii</i> A. Nels.	2020	XX-0-KHD-032101		
52	<i>Penstemon strictus</i> Benth. 'Bandera'	2021	XX-0-KHD-220342		
53	<i>Penstemon tubaeflorus</i> Nutt.	2021	XX-0-KHD-220343		
54	<i>Penstemon virens</i> Pennell ex Rydberg	2021	XX-0-KHD-171418		
55	<i>Penstemon whippleanus</i> A. Gray	2020	XX-0-KHD-210415		

# SEED OF CULTIVATED PLANTS

ORDER #	FAMILY/NAME	COLL. YR.	IPEN #	COLLECTION OR SOURCE DATA	MEDICINAL
<b>PLUMBAGINACEAE</b>					
56	<i>Acantholimon acerosum</i> (Willd.) Boiss.	2021	XX-0-KHD-840542		
57	<i>Acantholimon caesareum</i> Boiss. & Bal.	2020	TR-0-KHD-061000	TR: Ercies Dag. Euroseeds. 9.	
58	<i>Acantholimon caryophyllaceum</i>	2021	TR-0-KHD-910852	TR:Kaon Shahat Mts. 2900 m. Plestil, V. PK3589.	
59	<i>Acantholimon litvinovii</i> Lincz.	2021	XX-0-KHD-900213		
60	<i>Acantholimon ulicinum</i> Boiss. var. <i>purpurascens</i> (Bokh.) Bokh. & Edmonds	2021	XX-0-KHD-152294		
61	<i>Armeria maritima</i> (Boiss.) G.H.M. Lawr. var. <i>magellanica</i>	2020	XX-0-KHD-171089		
<b>POACEAE</b>					
62	<i>Aristida purpurea</i> Nutt.	2020	US-0-KHD-861668	US: Colorado: Pueblo County.	*
63	<i>Festuca idahoensis</i> Elmer	2020	US-0-KHD-000938	US: Colorado: East side Cottonwood Pass along road, CO. Johnson, D. s.n.	
64	<i>Neotrinia splendens</i> (Trin.) M.Nobis, P.D. Gudkova & A. Nowak	2021	XX-0-KHD-163094		
65	<i>Sporobolus airoides</i> (Torr.) Torr.	2020	US-0-KHD-210442	US: Colorado.	
<b>POLYGONACEAE</b>					
66	<i>Eriogonum jamesii</i> Benth.	2020	XX-0-KHD-051334		*
67	<i>Eriogonum jamesii</i> Benth.	2021	XX-0-KHD-002714		*
68	<i>Eriogonum umbellatum</i> Torr. var. <i>majus</i> Hook.	2020	US-0-KHD-160497	US: Colorado: Routt County: Mill Creek Valley. ca 8250 ft. 40.78, -106.99. Mike Kintgen s.n.	*

# SEED OF CULTIVATED PLANTS

ORDER #	FAMILY/NAME	COLL. YR.	IPEN #	COLLECTION OR SOURCE DATA	MEDICINAL
<b>RANUNCULACEAE</b>					
69	<i>Aquilegia chrysantha</i> A. Gray	2020	XX-0-KHD-002505		
70	<i>Aquilegia laramiensis</i> A. Nels.	2020	XX-0-KHD-132606		
71	<i>Clematis hirsutissima</i> Pursh	2021	XX-0-KHD-040921		*
72	<i>Delphinium barbeyi</i> (Huth) Huth	2020	XX-0-KHD-160670		
73	<i>Pulsatilla halleri</i> (All.) Willd.	2021	XX-0-KHD-152583		*
<b>ROSACEAE</b>					
74	<i>Cercocarpus ledifolius</i> Nutt. ex Torr. & A. Gray	2021	XX-0-KHD-023178		*
75	<i>Dryas x suendermannii</i> Kellerer ex Sunderm.	2020	XX-0-KHD-100723		
76	<i>Fallugia paradoxa</i> (D. Don) Endl. ex Torr.	2020	US-0-KHD-080350	US: New Mexico: Otero County: Mountain Lion Peak. 6597 ft. 33.13903, -105.86165. Mike Bone BKK40. 26 Oct 2007.	
77	<i>Geum triflorum</i> Pursh	2021	XX-0-KHD-002573		
78	<i>Peraphyllum ramosissimum</i> Nutt.	2021	US-0-KHD-842399	US: Colorado: Mesa County Borland/Hildreth/Weinstein s.n.	
<b>SAXIFRAGACEAE</b>					
79	<i>Telesonix jamesii</i> (Torr.) Raf.	2021	XX-0-KHD-061163		
<b>SOLANACEAE</b>					
80	<i>Scopolia carniolica</i> Jacq.	2021	XX-0-KHD-981063		



# WILD COLLECTED SEEDS

ORDER #	FAMILY/NAME	IPEN #	COLLECTION OR SOURCE DATA	MEDICINAL
<b>ASTERACEAE</b>				
81	<i>Heliomeris multiflora</i> Nutt.	US-0-KHD-220268	US: Colorado: Routt County: 1 mile west of Steamboat Lake in the Mill Creek Valley, privately owned 35-acre parcel of intact ecosystem adjoining Routt National Forest. ca 8250 ft. 40.78, -106.99. Mike Kintgen s.n. 22 Aug 2021.	*
<b>MELANTHIACEAE</b>				
82	<i>Veratrum californicum</i> T. Durand	US-0-KHD-220267	US: Colorado: Routt County: 1 mile west of Steamboat Lake in the Mill Creek Valley, privately owned 35-acre parcel of intact ecosystem adjoining Routt National Forest. ca 8250 ft. 40.78, -106.99. Mike Kintgen s.n. 28 Sep 2021.	*



*Heliomeris multiflora* near Loveland Pass, Colorado (Jen Toews)

# GENERAL INFORMATION

Please note:

- Seeds of some species are in short supply and will be distributed in order of request.
- Seeds are the result of open pollination and may be hybridized.
- We give no warranty as to the quality, productiveness or any other matter for seeds we supply.
- Species are chosen for their performance in Denver, Colorado's climate; we cannot speak to qualities such as invasiveness in other climates, but we request any data pertaining to invasiveness of these species in other regions to be communicated to Denver Botanic Gardens for future reference. We will not knowingly distribute seed to places where a taxon has been identified as invasive.
- We are unable to supply phytosanitary certificates at this time.

Seeds from cultivated plants collected by Brooke Palmer, Mike Bone, Kevin Williams, Cindy Newlander and Mike Kintgen. Seed requests fulfilled and data tracked by Denver Botanic Gardens volunteers Barry Levene and Gary Waggoner. Catalog coordinated by Cindy Newlander.

## SOURCES FOR NOMENCLATURE

Plant names and family arrangement are based on data found in [The Plant List](#), [Plants of the World Online](#), [The Flora of North America](#) and [Germplasm Resources Information Network \(GRIN\)](#).

## CLIMATIC CONDITIONS IN DENVER (1971-2000)

### 30 YEAR AVERAGE BY PRISM (INCHES)

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	ANNUAL
inches	0.52	0.52	1.42	1.99	2.41	1.75	1.99	2.14	1.21	1.13	0.94	0.71	16.73

### 2021 PRECIPITATION (INCHES)

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	ANNUAL
inches	0.29	1.20	3.18	2.63	5.37	1.86	1.78	0.80	0.15	0.17	Trace	0.12	17.55

### AVERAGE HIGH TEMPS (F)

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	ANNUAL
° F	44.0	46.0	54.0	61.0	71.0	81.0	88.0	86.0	77.0	65.0	52.0	43.0	64.0

### 2021 MONTHLY HIGH TEMP (F)

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	ANNUAL
° F	67.0	69.0	78.0	83.0	88.0	104.0	100.0	100.0	101.0	87.0	82.0	75.0	

### AVERAGE LOW TEMPS (F)

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	ANNUAL
° F	17.0	20.0	26.0	34.0	44.0	53.0	59.0	57.0	47.0	36.0	25.0	17.0	36.3

### 2021 MONTHLY LOW TEMP (F)

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
° F	6.0	-6.0	18.0	17.0	34.0	43.0	50.0	53.0	42.0	32.0	20.0	12.0

2021 data sources: U.S. climate data ([Denver Water weather station](#)) and Denver Botanic Gardens rain gauge

Historical data (1981-2010): [U.S. climate data](#)

Lowest temperature recorded (1921-2021) -25° F/-3.9° C

Highest temperature recorded (1921-2021) 105° F/40.6° C