

## *Astragalus danicus* Retz. Purple Milk-vetch

GB Red List Status: Endangered

*Astragalus danicus* (family Fabaceae) is a perennial herb native to Europe and Asia. In the UK, land-use change, reductions in grazing and agricultural improvement have contributed to its GB Red List status of Endangered.



*A. danicus* in flower

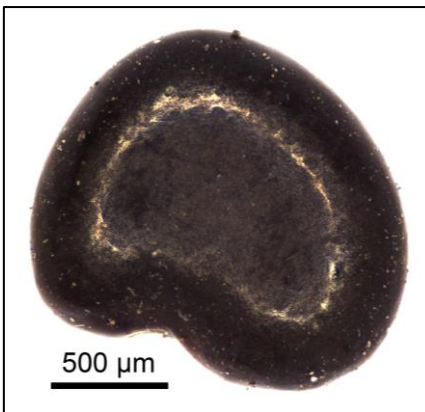
### Seed harvest

*A. danicus* flowers May to July and seeds ripen and disperse July and August. The seed pods have obvious white hairs and contain seeds which are ~1.5mm wide. The approximate dry weight of 1000 seed is 1.262g. Collections conserved at the Millennium Seed Bank were harvested between early July and late August.

### Propagation

Like many species in the Fabaceae family, the seeds are physically dormant, and germination can be triggered by scarifying the seed coat prior to sowing.

The best results were achieved during trials with a spring sow using seeds which had been gently scarified with sandpaper. Sand, calcified seaweed and chalk were added to Petersfield Peat-Free Supreme compost to replicate the varied habitats of this species but may not be necessary for propagation. Seed trays were placed outdoors into a cold frame in March 2021 and germination was observed within two weeks.



*A. danicus* seed

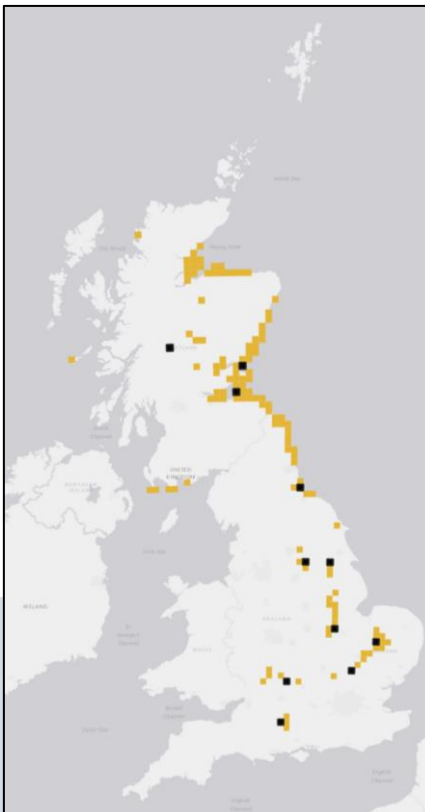
Seedlings were pricked out into plug trays once several pairs of true leaves have grown (around two months after germination) and planted into a free draining peat-free compost with perlite and crushed chalk and placed in a sunny site. Plugs can be planted out the following autumn.

### Ex situ conservation

As of December 2023, the Millennium Seed Bank conserves nearly 15,000 seeds from the UK in 12 collections over 11 different hectads. Seeds are maintaining viability in conventional seed bank conditions (15%RH/ -20°C) with one collection maintaining 96% viability after 11 years of storage.

This map shows the distribution of native *A. danicus* records since 2000 (BSBI) in yellow and MSB conserved collections in black.

*Propagation trials for A. danicus took place at Wakehurst, West Sussex in autumn 2020 and spring 2021 to assess the effects of seed scarification and spring/autumn sows. A maximum conversion rate of 40% (seed sown to adult plant) was achieved with scarified seed sown in spring. See reverse for methodology and results of the best tests in the laboratory and nursery.*



# Germination and Propagation: best tests in laboratory and nursery

The seeds tested were stored in the Millennium Seed Bank since collection in Wiltshire in July 2013

	Laboratory method	Nursery method
Date sown:	June 2014	March 2021
Pre-treatments:	3 weeks at 20°C; Seed coat chip	Seed coat scarified with sandpaper
Germination media:	1% agar gel	Petersfield Peat-Free Supreme compost and Sinclair Special Seed perlite (50:50) with added sand and calcified seaweed. Covered with Sinclair Medium vermiculite.
Germination conditions:	20°C	Outdoor cold frame (temp from 5C-15C between March to May 2021)
Days until germination:	7 days	12 days (peak germination: 12 days)
Germination duration:	14 days	2 months
Germination percentage:	96%	62%
Growing conditions:	N/A	Cold frame (temp from 5C-15C between March to May 2021)
Growing media:	N/A	Petersfield Peat-Free Supreme compost with Sinclair Special Seed perlite and a small amount of crushed chalk and feed
Seedling survival:	N/A	65% of total germinated (40% of total sown)
Replicates:	1 x 50 seed	3 x 50 seed



Images from l-r: *A. danicus* hairless cotyledons (13 days after sow); *A. danicus* seedling 2 months after sow with trifoliolate leaves and; *A. danicus* seedling in a plug tray with pinnate leaves (3 months after sow)

## References and Resources

- Walker, K.J. (2022). Species account: *Astragalus danicus*. Botanical Society of the British Isles, [bsbi.org](https://bsbi.org)
- The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. Joint Nature Conservation Committee, Peterborough (Revised 2021)
- *Astragalus danicus* Retz. in BSBI Online Plant Atlas 2020, eds P.A. Stroh, T. A. Humphrey, R.J. Burkmar, O.L. Pescott, D.B. Roy, & K.J. Walker. <https://plantatlas2020.org/atlas/2cd4p9h.4yq> [Accessed 13/12/2023]

**Please note:** Anyone collecting seeds must do so legally and sustainably. Site conditions and management should be suitable for the sustainability of the population prior to any (re)introduction of seed or plants.

For more information on data, protocols and standards at the Millennium Seed Bank, see our website: [www.brahmsonline.kew.org/msbp](http://www.brahmsonline.kew.org/msbp)

Follow the UK Team on Twitter: @Kew\_MSBUK