University of Central Asia

The University of Central Asia (UCA) was founded in 2000 as a private, not-for-profit, secular university through an International Treaty signed by the Presidents of Kazakhstan, Kyrgyzstan and Tajikistan, and His Late Highness Aga Khan IV; ratified by their respective parliaments and registered with the United Nations. UCA's mission is to promote the social and economic development of Central Asia, particularly its mountain communities, by generating world class research and offering an internationally recognised standard of higher education, to help transform lives and livelihoods across the region, including through the celebration and preservation of Central Asia's rich cultural heritage.

UCA Graduate School of Development

GSD is a School of Development Studies conducting multidisciplinary research and education on the mountainous regions of Central Asia, where communities, economies, and environments are experiencing the effects of rapid climate change. The school has three disciplinary 'hubs': social and economic sciences; environmental and climate sciences; and cultural studies. Together, they address the most significant obstacles to the sustainable development of Central Asia with a particular focus on the challenges presented by climate change.

Mountain Societies Research Institute

The Graduate School's Mountain Societies Research Institute (MSRI) applies scientific expertise to the study of earth surface and environmental processes and interactions that affect mountain societies. MSRI is present at UCA's Khorog campus in Tajikistan, Bishkek, and Dushanbe. MSRI staff also work with UCA's undergraduate Earth and Environmental Sciences Programme and are actively engaged in developing executive and postgraduate education.

The Swiss Cooperation Office, Tajikistan

Within its Cooperation Program for Central Asia (2022-2025), the Government of Switzerland focuses on supporting economic, social, and democratic development, promoting an integrated and regional approach in the complex field of transboundary water management, strengthening economic ties, and promoting good governance. For more info:
wwww.eda.admin.ch/tajikistan

Join us in protecting the Darvaz Plum!

How You Can Help:

- Support conservation initiatives.
- Spread awareness about endangered species.
- Promote sustainable land-use practices.

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Conserving Plant Biodiversity for Future Generations

Darvaz Plum

Switzerland.

UCA UNIVERSITY OF CENTRAL ASIA

KULOB BOTANIC GARDEN

Darvaz Plum

(Prunus darvasica)

Taxonomy:

- **Scientific Name:** *Prunus darvasica*
- **Family:** Rosaceae
- **Common Names:** Darvaz plum, Pamir plum
- **Synonyms:** None widely documented
- **Native range:** Tajik portion of Pamir Mountains - the Darwaz Range.

Description:

Prunus darvasica, or the Darvaz plum, is a rare plant with white to pink flowers and fleshy drupes. It's native to Central Asia and primarily grows in temperate regions. The tree is a shrub or small deciduous tree 1.5 - 2.5 meters in height. Leaves lanceolate to ovate, simple, marginally serrated to dark green, bottom pale. Flowers pale pink to white, 5 petals, scented: bloom early spring before foliage. Fruits thin-skinned yellow to fullred and blakish at maturity, round to oval, small to medium-sized drupes. Extremely juicy flesh, sweetly slightly acid, with a single smooth stone. The bark is smooth grey when young but becomes rough and darker with age.

Key Characteristics:

Prunus darvasica is a deciduous tree and tends to have simple leaves with toothed margins. Displayed five-petaled flowers with numerous stamens yield drupes that are popularly known as stone fruits.

Geographic Distribution and Habitat:

Prunus darvasica occurs in mountainous regions of Central Asia, i.e., the Darvaz Range of Tajikistan. It flourishes at a height of 1500 to 2800 meters above sea level. Favors moderately organic content in well-drained sandy to loamy soils. Most favorable climates are cool, arid to semi-arid, but with a wide amplitude of seasonal temperatures.

Ecological role:

Darvaz plums are pollinated by many species of pollinators, like bees, butterflies, and beetles. It is a good source of food for wildlife as small mammals and birds eat the fruit. Trees play a significant role in soil conservation and the stability of degraded mountain slopes. The root system stabilises the soil and prevents soil erosion on slopes.

Conservation Status:

- *Prunus darvasica* comes under the category of 'conservation concern' because of habitat loss by agricultural encroachment and overgrazing on slopes. Local people's over-exploitation of fruits and branches and lack of regeneration due to lack of organic layer in the soil and disturbance in some places by invasive plant species.
- Conservation Actions: Protection of habitats, community-based conservation, and germplasm collection for ex-situ conservation are needed.

Uses and Economic Importance:

Both fresh and dried fruits are used in cooking, drying, or being manufactured into jam, jellies, and beverages. Darwaz Plum fruit is medicinal and used in traditional medicine for gastrointestinal disorders and is considered a mild laxative. The trees are also being utilised as Agroforestry- planted under agroforestry systems to supply shade and windbreak. The tree is used for fuelwood and small timber purposes by residents.

Cultivation and Propagation

Propagation of the Darwaz Plum is possible using seed as well as cuttings or grafting. Cultivation requirements are healthy plant seeds and full sun to partial shade. Medium water requirements; drought tolerance after planting. It is hardy to cold and harsh winter, but some protection from frost is recommended during flowering.

Threats:

- Habitat loss and degradation due to deforestation.
- Over-harvesting of timber and fruit.
- Climate change that affects its growth regions
- Overgrazing.
- Lack of awareness of its ecological and genetic importance.
- Limited natural regeneration duer to poor organic layers in the ground.

Research and Knowledge Gaps

- Scientific exploration of genetic diversity and adaptability is necessary.
- Documentation of local use and associated knowledge.
- Impact of climate change and grazing on its distribution and productivity.

Current Conservation Activities:

- Conservation in botanical gardens and nature reserves.
- Seed collection, gene bank conservation, and propagation programs.
- Community conservation programs.

Recommendations for Conservation and Sustainable Use:

- Seed banks and botanical gardens need to be started as ex-situ conservation initiatives.
- *Prunus darvasica* needs to be included in agroforestry.
- The residents need to be motivated to pick fruits sustainably.
- Fruit-picking policies and natural habitat protection policies need to be formulated.