

Short communication

Validation of a hybrid name in genus *Beta* (Amaranthaceae) from Armenia

Duilio Iamónico¹ , Anna Avetisyan²  & Tatevik Aloyan³ 

Key words: holotype, nomenclature, *nothospecies nova*

Ključne besede: holotip, nomenklatura, nothospecies nova

Abstract

A recently published hybrid in the genus *Beta* (Amaranthaceae s.l.) was proposed based on both morphological and molecular data. However, from the nomenclatural point of view, no type (holo-) was reported and according to the Arts. 40.1 and 40.7 of the International Code of Nomenclature for algae, fungi, and plants, the hybrid name resulted as not validly published. The validation of the new hybrid is proposed in the present paper (*Beta* × *vardenyatensis* hybr. nov.).

Izveček

Na podlagi morfoloških in molekularnih podatkov je bil nedavno objavljen hibrid iz rodu *Beta* (Amaranthaceae s.lat.). Vendar pa je z nomenklature vidika v skladu s členoma 40.1 in 40.7 Mednarodnega nomenklature kodeksa za alge, glive in rastline ime hibrida neveljavno, ker ni bil naveden holotip. V tem prispevku je predlagana validacija novega hibrida (*Beta* × *vardenyatensis* hybr. nov.).

Corresponding author:

Duilio Iamónico

E-mail:

duilio.iamonico@uniroma1.it

Received: 6. 11. 2024

Accepted: 22. 3. 2026



¹ Department of Environmental Biology, University of Rome Sapienza, Rome, Italy

² Department of Bioenergy and Feed Resources, Center for Ecological-Noosphere Studies NAS RA, Yerevan, Armenia

³ Scientific Center of Agrobiotechnology, ANAU Armenian National Agrarian University, Yerevan, Armenia

Introduction

Beta L. (Amaranthaceae Juss. *sensu* APGIV 2016) comprises 10 species naturally distributed in most parts of Europe, N-Africa, SW-Asia, and India, whereas some taxa occur as aliens in central and N-Europe, tropical and S-Africa, central and E-Asia, SE-Australia, and the Americas (POWO, 2026); the number of subspecies or varieties, which are mainly included in the high variable *B. vulgaris* L. s.l., still remains undefined (Kadereit et al., 2006; Uotila, 2011).

Recently, Iamonico (2019) proposed a classification of the subfam. Betoideae Ulbr. by distinguishing two tribes [Beteae (Moq.) Kadereit & al. and Halbitzieae Ulb.]. Tribe Beteae was further divided into three sections, i.e. Beta, Corollinae (Tranzschel) Ulb., and Macrocarpae Iamonico. Subsections were also considered, i.e. subsect. Beta and subsect. Patulae Iamonico (under sect. Beta), and subsect. Corollinae and subsect. Nanae (Ulbr.) Iamonico (under sect. Corollinae).

Avetisyan et al. (2022), based on collections in Gegharkunik Province (Armenia), proposed to describe a new natural *Beta* hybrid ("*Beta* × *intermedium*") using morphological and molecular data. Despite the authors given both the parent species names (*B. corolliflora* Zosimov and *B. macrorhiza* Stevens) and, more or less scattered throughout the text, a description of the hybrid, no type (holo-) was reported. As a consequence, according to the Arts. 40.1 and 40.7 of the *International Code of Nomenclature for algae, fungi, and plants* (Madrid Code; Turland et al., 2025) and Turland et al. (2020), the hybrid name resulted as not validly published. Here we here validate this new hybrid by a formal description and type indication.

Material and methods

The work is based on both analysis of pertinent literature (cited throughout the text) and the examination of specimens preserved at the herbarium YAI (acronym according to Thiers, 2026 [continuously update]).

Taxonomic treatment

Beta* × *vardenyatensis Aloyan & Iamonico, *hybr. nov.* (*Beta corolliflora* × *Beta macrorhiza*).

Holotype. Armenia. Gegharkunik Province: Vardenyats Mountain Pass, near the road to the Orbelian's Caravanserai, 2410 m a.s.l., 39°56'17"N, 45°13'54"E, 12 July 2019, Aloyan & Harutyunyan s.n. (YAI751!).

Diagnosis. *Beta* × *vardenyatensis* differs from *B. macrorhiza* by stem height (about 90 cm vs. about 40 cm in *B. macrorhiza*), size of the leaf blades [13–15(–16) × (2.0–)2.8–5.2(–6.0) cm vs. 13.9–16.1 × 4.3–6.7 cm in *B. macrorhiza*], length of the petiole [(7–)8–10 cm vs. 4.3–6.7 cm in *B. macrorhiza*], diameter and colour of roots (about 8 cm and red vs. about 12 cm and white in *B. macrorhiza*). From *B. corolliflora*, the new hybrid differs in having petioles longer [(7.0–)8.0–10.0 cm in *B. × vardenyatensis* vs. 4.3–6.7 cm in *B. corolliflora*) and root diameter (about 8 cm in *B. × vardenyatensis* vs. 8–15 cm in *B. corolliflora*).

Description. Perennial herb, with a woody, cylindrical (about 8 cm in diameter) red root. Stem erect-ascending angular, about 90 cm tall. Leaves alternate, petiolate (lower ones) or sessile (upper), entire, ovate to lanceolate [13–15(–16) × (2.0–)2.8–5.2(–6.0) cm], smooth; petioles (7–)8–10 cm long. Inflorescences in elongate panicle-like glomerules; bracts leaflike. Flowers perfect, bisexual with cup-shaped perianth; tepals 5, whitish to yellowish-greenish, flat. Fruits (achenes) including a few seeds.

Etymology. The epithet *vardenyatensis* is dedicated to the location in Armenia where the new hybrid was found.

Proposed vernacular name. Vardenyats beet (English); Vardenyats Chakndegh (Armenian).

Distribution and habitat. *Beta* × *vardenyatensis* is currently known only from *locus classicus* (Vardenyats Mountain Pass, Gegharkunik Province, E-Armenia) where inhabits at 2410 m a.s.l. with *Cephalaria gigantea* (Ledeb.) Bobrov, *Trifolium ambiguum* M.Bieb., *Medicago sativa* L. subsp. *sativa*, *Plantago lanceolata* L., *Artemisia absinthium* L., *Campanula grandiflora* Jacq., and *Cichorium intybus* L.

Conservation status. We prefer to avoid the IUCN assessment of *Beta* × *vardenyatensis* since further localities for this taxon could be found. As a consequence, *B. × vardenyatensis* is to be considered as DD (Deficient Data) according to the IUCN (2024) categories.

Taxonomic notes. *Beta* × *vardenyatensis* belongs to *Beta* sect. Corollinae subsect. Corollinae where both the parents (*B. corolliflora* and *B. macrorhiza*) are included (Iamonico, 2019).

Other specimens. *Beta corolliflora*: ARMENIA. Kotayk province: Hrazdan region (40°23'335"N, 44°39'57"E), 1675 m a.s.l., 20 July 2019, Aloyan & Harutyunyan s.n. (YAI22!). *Beta macrorhiza*: ARMENIA. Gegharkunik province: Vardenyats Mountain Pass, around the Orbelian's Caravanserai (39°55'56"N, 45°14'00"E), 2410 m a.s.l., 12 July 2019, Aloyan & Harutyunyan s.n. (YAI26!).

ORCID iDs

Duilio Iamonico  <https://orcid.org/0000-0001-5491-7568>

Anna Avetisyan  <https://orcid.org/0000-0002-9919-177X>

Tatevik Aloyan  <https://orcid.org/0000-0002-8481-0208>

Acknowledgements

Thanks are due to the staff of the herbarium YAI for the support.

References

- Avetisyan, A., Aloyan, T., Iskandaryan, A., Harutyunyan, M., Jaakola, L., Melikyan, A. (2022). Distribution of Biodiversity of Wild Beet Species (Genus *Beta* L.) in Armenia under Ongoing Climate Change Conditions. *Plants*, 11, 2502. <https://doi.org/10.3390/plants11192502>
- Iamonico, D. (2019). Remarks on the nomenclature of Betoideae (Chenopodiaceae/Amaranthaceae sensu APGIV). *Phytotaxa*, 400(3), 145–164. <https://doi.org/10.11646/phytotaxa.400.3>
- IUCN (2024). The IUCN Red List of threatened species. – Published at <https://www.iucnredlist.org/resources/redlistguidelines> [last accessed 16 March 2026].
- Kadereit, G., Hohmann, S. Kadereit, J. W. (2006). A synopsis of Chenopodiaceae subfam. Betoideae and notes on the taxonomy of *Beta*. *Willdenowia*, 36 (Special Issue), 9–12.
- POWO [Plants Of the Word Online] (2026). Plant of the World Online. – Published at <https://powo.science.kew.org/> [last accessed 16 March 2026].
- Thiers, B. (2026). [continuously updated]. Index Herbariorum. A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. – Published at <http://sweetgum.nybg.org/ih/> [last accessed 16 March 2026].
- Turland, N. J., Wiersema, J.H., Barrie, F. R., Gandhi, K. N., Gravendyck, J., Greuter, W., Hawksworth, D.L., Herendeen, P. S., Klopfer, R. R., Knapp, S., Kusber, W.-H., Li, D.-Z., May, T.W., Monro, A. M., Prado, J., Price, M. J., Smith, G.F. & Zamora Señoret, J. C. (2025). International Code of Nomenclature for algae, fungi, and plants (Madrid Code). *Regnum Vegetabile*, 162. Chicago: University of Chicago Press. <https://doi.org/10.7208/chicago/9780226839479.001.0001>
- Turland, N. J., Wiersema, J. H., McNeill, J. (018–020) (2020). Proposals for a clearer and more concise Article 40 and to resolve conflict between Art. 40.6 and Art. 9.10. *Taxon*, 69(3), 633–635. <https://doi.org/10.1002/tax.12258>
- Uotila, P. (2011). Chenopodiaceae Vent. – Euro+Med Plantbase – the information resource for Euro-Mediterranean plant diversity. – Published at <http://ww2.bgbm.org/EuroPlusMed/PTaxonDetail.asp?NameId=7721045&PRefFk=7300000> [last accessed 6 March 2026].