

Short communication

First records of *Carex otomana* (Cyperaceae) in Italy

Jacob Koopman¹ , Fabio Conti² , Fabrizio Bartolucci³ , Helena Więclaw⁴ 

Keywords: *Carex leersii*, *Carex divulsa* agg., central Italy, *Carex* sect. *Phaestoglochin*

Ključne besede: *Carex leersii*, *Carex divulsa* agg., srednja Italija, *Carex* sect. *Phaestoglochin*

Abstract

Based on a taxonomic revision of herbarium specimens preserved at the *Herbarium Apenninicum* (APP) and *Herbarium Centrale Italicum* (FI), *Carex otomana* has been reported here for the first time in Italy, specifically for the Abruzzo, Lazio, and Molise administrative regions. Furthermore, a recent record of *C. leersii* from the Abruzzo region has been re-evaluated and assigned to *C. otomana*, thereby excluding *C. leersii* from the flora of Abruzzo.

Izvilleček

V članku o pojavljanju vrste *Carex otomana* v Italiji poročamo prvič, in sicer za administrativne regije Abruzzo, Lazio in Molise na osnovi taksonomske revizije herbarijskega materiala v herbarijih *Herbarium Apenninicum* (APP) in *Herbarium Centrale Italicum* (FI). Poleg tega smo ponovno preučili primerek vrste *C. leersii* iz regije Abruzzo in ga določili kot vrsto *C. otomana*, s tem pa izključili pojavljanje vrste *C. leersii* v flori te regije.

Corresponding author:
Fabrizio Bartolucci
E-mail:
fabrizio.bartolucci@uniroma1.it
Received: 8. 7. 2026
Accepted: 15.9.2026



¹ Jacob Koopman, Choszczno, Poland

² Fabio Conti, Centro Ricerche Floristiche dell'Appennino, University of Camerino-Gran Sasso Laga National Park, S. Colombo (Barisciano, L'Aquila), Italy

³ Fabrizio Bartolucci, Dipartimento di Biologia Ambientale, Sapienza Università di Roma, Roma, Italy

⁴ Helena Więclaw, Institute of Marine and Environmental Sciences, University of Szczecin, Szczecin, Poland

Introduction

The genus *Carex* (Cyperaceae) is well known in Italy and represented by 137 species and subspecies (Bartolucci et al., 2024; Portal to the Flora of Italy, 2026), four of which are alien (Galasso et al., 2024; Sanz-Arnal et al., 2025; Portal of the Flora of Italy, 2026).

Carex otomana Molina Gonz., Acedo & Llamas is a perennial and caespitose geophyte and grows primarily in the temperate biome. It is distributed in Europe to Central Asia (France, Poland, Czechia, Bulgaria, North Macedonia, Greece, Türkiye, Iran, Kazakhstan, Kirgizstan, Transcaucasus) (Molina et al., 2008; Kaplan et al., 2016; Koopman, 2022; POWO, 2026). The actual distribution of *C. otomana* is not known in detail. This more or less neglected species probably occurs in more European and nearby Asian countries (Koopman, 2022).

Carex otomana belongs to the sect. *Phaestoglochin* Dumort., which is represented in Eurasia by the *C. divulsa* aggregate (previously treated broadly as the *muricata* group), a notoriously problematic and scarcely researched group (Molina et al., 2008). It has been treated taxonomically in several ways. According to Řepka and Grulich (2014) and Kaplan et al. (2016), *C. otomana* is conspecific with *C. chabertii* F.W.Schultz, which was classified as an enigmatic species, described from Germany (Chater, 1980); further as a subspecies or variety of *C. divulsa*, namely *C. divulsa* subsp. *chabertii* (F.W.Schultz) Asch. & Graebn. and *C. divulsa* var. *chabertii* (F.W.Schultz) Nyman. David (1976) considered it a hybrid between *C. divulsa* and *C. leersii*. The aim of this study was to undertake a comprehensive revision of the herbarium material belonging to sect. *Phaestoglochin* collected in central Italy and housed primarily at the *Herbarium Apenninicum* (APP) and secondarily at the *Herbarium Centrale Italicum* (FI). These revisions have led to the first documented records of *C. otomana* for Italy and the exclusion of *C. leersii* from Abruzzo.

Materials and methods

This study is based on the revision of the herbarium material preserved at the *Herbarium Apenninicum* (APP) and *Herbarium Centrale Italicum* (FI). Herbarium acronyms follow Thiers (2026), the nomenclature of *Carex* is according to Koopman (2022). The distribution map was prepared using the free and open source QGIS ver. 3.44.2. software.

Results and discussion

Based on the revision of the specimens kept at APP and FI, *C. otomana* (Figure 1) has been reported for the first time in Italy from Lazio, Abruzzo and Molise administrative regions (Figure 2). Within the *C. divulsa* agg., also *C. leersii* has recently been reported for Abruzzo (Bartolucci et al., 2025). However, after detailed morphological analysis and comparison with herbarium specimens, we believe it should instead be identified as *C. otomana*. *Carex leersii* should therefore be excluded from the flora of Abruzzo. Both species are morphologically similar but differ in the size and shape of the utricles and the colour of the glumes. *Carex otomana* has utricles 5.0–6.0 mm long, ovate-lanceolate, slightly corky at the base and the glumes are dark or rusty brown, while in *C. leersii* the utricles are 4.5–5.5 mm long, ovoid, not corky at the base and the glumes are pale (Molina et al., 2008; Koopman et al., 2025).

In the study area, the species was found growing in arid meadows and on stony slopes at an altitude ranging from 1270 to 1800 m a.s.l. According to Molina et al. (2008), *C. otomana* occurs between 700 and 1850 m in wet mountain areas (ravine forest, meadows, and springs) in open forest or above the timberline on all types of soil. In the Czech Republic *C. otomana* usually grows in the lowlands to a maximum altitude of 900 m. It prefers semi-shaded places, such as forest edges or forest roads and young tree plantations in clearings (Kaplan et al., 2016).

The discovery of *C. otomana* provides novel taxonomic insights into the genus *Carex* in Italy, and adds a new species to the Italian vascular flora. To evaluate its conservation status in Italy and investigate the presence of additional populations in analogous habitats across the peninsula, further studies are needed.

Specimina visa. LAZIO: Serra Matarazzo sopra Valle Inguignera (San Donato Val Di Comino, Frosinone), WGS84 41.730462N 13.834259E, rupi e ghiaioni, 1450 m, 05/07/2010, *F. Bartolucci*, *N. Ranalli* (APP No. 50034) (sub. *C. divulsa*); ABRUZZO: Versante SW di Valle Cupa (Barisciano, L'Aquila), WGS84 42.358146N 13.613951E, xerobrometi, esp. SW, 1278 m, 15/06/2003, *F. Conti et al.* (APP Nos. 6938, 6939, 6940); MOLISE: Circo glaciale sotto Monte a Mare (Pizzone, Isernia), WGS84 41.668744N 13.977096E, prato, 1800 m, 08/07/1989, *F. Conti* (APP Nos. 29275, 29276, 29277); Barisciano (L'Aquila), WGS84 42.3373N 13.59760E, vicinanze Convento di San Colombo, scarpata stradale, 1100 m s.l.m., 31/05/2023, *M. Pallanza* (FI).



Figure 1: Herbarium specimen of *Carex otomana* kept at APP (No. 6939).
Slika 1: Herbarijski primerek *Carex otomana*, ki ga hrani APP (No. 6939).

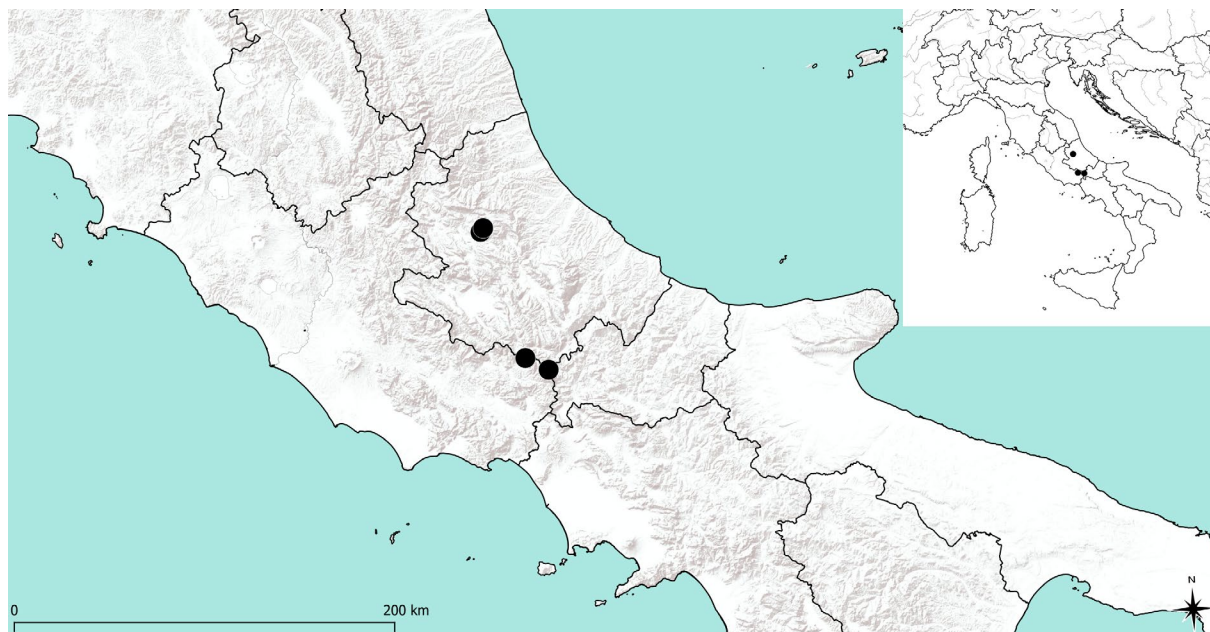


Figure 2: Distribution map of *Carex otomana* in Italy.
Slika 2: Karta razširjenosti vrste *Carex otomana* v Italiji.

Research Data Availability

All data supporting the findings of this study are available within the paper.

References

- Ascherson, P., & Graebner, P. (1902). *Synopsis der Mitteleuropäischen Flora*, 2. Leipzig: Wilhelm Engelmann.
- Bartolucci, F., Domina, G., Bertolli, A., Boni, R., Galasso, G., Caporusso, C., Del Guacchio, E., Laface, V. L. A., Forte, L., Lonati, M., Menini, F., Mezza, I., Napolitano, F., Nota, G., Pallanza, M., Paziienza, G., Pellegrino, G., Prosser, F., Santangelo, A., Tomasi, G., Torino, L., Viciani, D., & Lastrucci, L. (2025). Notulae to the Italian native vascular flora: 19. *Italian Botanist*, 19, 143–154. <https://doi.org/10.3897/italianbotanist.19.159733>
- Bartolucci, F., Peruzzi, L., Galasso, G., Alessandrini, A., Ardenghi, N. M. G., Bacchetta, G., Banfi, E., Barberis, G., Bernardo, L., Bouvet, D., Bovio, M., Calvia, G., Castello, M., Cecchi, L., Del Guacchio, E., Domina, G., Fascetti, S., Gallo, L., Gottschlich, G., Guarino, R., Gubellini, L., Hofmann, N., Iberite, M., Jiménez-Mejías, P., Longo, D., Marchetti, D., Martini, F., Masin, R. R., Medagli, P., Peccenini, S., Prosser, F., Roma-Marzio, F., Rosati, L., Santangelo, A., Scoppola, A., Selvaggi, A., Selvi, F., Soldano, A., Stinca, A., Wagensommer, R. P., Wilhalm, T., & Conti, F. (2024). A second update to the checklist of the vascular flora native to Italy. *Plant Biosystems*, 158(2), 219–296. <https://doi.org/10.1080/11263504.2024.2320126>
- Chater, A. O. (1980). *Carex* L. In T. G. Tutin, V. H. Heywood, N. A. Burges, D. M. Moore, S. M. Walters & D. A. Webb (Eds), *Flora Europaea*, Vol. 5. *Alismataceae to Orchidaceae (Monocotyledones)* (pp. 290–323). Cambridge: Cambridge University Press.
- David, R. W. (1976). Nomenclature of the British taxa of the *Carex muricata* L. aggregate. *Watsonia*, 11, 59–65.
- Galasso, G., Conti, F., Peruzzi, L., Alessandrini, A., Ardenghi, N. M. G., Bacchetta, G., Banfi, E., Barberis, G., Bernardo, L., Bouvet, D., Bovio, M., Castello, M., Cecchi, L., Del Guacchio, E., Domina, G., Fascetti, S., Gallo, L., Guarino, R., Gubellini, L., Guiggi, A., Hofmann, N., Iberite, M., Jiménez-Mejías, P., Longo, D., Marchetti, D., Martini, F., Masin, R. R., Medagli, P., Musarella, C. M., Peccenini, S., Podda, L., Prosser, F., Roma-Marzio, F., Rosati, L., Santangelo, A., Scoppola, A., Selvaggi, A., Selvi, F., Soldano, A., Stinca, A., Wagensommer, R. P., Wilhalm, T., & Bartolucci, F. (2024). A second update to the checklist of the vascular flora alien to Italy. *Plant Biosystems*, 158(2), 297–340. <https://doi.org/10.1080/11263504.2024.2320129>
- Kaplan, Z., Danihelka, J., Štěpánková, J., Ekrt, L., Chrtek, J. Jr., Zázvorka, J., Grulich, V., Řepka, R., Prančl, J., Ducháček, M., Kúr, P., Šumberová, K., & Brůna, J. (2016). Distributions of vascular plants in the Czech Republic. Part 2. *Preslia*, 88(2), 229–322.
- Koopman, J. (2022). *Carex Europaea*, 3rd edition. *The Genus Carex L. (Cyperaceae) in Europe 1*. Weikersheim, Germany: Margraf Publishers.
- Koopman, J., Więclaw, H., & Blackstock, N. (2025). An upgraded key for identifying all native species, subspecies and varieties of the genus *Carex* (Cyperaceae) in Europe and the Caucasus. *Nordic Journal of Botany*, e04640. <https://doi.org/10.1111/njb.04640>
- Molina, A., Acedo, C., & Llamas, F. (2008). Taxonomy and new taxa of the *Carex divulsa* aggregate in Eurasia (section *Phaetoglochin*, Cyperaceae). *Botanical Journal of the Linnean Society*, 156, 385–409. <https://doi.org/10.1111/j.1095-8339.2007.00760.x>
- Portal of the Flora of Italy (2026). Portale della Flora d'Italia/Portal to the Flora of Italy. 2025.2. Published at <https://dryades.units.it/floritaly/> [last accessed 29 May 2026]

POWO (2026). *Carex otomana* Molina Gonz., Acedo & Llamas. In: Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published at <https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:77088652-1> [last accessed 30 March 2026.]

Řepka, R., & Grulich, V. (2014). *Ostřice České republiky: terénní obrazový průvodce*. Prostějov: Mendel Univ. Brno & ČSOP Hořepník.

Sanz-Arnal, M., García-Moro, P., Benítez-Benítez, C., Coca-De-La-Iglesia, M., Gallego-Narbón, A., Barciela, C., Bartolucci, F., Bhandari, P., Bradley, M., Cano, A., Derouaux, A., Donadio, S., Escudero, M., Fabbioni, M., Ford, K.A., Galasso, G., Gebauer, S., González-Elizondo, M. S., Hamon, D., Hoffmann, M. H., Jin, X.-F., Koopman, J., Li, B., Lois, R., Lu, Y.-F., Luceño, M., Márquez-Corro, J. I., Martín-Bravo, S., Mesterházy, A., Míguez, M., Morales-Alonso, A., Muasya, A. M., Muñoz-Schüler, P., Naczi, R. F. C., Oleas, N., Pereira-Silva, L., Řepka, R., Reznicek, A. A., Sanbonmatsu K. K., Sánchez, F., Spalink, D., Strid, A., Vanormelingen, P., Verloove, F., Wilson, K. L., Yano, O., Zhang, S., & Jiménez-Mejías, P. (2025). A comprehensive database of expert-curated occurrences for the genus *Carex* L. (Cyperaceae). *Global Ecology and Biogeography*, 34(9), e70123. <https://doi.org/10.1111/geb.70123>

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 29 May 2026].