

CHROMOSOME NUMBERS FOR RANUNCULUS DOLOSUS AND SILENE CONOIDEA FROM IRAN

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Chromosome numbers are reported for *Ranunculus dolosus* (Ranunculaceae), $2n=32$ and *Silene conoidea* (Caryophyllaceae), $2n=24$. These species were collected from NW Iran in W Azarbaijan Province. Idiograms were prepared for both species. Symmetrical karyotypes are placed in class 1B in *Ranunculus dolosus* and class 1A in *Silene conoidea*. Karyotype formula are $8m+6sm+2st$ in *Ranunculus dolosus* and $12m$ in *Silene conoidea*.

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Key words: Karyotype; chromosome number; *Silene conoidea*; *Ranunculus dolosus*; Iran

اعداد کروموزومی گونه‌های *Ranunculus dolosus* و *Silene conoidea* از ایران

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عدد کروموزومی و کاریوتیپ گونه‌های: *Ranunculus dolosus* (Ranunculaceae) ($2n=32$) و *Silene conoidea* (Caryophyllaceae) ($2n=24$) از ایران گزارش می‌شوند. رویشگاه‌های طبیعی این گونه‌ها شمال غرب ایران است. ایدیوگرام گونه‌ها ارائه شدند. تقارن کاریوتیپی در گونه *Ranunculus dolosus* 1B و در گونه *Silene conoidea* 1A می‌باشند. فرمول کاریوتیپی در گونه *Ranunculus dolosus* $8m+6sm+2st$ و در گونه *Silene conoidea* $12m$ می‌باشند.

INTRODUCTION

Cytological data are of great importance for understanding of relationship and evolution in angiosperms (Ehrendorfer & al. 1968; Keshavarzi 2012). Determination of chromosome numbers and karyotypes of the native Iranian plants are the major aim in this study. Chromosome numbers of some Iranian plants have been reported by Ghahramaninejad & al (2013). In this work the cytological data for *Ranunculus dolosus* (Ranunculaceae), an endemic species and *Silene conoidea* (Caryophyllaceae) are provided. These species were collected from wetland habitats in NW of Iran. *Ranunculus dolosus* is an endemic of Iran.

MATERIALS AND METHODS

For cytological study, rootlets were collected from

germinated seeds on wet filter paper in petri dishes at room temperature, when they reached 1–1.5 cm in length, rootlets were collected. The material was pretreated in alphabromonaphtalene for 2 hour, fixed in solution of ethanol- acetic acid (3: 1) for 4 hours. The meristems stained in hematoxylin and squashed in a drop of 45% acetic acid solution. Metaphase plates were examined with light microscope, Olympus BH2-RFCA under oil immersion (x100).

RESULTS

Ranunculaceae

Ranunculus dolosus Fisch. & C. A. Mey

Specimen studied: East Azarbaijan: Boostan Abad, After Said Abad Ghoorigol, 1869 m, 30.07.2013, N $37^{\circ}.54'.02.40''$, E $46^{\circ}.42'.5.11''$, Ranjbari, 8234 East Azarbaijan Herbarium.

The genus *Ranunculus* have about 50 annual and perennial herbaceous species in Iran (Pakravan 2012). Basic number of chromosomes in *Ranunculus* species are $x=7$ and $x=8$ (Ovidio & Marchi 1990). The somatic chromosome number $2n=32$ is reported here for the first time for *Ranunculus dolosus* (fig. 1). Idiogram of *Ranunculus dolosu* is presented (fig 2). Symmetrical karyotype were in class 1B (Stebbins 1971). Karyotype formula was $8m+6sm+2st$.

Caryophyllaceae

Silene conoidea L.

Specimen studied: West Azarbaijan, Oroomieh, Salmas between village Koozerash and Haji Jaghan, 2281 m, 20.07.2013, N $38^{\circ}.08'.40.9''$, E $44^{\circ}.27'.25.3''$, Ashrafi 101602 TARI.

The genus *Silene* has about 100 species in Iran (Nejati Edalatiyan & al 2011) which are herbaceous annuals and perennials. Chromosome number of *S. conoidea* was previously reported as $2n=20, 24, 30, 48, 72$ and $n=20$ (Abdel Bari 1973, Dong 2011, Jeelani 2011). Also, chromosome number $2n=24$ has been reported in a previous work (Flora of North America Editorial Committee 2005). In Iran the previous report on *S. conoidea* collected from Chaharmahal va Bakhtiari Province shows $2n=20$ (Aryavand & Favarger 1980) The somatic chromosome number $2n=24$ is reported here for this species (fig. 1). Chromosomes are moderately symmetrical, in class 1A (Stebbins 1971). Idiogram of *Silene conoidea* is presented. Karyotype formula is $12m$, (fig. 2).

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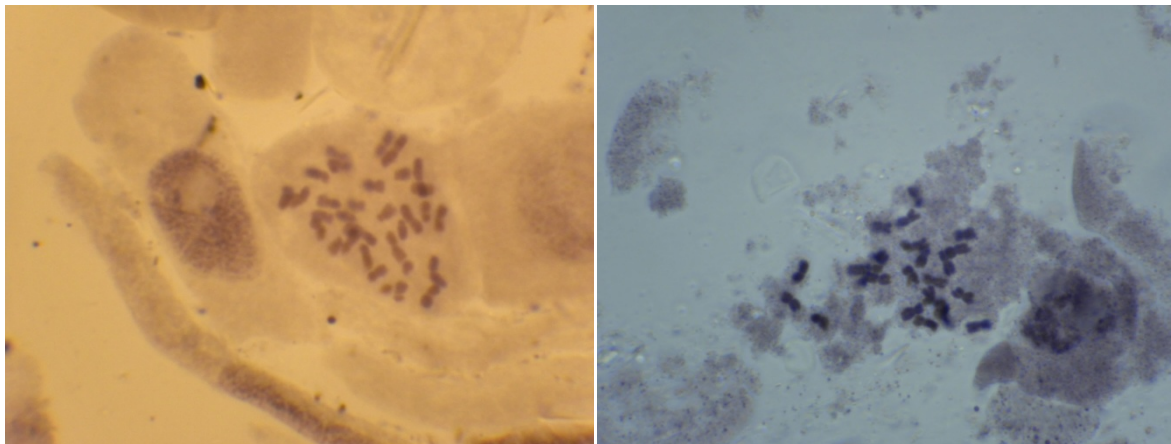


Fig.1. Somatic metaphases in *Ranunculus dolosus* (left); *Silene conoidea* (right).

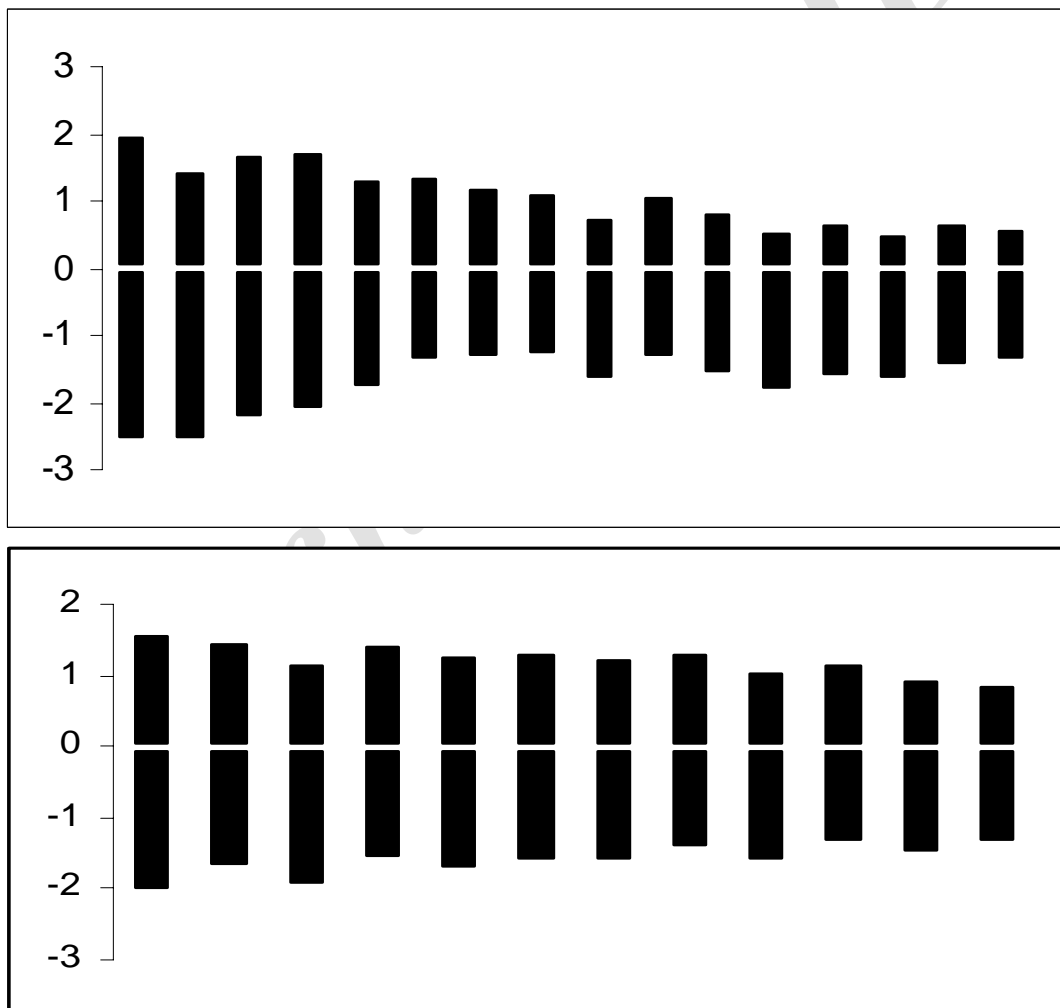


Fig 2. Idiograms of *Ranunculus dolosus* (above) *Silene conoidea* (below).