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TÜRKİYE'DE YETİŞEN HELLEBORUS TÜRLERİNİN KROMOZOMLARI

CHROMOSOMES OF HELLEBORUS GROWN IN TURKEY

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SUMMARY

Chromosome numbers have been counted for 2 species of *Helleborus* (Ranunculaceae) from Turkey: *H. vesicarius* Aucher and *H. orientalis* Lam. Both have the same diploid number of 2n=32, but their karyotypes are morphologically distinct.

ÖZET

Türkiye'de yetişen iki *Helleborus* (Ranunculaceae) türünün kromozom sayıları saptanmıştır. Bu türler, *H. vesicarius Aucher* 2n=32 ve *H. orientalis* Lam. 2n=32'-dir. Her iki türde aynı diploid kromozom sayısına sahip olmasına rağmen karyotipleri morfolojik olarak farklıdır.

INTRODUCTION

The genus *Helleborus* L. (Ranunculaceae) is represented by 2 species in Turkey: *H. vesicarius* Aucher and *H. orientalis* Lam. H. vesicarius is an endemic species and of an isolated position within the genus. This species has a limited distribution in Turkey and is found mainly in Southern Anatolia (Amanus, Gaziantep, Kahramanmaraş). *H. orientalis,* is an euxine element and iv widely distributed in North Anatolia.

In this study chromosome number and chromosome morphology of these two species have been investigated.

Key words: Helleborus, Ranunculaceae, chromosome number and chromosome morphology.

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MATERIAL AND METHOD

The chromosomes were counted in the root-tips collected from living specimens in the Botanic Garden of the Faculty of Science, University of Istanbul. Their voucher specimens were collected from wild population and they are kept in the Herbarium of the Faculty of Science, University of Istanbul (ISTF).

The karyological investigations were carried out in the Department of Pharmaceutical Botany, Faculty of Pharmacy, Istanbul, using the root tip squash technique. The following procedure has been adapted from the method used by N. Özhatay (5). Root tips were pretreated in saturated solution of alphabromonaphthalene for 3.5 - 4 hours at room temperature. They were then fixed in acetic alchol (1 part glacial acetic acid, 3 parts absolute alcohol), hydrolized for 8 minutes at 60°C, and stained with using the standart Feulgen technique. Permanent slides were made by liquid CO_2 method. Drawings were obtained by means of a drawing tube on a Leitz SM Lux microscope. Photographs were taken with a triocular Olympus microscope.

a

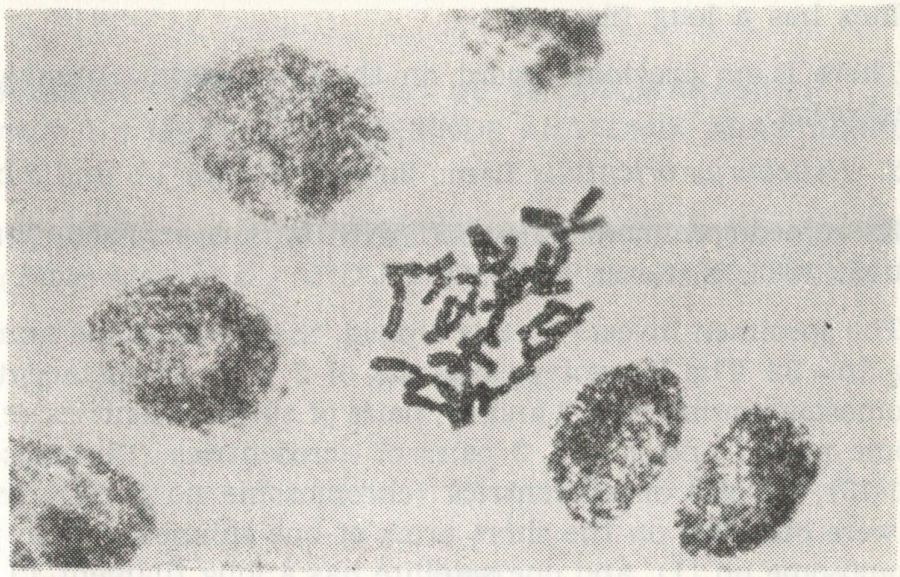
b

Figure 1 : Karyotype ideogram of chromosome in the root tips during mytotic divisions (X 2500).
a) H. vesicarius (2n = 32), b) H. orientalis (2n = 32)

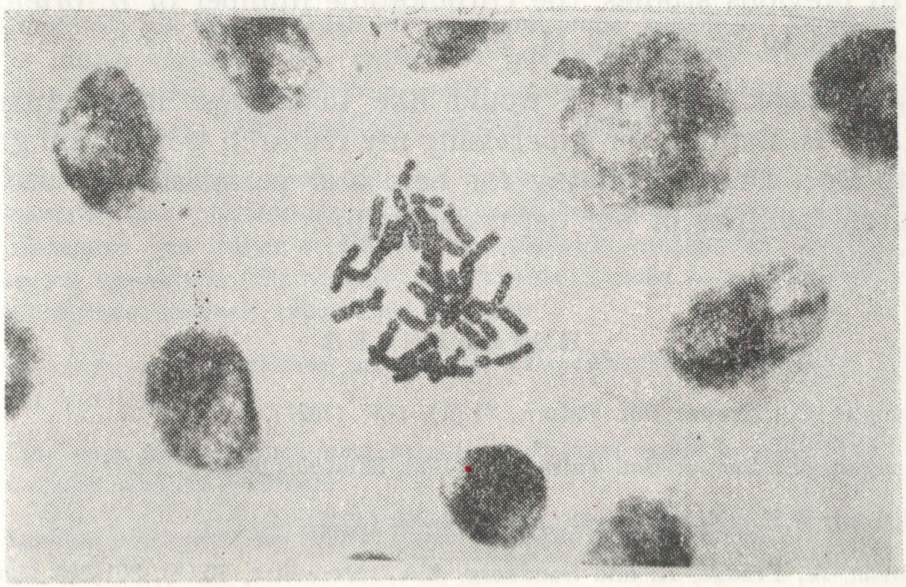
RESULTS

1. *Helleborus vesicarius* Aucher, 2n=32, Figure 1 a and 2 a.

Examined specimen: C6 ADANA: Bahçe, Gölgediği, 5 Mayıs 1982, N. Sezer, 35423, ISTF.



a



b

Figure 2 : Chromosomes in the root tips during mytotic division (X 1250). a) H. vesicarius (2n=32), b) H. orientalis (2n=32).

The Chromosome number has been found as 2n=32, diploid. The karyotype consists of metacentric (chromosome no 1-5 and

9-11), submetacentric (chromosome no 6-8, 13), acrocentric (chromosome no 12, 14, 15) and telocentric (chromosome no 16) chromosome pairs. Secondary constrictins have been observed on the short arms of the submetacentric (chromosome no 13) pair. Chromosome no 15, carries satellites on the short arms and one of the satellites has a long filament.

There is no previous record on the chromosome number of *H. vesicarius*.

2. *Helleborus orientalis* Lam., 2n=32, Figure 1 b and 2 b.

Examined specimen: A2(E) ISTANBUL: Sarıyer, Fatih Forest, 13 Şubat 1983, N. Sezer, 35431, ISTF.

The specimen investigated is diploid, the chromosome number being 2n=32. The Karyotype consists of 3 pairs of metacentrics (chromosome numbers 1, 2 and 8), pairs of submetacentrics (chromosome no 3-7 and 9, 10), 3 pairs of acrocentrics (Chromosome no 11-13), 3 pairs of telocentrics (chromosome no 14-16). Satellites were observed on the short arms of one submetacentric pair (chromosome no 11), and one satellite has a long filament (3, 4).

In previous studies, the chromosome number of *H. orientalis* was fonud to be 2n=32 (1, 2).

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