

مطالعات کروموزومی روی بعضی از واریته‌های خربزه (*Cucumis melo* L)

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چکیده

مطالعات میوزی روی چهار واریته و دو کولتی وار از گونه *Cucumis melo* شرح داده شده است. نتایج حاصل نشان می‌دهد که این گونه از پایداری عددی کروموزومی ($x=12$) برخوردار است. شمارش‌های کروموزومی و تعیین فراوانی کیاسما در این مقاله برای اولین بار گزارش می‌شود.

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CHROMOSOME STUDIES OF SOME VARIETIES OF MUSKMELON (*Cucumis melo* L)

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Abstract

Meiosis is described in four varieties and two cultivars of Cucumis melo of Iran. This indicates that this species has stability in chromosome number. Chromosome numbers and

chiasma frequency are determined here for first time.

Abbreviation: CV. = cultivar. I.B.B= Institute of Biochemistry and Biophysics.

INTRODUCTION

Kuzukhov (1930) for the first time reported that C.melo was a diploid with $2n=24$ chromosomes. Most studies until this time agree with the above report. But, only one report shows $2n=20$ and [1,2] reported a variety of C.melo from Iran with $2n=24$ chromosomes.

But, Locality of it was not clear. This is the first independent chromosome study on C.melo of Iran.

MATERIALS AND METHODS

We studied six specimens of C.melo representing four varieties and two cultivars (CV.), table 1. The anthers of flowers buds were fixed and stained by using the method previously described [4], and permanent slides are filed in the cytogenetics section of (I.B.B). Voucher specimens have been placed in the Herbarium of Faculty of Horticulture, University of Tehran, Karaj.

OBSERVATION AND DISCUSSION

The results of this study are summarised in table 1, but each variety will be dealt with in detail below.

1- C.melo var. dudain Naud. $2n=24$ (Fig. 1)

This variety has been known as "Dastanboo" in Iran. Meiosis was regular with a mean chiasma frequency of 1.95 per bivalent. Chiasmata were mostly terminal. This is the first chromosome number report for this variety.

2 - C.melo var. flexuosus Naud. $2n=24$ (Fig. 2)

The chiasma frequency, determined from a single

cell only, was 2 per bivalent. Chiasmata were mostly terminal and less frequently interstitial. This is the first chromosome number report for this variety.

3 - C.melo var. inodorus Naud. CV. Abbasshuri. $2n=24$ (Fig.3)

This CV. has been known as "Ivanaki" and/or "Abbasshuri" in Iran. Meiosis was regular with a mean chiasma frequency of 1.88 per bivalent. This is the first chromosome number report for this CV.

4 - C.melo var. Inodorus Naud. CV. Tashchandi $2n=24$ (Fig.4)

Twelve bivalents were seen both at diakinesis and metaphase I. The chiasma frequency was 1.93 per bivalent. Occasionally in some cells non-disjunction, at first anaphase was observed. This chromosome number is reported for the first time.

5 - C.melo var. Inodorus Naud. CV. Zard-e-Karaj. $2n=24$ (Fig.5)

Chromosome behavior in this CV. was similar to CV. Tashchandi. In some cells at, first anaphase, non-disjunction was observed. Chiasma frequency was 1.93 per bivalent as in CV. Tashchandi, This chromosome number reported for the first time.

6 - C.melo var. reticulatus Naud. CV. Samsuri-Varamin $2n=24$ (Fig.6)

Meiosis in this CV. was regular with a mean chiasma frequency of 1.91 per bivalent. The chromosome number is reported for the first time.

All the C.melo varieties examined in this study as in many other works has $2n=24$ chromosome. This

indicates stability in basic number ($x=12$) in this species. Polymorphism in varieties as has been shown [2], depends on the length of chromosome, quantity of chromatine, location of centromer, chiasma frequency and other factors. Eventhough artificial polyploidy has not been succeeded [3], and considering that many varieties and cultivars are endemic to Iran, experiencing hybridization between varieties and

cultivars would be beneficial.

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TABLE I

Cucumis melo varieties and cultivars.

Variety and (CV.)	origin	Chromosome number (2n)	Mean chiasma frequency per bivalent
<u>C.melo</u> var. dudaim Naud	Garmsar	24	1.95
<u>C.melo</u> var. flexuosus Naud	Karaj	24	2
<u>C.melo</u> var. flexuosus CV. Abbsshuri	Varamin	24	1.88
<u>C.melo</u> var. Inodorus Naud. CV. Tashcandi.	Karaj	24	1.93
<u>C.melo</u> var. Inodorus Naud. CV. Zard-e-Karaj	Karaj	24	1.93
<u>C.melo</u> var. reticulatus Naud CV. Samsuri Varamin	varamin	24	1.91

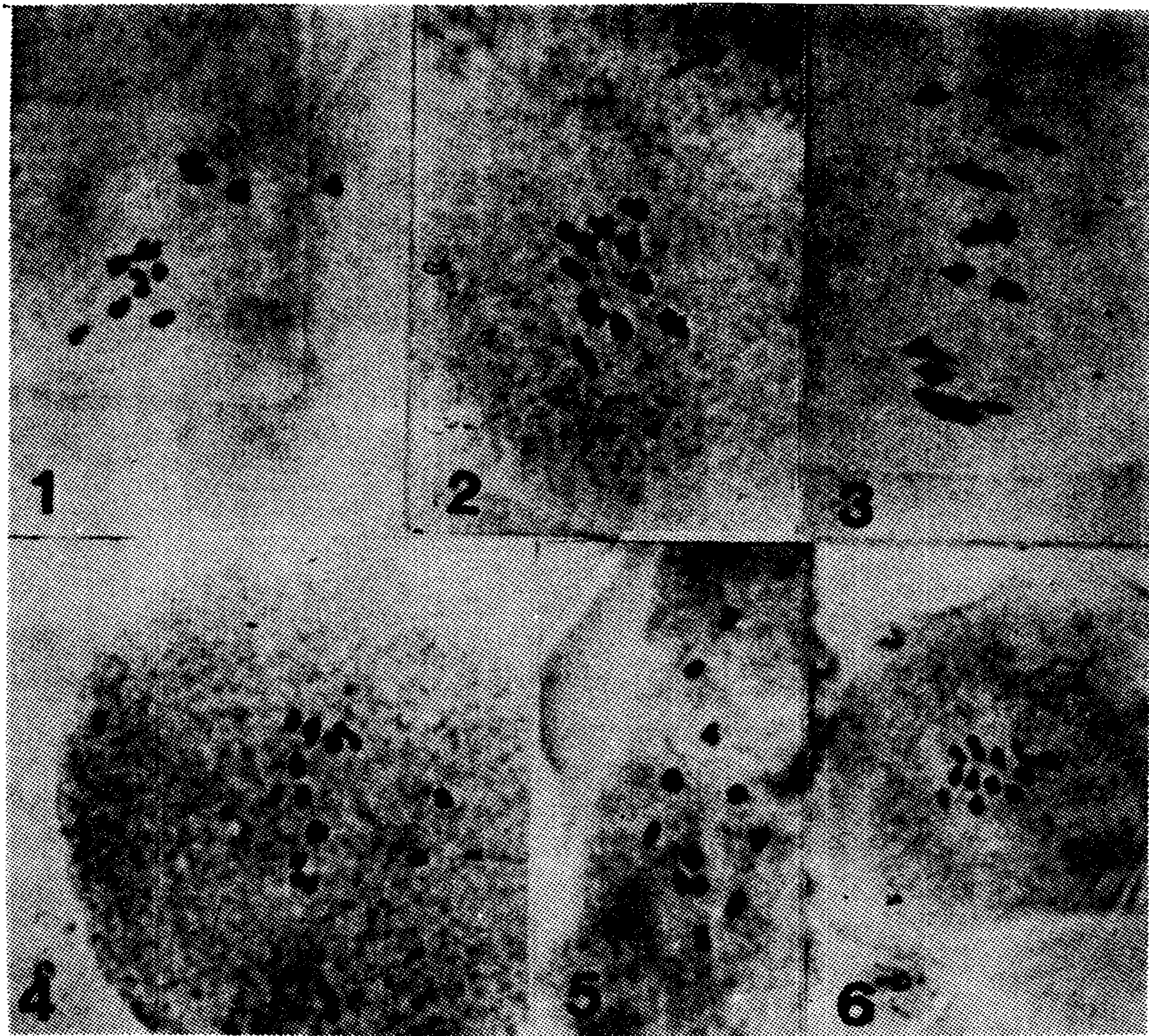


Fig. 1-6. First metaphase of meiosis in C.melo

1- C.melo var dudain.

3 - C.melo var Inodorus CV. Abbasshuri.

5 - C.melo var Inodorus CV. Zard-e-Karaj.

2 - C.melo var flexuosus.

4 - C.melo var Inodorus CV. Tashchandi .

6 - C.melo var reiculatus CV. Samsuri-Varamin

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