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Contribution to the chromosome numbers of some vascular plants from Israel and Russia

Новые данные по числам хромосом некоторых сосудистых растений из Израиля и России

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Ключевые слова: числа хромосом, Amaranthaceae, Asteraceae, Caryophyllaceae, Chenopodiaceae, Frankeniaceae, Израиль, Россия.

Summary. Somatic chromosome numbers of 10 species of Amaranthaceae s. str., Asteraceae, Caryophyllaceae, Chenopodiaceae and Frankeniaceae were counted. Chromosome numbers of *Atriplex intracontinentalis* Sukhor. ($2n = 18$), *Corispermum filifolium* C. A. Mey. ex Becker ($2n = 18$) and *Frankenia tuvinica* Lomon. ($2n = 20$) have not been reported before. With the exception of *Gypsophila capillaris* (Forssk.) C. Chr., chromosome numbers of *Amaranthus albus* L. ($2n = 32$), *Dyssodia tenuiloba* (DC) B.L. Rob. ($2n = 24$), *Lactuca viminea* (L.) J. Presl et C. Presl ($2n = 18$), *Tragopogon coelesyriacus* Boiss. ($2n = 12$), *Chenopodium opulifolium* Schrad. ex W.D.J. Koch & Ziz ($2n = 54$), *Chenopodium missouriense* Aellen ($2n = 54$) have not previously been counted using material growing in Israel.

Аннотация. Приведены числа хромосом для 10 видов из семейств Amaranthaceae s. str., Asteraceae, Caryophyllaceae, Chenopodiaceae и Frankeniaceae. Для *Atriplex intracontinentalis* Sukhor. ($2n = 18$), *Corispermum filifolium* C. A. Mey. ex Becker ($2n = 18$) и *Frankenia tuvinica* Lomon. ($2n = 20$) числа хромосом не были известны ранее. Впервые на материале из Израиля указаны числа хромосом для *Amaranthus albus*

L. ($2n = 32$), *Dyssodia tenuiloba* (DC) B.L. Rob. ($2n = 24$), *Lactuca viminea* (L.) J. Presl et C. Presl ($2n = 18$), *Tragopogon coelesyriacus* Boiss. ($2n = 12$), *Chenopodium opulifolium* Schrad. ex W.D.J. Koch et Ziz ($2n = 54$) и *Chenopodium missouriense* Aellen ($2n = 54$).

For chromosome counts, the seeds were germinated in petri dishes. The root tips were pretreated in 0.1 % colchicine for two hours, fixed in ethanol-acetic acid (3:1) and subsequently stained with 1% acetic hematoxylin (Smirnov, 1968). The observations of chromosomes of the mitotic metaphases were made using an Axioscop-40 light microscope with built-in AxioCam MRc 5 video camera (Carl Zeiss, Germany). Chromosome numbers in the literature were checked using Index to Plant Chromosome Numbers (Goldblatt et Johnson, 1979+) and Chromosome Counts Database (Rice et al., 2015). Three or fewer chromosome counts for the species are discussed in detail.

A single asterisk (*) indicates the first chromosome count for the species; a double asterisk

(**) indicates the first chromosome count from the species collected in Israel.

Amaranthaceae

***Amaranthus albus* L. – $2n = 32$.

“Israel, Golan Heights, near Merom village, roadside, 6 X 2012, A. Shmida, A. Sukhorukov, M. Kushunina s. n.” (MW).

The same chromosome number for this species has been reported by many authors (Rice et al., 2015).

Asteraceae

***Dyssodia tenuiloba* (DC) B.L. Rob. – $2n = 24$.

“Israel, Dead Sea, Ein Bokek, weed near hotels, 9 X 2012, A. Sukhorukov, M. Kushunina, 294” (MW).

The same chromosome complement is known from Pakistan (Razaq et al., 1994) and USA (Strother, 1989 sub *Thymophylla tenuiloba* (DC) Small).

***Lactuca viminea* (L.) J. Presl et C. Presl – $2n = 18$.

“Israel, Golan Heights, semi-desert, 6 X 2012, A. Sukhorukov, M. Kushunina, A. Shmida s. n.” (MW).

The literature data have always pointed to diploid number $2n = 18$ (Rice et al., 2015)

***Tragopogon coelesyriacus* Boiss. – $2n = 12$.

“Israel, Jerusalem, Giv’at Ram, near university campus, weed, 1 V 2012, A. Sukhorukov s. n.” (MW).

This chromosome number confirms the earlier counts reported by Wilson (1983) based on material from Iraq, Jordan, Lebanon and Turkey.

Caryophyllaceae

Gypsophila capillaris (Forssk.) C. Chr. – $2n = 36$.

“Israel, West bank, 20 km E from Jerusalem, hill slope, 8 X 2012, A. Sukhorukov, M. Kushunina, A. Shmida s. n.” (MW).

The same number is known from previous investigation (Waisel, 1962 sub *G. rokejeka* Delile).

Chenopodiaceae

**Atriplex intracontinentalis* Sukhor. – $2n = 18$.

“Russia, Samara prov., near Sanchelevo village, saline meadow with *Camphorosma songorica* and *Puccinellia* sp. 22 IX 2013, M. Lomonosova 1063a” (NS).

***Chenopodium opulifolium* Schrad. ex W.D.J. Koch et Ziz – $2n = 54$.

“Israel, Jerusalem, Giv’at Ram, weed near the university campus, 5 X 2012, A. Sukhorukov, M. Kushunina s. n.” (MW).

Only hexaploidy is reported in the literature (for more see Mandák et al. (2012).

***Chenopodium missouriense* Aellen – $2n = 54$.

“Israel, Jerusalem, Giv’at Ram, weed, 5 X 2012, A. Sukhorukov s. n.” (W, NS).

The same chromosome complement for this taxon was established for Sweden (Kjellmark, 1934), USA (Keener, 1970) and Canada (Bassett, Crompton, 1982 sub *C. album* var *missouriense* (Aellen) Bassett et Crompton).

**Corispermum filifolium* C. A. Mey. ex Becker – $2n = 18$.

“Russia, Volgograd prov., beside the Volga river in Volgograd, alluvium, 29 IX 2012, A. Sukhorukov s. n.” (G).

Frankeniaceae

**Frankenia tuvinica* Lomon. – $2n = 20$.

“Russia, Tyva republic, Cheder lake, solonchak with *Salicornia perennans*, 31 IX 2013, M. Lomonosova 979” (NS).

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