



SPECIES COMPOSITION AND DISTRIBUTION OF CUSCUTA (CUSCUTA L) PARASITE IN OUR REPUBLIC

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ABSTRACT

Increase production grain in Uzbekistan must be provided first of all by increasing to productivities. In condition of the modern intensive husbandry fight with weed is one of the most important system element of the husbandry, from which depends increase to productivities agricultural.

Cuscuta (*Cuscuta* L.) belongs to the Cuscutaceae family and belongs to the group of free-living plants. 170 species are found in temperate regions. Annual grass without leaves and roots, object of strict quarantine. The stem grows straggly, stringy, branched, the body is yellow, greenish-yellow or orange. The flowers are small white or pale pink. The fruit is a several-seeded round capsule with a hard shell, and the seed has a coiled ridge. The thick end of the stem, covered with hairs, grows into the soil, and the other end separates from the seed coat and clings to the host plant and wraps around, penetrating deep into the plant tissues, sucking the sap and drying it.

Cuscuta grows from seeds and stems and produces 10-50 thousand seeds in one plant. Species found in Central Asia: mainly damage alfalfa, hemp, cotton, vegetables, etc.; mainly affects alfalfa, as well as peas, sorghum and sorghum; Chinese carp. Hemp, jute, cotton, beets, melons, alfalfa, partially damage potatoes and tomatoes; European weevil damages hemp, potatoes, tobacco, maple, alfalfa, alfalfa, nastrin and bushes, trees;

Representatives of the *Cuscuta* L. family are native to the tropics of the American and African continents. Zarpechak spread from the tropics of the African continent to the north to southern Europe, to the east to the Asian continent, adapting to new conditions and plants [1; 88-b].

At present, sorghum species are growing well in the southern regions of the globe with a warm climate and moderate rainfall.

Although *Cuscuta* species are considered quarantine objects, their range is expanding.

Studying the distribution of species belonging to the genus *Cuscuta* in the territory of the Republic of Uzbekistan while working with literary sources.

It became known that it was implemented from the middle of the 20th century.

17 species of *Cuscuta*, and 10 species in Tashkent region were found to be harmful. Almost half a century has passed since then, the climate, soil, farming system, structure and culture have changed dramatically. But still the problem of *cuscuta* has not been completely

solved, but its distribution area and damage are increasing year by year. *Cuscuta* is occupying the plains, foothills, and even mountainous areas, causing great economic damage.

Our research was carried out in 2021 mainly in the fields of farms of Tashkent, Jizzakh, Kashkadarya regions of our republic..

In the course of our experiments, in Tashkent and Kashkadarya regions, we found areas of sorghum and flax crops infected with sorghum, which type of sorghum was spread, and research was conducted on the level of damage.

C. chinensis, *C. epilinum*, *C. campestris* species of sedge beetle were observed to parasitize agricultural crops in Tashkent, Kashkadarya and Jizzakh regions. See Table 1.



Figure 2. A mock crop infected with a blight

Table 1. Species of the *Cuscuta* genus recorded in our republic

No	Species of the genus <i>Cuscuta</i>	Tashkent region	Jizzakh region	Kashkadarya region
1	<i>C.appoximata</i> Bab.	-	-	-
2	<i>C.breviflora</i> Vis.	-	-	-
3	<i>C.campestris</i> Vunck.	+	+	+
4	<i>C.chinensis</i> Lam.	+	+	+
5	<i>C.cupulata</i> Engelm	-	-	-
6	<i>C.epilinum</i> Weiche	+	+	+
7	<i>C.europaea</i> L.	-	-	-
8	<i>C.lehmanniana</i> Bunge	-	-	-
9	<i>C.monogyna</i> Vahl.	-	-	-

Species of the genus *Cuscuta*

	Types and classification of <i>Cuscuta</i>	Pictures
1	<p><i>C.appoximata</i> Bab.-It is an annual parasite. the stem is thin, light green or slightly colored, bare, smooth. 3-4 seeded; seeds small, irregularly oval or almost spherical in outline, about 1 mm in diameter, dark brown or brown when ripe, rough</p>	
2	<p><i>C. breviflora</i> Vis.-Annual parasite, flowers in dense panicles, 3.5 mm long. Ovary and 2 columnar lobes. A box with a diameter of 3.5-4 mm</p>	
3	<p><i>C.campestris</i> Vunck.-simple roots and no leaves. The stems of <i>C. campestris</i> surround the plants and are attached to them by haustoria. The stem is filiform, yellow or pink-yellow, up to 0.8 mm in diameter, branched. The flowers are white or greenish-white, collected in loose inflorescences of 3-8 pieces. Corollas 2 - 2.5 mm long, calyx 1.5 - 2 mm long, hemispherical. The fruit is a light brown box with 2 - 4 seeds. The seeds are oval, light brown or brown, 1.25-2.5 mm long, 1-1.5 mm wide. Seeds germinate at relatively high temperatures (+13 to 14 ° C only on the 9th day, +20 to +30 ° C - on the 3rd day). The weight of 1000 seeds is 1-1.25 g. They do not lose their ability to germinate in the soil for 3 years. The seeds pass through the intestinal tract of animals and do not lose their viability, they remain viable for 10 years. Ripe seeds germinate faster than unripe seeds with hard, poorly permeable shells. Fertility up to 100,000 seeds. It blooms in July-August</p>	

4	<p><i>C.chinensis Lam.</i>- thin yellow parasitic plant without leaves and roots. It forms dense paniculate inflorescences from glomeruli, which are very small, with two distinct capitate stigmas and 3-4 seeds per capsule. Its pollen is covered with a small, reticulate ectexine. Chinese gorse flowers continue to bloom from June to October, December to March, and February to May.</p>	
5	<p><i>C.cupulata Engelm</i> is an annual stem parasitic plant. The stem is thin, pink-yellow or green, smooth, hairless. The flowers are white, collected in dense balls. The rest of the characters are the same as other particles. Often affects alfalfa. Fenugreek seeds can remain viable for up to 10 years, but their viability in the soil does not last more than three years. Thin-stemmed zarpeak overwinters in the root neck of alfalfa.</p>	
6	<p><i>C.epilinum Weiche</i> – The stem is stringy, greenish-yellow, wraps around the stems of flax or other plants, clinging to them with the help of special suckers. flowers are small, persistent, yellowish-white. Seed size - up to 4 mm in diameter. Color - gray or brown-gray.</p>	
7	<p><i>S. europaea L.</i> is an annual parasitic plant; a species belonging to the zarpeak family. Quarantine grass. There is no root. The stem is 0.5 to 1.5 m long, 2.5 mm thick, red or reddish, branched, hairless, smooth. Flowers 2-3 mm long, on short pedicels, pink or pink-white, very large, up to 1.5 cm in diameter. The outline of the seeds is almost round or round-ovoid, the inside is angular, the length is from 0.8 to 1.3 mm. the color is dark brown, sometimes black, rarely gray.</p>	

8	<p><i>C.lehmanniana Bung</i> - The stem is rough, brown, not connected to each other, forming several spirals around the body of the host. Leaves 2.5-3 x 1.5-2 mm, elliptic, Seeds 4, ovate, cap-shaped, brown-black, ± shiny, 2.2-2.5 x 2-2.4 mm. similar, without intrastylar pore, spreading ovate in calyx, spreading, with dried corolla at apex. Seeds 4, ovoid, capoid, brown-black, ± shiny, 2.2-2.5 x 2-2.4 mm.</p>	
9	<p><i>C.monogyna Wahl.</i>- An annual plant. Stem cordate, up to 2 mm thick, about 1 mm long, corolla 3-3.5 mm long, ovate or almost spherical, up to 4 mm long, smooth, 1-2 seeded; seeds about 4 mm long, light or dark brown, irregularly round heart-shaped in outline, slightly rough</p>	

The first group includes the following species that are parasitic on cultivated plants and common in oases:

- 1) *Cuscuta apporoximata* Babing is common in alfalfa fields;
- 2) field weevil (*C.campestris* Tuncker) parasitises alfalfa, vegetables and rice crops;
- 3) single-stemmed cypress (*C.monogyna* Wahl.)
- 4) Leman's thorn (*C. lemanniana* Bge.).

The last two species, the thick-stemmed weevil, are said to be parasitic on shrubs, trees, and vines, causing great damage.

The second group includes those found in wild plants and especially in areas occupied by different crops, oases and outside them, in the lands close to the mountains: 5) *C. babylonica* Auch., 6) *C. inrlica* (Engelra.) v. Petr.). 7) *C. stenocaticina* Palib 8) *S. Kotschyana* Boiss. 9) *C. brevistyla* A.Br. 10) *C. pedicellata* Lab. introduced species.

In the third group, the species of sarpechak, which entered Turkmenistan through seeds and seedlings, were identified in wild and cultivated plants and were not found elsewhere: 11) *C. suaveolens* Ser. 12) *C.chinensis* Larn. brought types[2; 35-p].

In the conditions of Tashkent region, according to the results of the experiment, it was found that mainly 7 types of seeds cause damage.

The species have been identified and elucidated, and now our task is to determine the distribution of the species and whether they can act on the host plant, that is, on one or more species of plant. According to the data of Table 2, it was found that *C. chinensis*, *C. epilinum* and *C. campestris* species are the most common species of sorghum parasitizing in the territory of Tashkent region.



According to our research, it was found that *C.chinensis*, *C.epilinum*, and *C.campestris* species of sorghum, determined by their parasitism, parasitise most of the linseed and linseed crops.

References:

1. Methods of conducting field experiments - Tashkent, 2007. 147 p.
2. Dospehov B.A. "Metodika polevogo opyta", Moscow. "Kolos" - 1985. - S. 415-418.
3. Turdieva N. and others Biological Efficiency Of Herbicide (Elymis) Against Weeds In Crops Corn. International Journal of Engineering and Information Systems (IJEAIS) ISSN: 2643-640X Vol. 5 Issue 3, March - 2021, Pages: 179-182.