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Types And Classification of The Most Common Weeds Found In Unused (Dry) Lands

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Abstract: Weeds have a high seed germination capacity and develop more rapidly than cultivated crops. Once established, weeds compete with crops for soil moisture and nutrients and create shading, thereby suppressing the growth of the main crop. In addition, weeds growing along irrigation ditches, roadsides, and field margins serve as primary reservoirs for the overwintering, reproduction, and development of agricultural pests and diseases.

Keywords: Dry Lands, Weeds, Annual, Perennial, Monocotyledonous, Dicotyledonous, Height, Seed

Introduction

One of the main preconditions to achieve high yields in agricultural crops is a well-structured and timely masterful conduct of treatments for controlling weeds. Weeds not only decrease the yield of all crops in agriculture but also worsen product quality and cause many obstacles in field working, demanding further mechanical labor and finance for weeding activity. Annual dicotyledonous weeds that infest crop fields are interference to soil tillage; cotton growth is limited and mechanical harvesting made difficult by such species as lamb's quarters and black nightshade.

Weed management is one of the important components in crop production under any farming system. Correct identification of the weeds, knowledge on their life cycles, reproduction and spreading modalities, seed dormancy as well as the critical weed interference period in various crops are some of the key information for sustainable management of weeds.

Currently, there are several weed control methods. In cultivated fields, the emphasis should be on employing efficient control strategies for reducing weed density and damage. When based on the ETD, complete control is seldom economically feasible. In agroecosystems, five principal strategies for controlling weeds are commonly employed: cultural, mechanical, biological, chemical and integrated weed management (IWM); these methods will be briefly discussed in the following sections [1].

Herbicides enter weeds through the foliage and stem and restrict the action of an enzyme called acetolactate synthase (ALS), which is crucial for growth in the weed. Herbicides are more quickly and effectively absorbed by the leaves when excessive moisture is present in the soil. An early sign of herbicide activity is the lack of weed growth 2–3 h after treatment. Later, weeds are less successful in competing for water, air, nutrients and sunlight with agricultural crops; their leaves turn yellow and within a period of 2–3 weeks they wilt to death. These changes are also noticeable after 10–15 days following the treatment [2].

Herbicide-free weed control necessitates the combination of different methods and alternative approaches to weed management. Better knowledge on the interaction between cropping systems and weed communities, how to avoid weed establishment and keep a low seed bank is required in order to succeed in organic weed management. One of the important social aspects in organic farming for weed control is group collaboration between the fields (the well-planned sequence of crops and dates, growing cover crops, overall sanitation measures or row spacing) and time for pest management. Early season weeds can be eradicated with frequent and timely shallow cultivation or thermal control (flaming). After establishment, most crops are faster growing such that they develop a dense canopy which can inhibit weed growth [3].

Research Methods

Herbarium method. Whole plants or samples were collected, dried and preserved as herbarium specimens.

Comparative–morphological method. Diagnostic features were compared with identification manuals (determinants), e.g., Flora Uzbekistana, Opredelitel sornykh rasteniy.

Use of taxonomic keys. Floral formulae and fruit types, as well as leaf arrangement and the root system were characteristics used for species identification.

Method for studying weed morphology. The physical structure of the surface of weeds was observed and described.

Main morphological characteristics included:

- Root: taproot, fibrous, rhizomatous;
- Stem: erect, decumbent, branching.
- Foliage: form, margins, venation, alternate or opposite leaf arrangement;
- 10/05pp80): — Flowers bisexual, or unisexual; inflorescence simple to compound;
- Fruit and seed: type of fruit (caryopsis, capsule, achene), seeds per fruit and seeded etc.

Techniques included: visual inspection; the use of a hand lense or microscope; photography; and illustrations.

Life cycle and ecology studies.

Biological indicators included:

- Form of life: Annually or biennial, perennial;
- Methods of reproduction: sexually and vegetatively, by seed, rhizomes or nodes;
- Phenological appearances: germination, flowering, fruiting and senescence;
- Ecological: light, humidity and soil type.

The field survey was made and a phenological calendar journal was conducted. The studies were made in experimental plots; the obtained data were recorded, compared with other species and the level of economic damage under farm conditions was determined.

Chenopodium album

Annual herb. The stem is upright or creeping, 30 to 80 cm in height. Leaves are petiolate; lower ovate–rhombiform, upper elongated-lanceolate. Fruit a somewhat compressed, globose utricle. Inflorescence short, spike-like, without leaves. A single plant yield 10,000–150,000 seeds. Seeds keep 10 years. It germinates at 5–7°C and temperatures of 17–24°C optimise this process.Flowers and sets seeds in May-July. Grows among crops. Common throughout Uzbekistan with the exception of the Republic of Karakalpakstan and Andijan region.

Chenopodium glaucum

Annual herb. Stem erect to somewhat ascending, branched, 5–75 cm high. Leaves petioled, linear-lanceolate or elliptic, occasionally ovate; apex obtuse, base cuneate; margin serrulate. Flowers

three-parted. Seeds are still viable for up to 10 years. Flowers and fruits in May-June. Grows among crops. Common in Tashkent, Samarkand and Fergana oblasts.

Amaranthus blitum

Widely distributed annual herb. Stem erect or decumbent, much-branched, bright green, 15–70 cm high. Leaves light green, small (ca 0.5 cm long), obovate. Flowers thick, in axillary inflorescences. Capsules ovate-elliptic, opening transversely. Seed width 1.2–1.5 mm. Flowers and fruit ripen in July–August. Located in all the provinces of the republic.

Atriplex tatarica

Annual herb. Stem erect, much branched, 15–40 cm tall. Leaves opposite, short-petiolate; upper face green, under mealy; margin lobed. One plant produces 130,000–600,000 seeds. Seeds red-brown, glossy, orbicular to 2.5–3 mm wide. Minimum temperature for germination 3–4°C; ideal range 18–22°C. Flowers and sets seed in June–July. It grows in fields and waste places. distributed throughout the whole of the republic."

Polygonum aviculare

Annual herb. Stem simple or procumbent; leaves broadly elliptic, lanceolate or oblong-elliptic, 10–50 cm long (plant 10–50 cm tall). Flowers 1–5 in leaf axils. Seeds ovate or round-ovate, smooth. Reproduces by seed. Each plant yields roughly 5,400 seeds. Minimum germination temperature 1–2°C; optimum 10–12°C. Seeds can partially emerge from depths of 8–10 cm. Blooms and seeds May-Oct. Soils Irrigated crops and wheat fields. Spread over the whole territory of the republic.

Artemisia annua

Annual herb. Stem erect, single, branched distally, green, 30–100 cm. Leaves ovate; lower leaves tripinnately parted, divisions 3–5 cm long. Inflorescence broad, loose panicle. Seeds brown, c. 0.5 mm long. Minimum germination temperature 2–4 °C; optimum 20–28°C. Seedlings emerge from a sowing depth of 2–3 cm. Its flowers are borne from June to August with seeding from June to September. Cultivated between crops and in orchards. It is common in all areas of the republic.

Carduus nutans

Annual herb. Stem single, straight, furrowed, winged all along; 15–60 cm high. Leaves leathery; upper surface tomentose, lower surface gray pilose. Flower heads elongated, cylindrical. Seeds obovate, longitudinal striations 5 mm long and 2 mm wide. A single plant can create as many as 12,000 seeds. Flowers and fruits May–July. Grows in foothill crop fields. Discovered in the Tashkent, Samarkand and Surkhandarya regions.

Capsella bursa-pastoris

Annual herb. Stem simple or branched, glabrous or pilose, 10–50 cm tall. Basal leaves pinnatilobate, lanceolate; stem leaves small alternate sessile. Flowers white, clustered. There is an average of around 1,200 to 73,000 seeds produced by one plant. Minimum temperature for germination 1–2 °C; optimum 15–26 °C. Seeds can germinate from a depth of up to 3 cm and are long lived in the soil (up to 5 years). Flowers & fruits in April–May. Grows in gardens and cultivated. Dispersed in all parts of the republic.

Brassica rapa

Annual herb. Stem erect, 20–100 cm tall. Lower leaves lyrate-pinnatifid. Seeds reddish-brown, oily. Pods 3–8 cm long with a beak. One plant can have as many as 20,000 seeds. Minimum germination temperature 3–4 °C, seeds germinate at depth of 4–5 cm. Flowers and fruits April–June. But grows in vegetable and melon Crops. To be met with in all parts of the republic.

Brassica elongata

Annual herb. Stem upright, at the top glabrous and branching, 20–100 cm high. Lower leaves lyrat-pinnatifid, not auriculate-clasping at base. Flowers yellow, arranged in racemes. Seeds dark brown to black. Pods 2.5–5 cm long, beaked, narrow. Each plant can yield some 20,000 seeds. Minimum temperature for germination 3–4°C; optimum 20–24°C. Seeds germinate from a depth of 4–5 cm. Flowers and fruits April–June. Grows among crops. Discovered in Republic of Karakalpakstan, Tashkent, Khorezm, Samarkand and Jizzakh regions.

Raphanus raphanistrum

Annual herb. Stem angular-branched, hispidulose; to 60 cm high. Leaves short, parted into spreading lobes. Reproduces by seed. Flowers pale yellow. Flowers and produces seed May-June. Takes over in fallows and on irrigated crops. The same exists in every part of the republic.

Galium aparine

Annual herb. Stem four-angled, dichotomously branched; nodes swollen; 30–100 cm tall. Leaves in whorls, 7–25 mm long, 1–3.5 mm wide, linear-lanceolate. Leaf whorls 6 per node, flat, 2.5–6 cm long, 3–6 mm wide. Flowers in loose umbel-like clusters. Blooming & Setting Seed Blooms and sets seed from May–July. Grows mostly among irrigated crops. Is distributed in Tashkent, Fergana, Andijan, Samarkand, Jizzakh and Bukhara regions.

Hibiscus trionum

Annual herb. Stem erect, branched 15–60 cm high. Leaves pinnately lobed, elongated. Flowers solitary on long peduncles. Seeds dark brown, kidney-shaped, small. One plant produces ~15,000 seeds. Minimum germination temperature 5–6°C; from depth of 6–8 cm. Seeds are good for up to fifty years. Flowers & fruits Jun.-Sept. It primarily grows in cotton and secondarily in melon cultures. Distributed throughout the republic.

Tribulus terrestris

Annual herb. Stem slender, subscandent, much branched, ± glabrous, 10–60 cm. Leaves linear, ~10 mm long. Flowers yellow, mostly 1 –2 per that. Fruit ± globose, 10–15 mm diam., laterals prickly. Flowers and fruits in May–Aug. It grows in oases and spring crops. Met with in all parts of the republic.

Physalis alkekengi

Perennial herb. Stems erect,angular-ribbed,30–60 cm high or tall. Leaves ovate to elongated-ovate. Fruit red–yellow, diameter 13 mm. Seeds yellow, kidney-shaped. Flowers and fruits May–Aug. Cultivated in gardens and fields. Distributed in Tashkent region.

Xanthium spinosum

Annual herb. Mostly monoecious. Stem basally branching, 20–60 cm tall. Leaves peltate- 3–5 lobed, with a wedge shape, basal side white-hairy; upper side green or hairy. One plant produces ~53,000 seeds. Germination minimum temperature 14–16°C; optimum 20–24°C. Seeds germinate from a depth of 3–4 cm. Flowers and fruits May–Sept. Grows among crops. Discovered in the Tashkent and Samarkand region.

Rumex acetosa

Annual herb. Stem abbreviated, rhizomatous, 0.5 cm long. Stem single, straight, 3–5 cm long, striate or grooved and glabrous. Inflorescence panicle-like. Flowers sometimes dioecious, mostly biennial, but often annual. Nutlets dark reddish, shiny, triangular, 1.5–3 mm long, 1–1.5 mm wide. Flowers in May–Jun, seeds ripen Jun–Aug. Grows around crop fields. Distributed in Namangan, Fergana, Sirdarya, Samarkand, Tashkent, Jizzakh and Bukhara regions.

Perennial

Convolvulus arvensis

Perennial herb. Stems are typically twining on other plants, 30–100 cm long. Leaves rolled, abaxially pubescent; base attenuate. Flowers large, white–pink. Calyx smooth, bisexual, ovate or rounded. One plant produces ~98,000 seeds. Minimum germination temperature 4–6°C; optimum 18–24°C. Seedling may emerge from up to 10–15 cm below ground level. Seed viability up to 5 years. Blooms and seeds May-Oct. Grows mostly among crops. Discovered in Tashkent, Fergana, Samarkand, Jizzakh, Andijan and Surkhandarya provinces.

Plantago major

Perennial herb. Stemless, entirely covered with leaves. Leaf blade ovate to rounded, base rounded or attenuate, margin entire. Inflorescences seed heads Mily grass are in Cone shape form and bisexual with 8–30 seeds per spike. A single plant can produce 60,000 seeds. Minimum germination temperature 6–8Â°C; optimum is 26â€“28Â°C. Seeds emerge from a planting depth of 2â€“3 cm. Blooms and produces seed July–October. Cultivated among the irrigated fields and gardens. Occurs in Republic of Karakalpakstan, Tashkent, Andijan, Jizzakh and Samarkand regions and the Fergana, Bukhara and Surkhandarya provinces.

Mentha asiatica

Perennial herb. Stem erect, stout, gray-tomentose; branches 80–100 cm long. Leaves linear-lanceolate, pubescent, base rounded or slightly cordate. Flowers slender, on thick woolly peduncles. Flowers and fruits June–September. It grows in damp soils and in crops. Recorded in the Tashkent, Andijan (Andizhan), Samarkand, Fergana (Farganon), Bukhara and Jizzakh regions.

Sirsium chrolepidium

Perennial herb. Rhizomatous. Stem erect, reddish, very branched; 40–100 cm high. Leaves spiny, green, pubescent, quarterscrolled or ovate. Inflorescences bisexual; female heads 12–15 mm diam. Rhizomes reach 2–3 m depth. One plant produces ~40,000 seeds. Flowers June–July; seeds ripen August–September. It grows in cereal and garden crops, etc. Discovered in the Tashkent, Samarkand, Jizzakh, Sirdarya and Surkhandarya areas.

Lactuca serriola

Biennial herb. Stem erect, apically branched, white-glossy, basally spiny, 60–100 cm. Leaves glaucous, ovate, amplexicaul. Inflorescences loose, yellow. Blossoms: May – Aug.; seeds from flowers. It can be found in oasis, irrigated desert agricultural crops, and wasteland. It is found all over the republic.

Alhagi pseudalhagi

Perennial herb. Stem spiny and rhizomatous; branches smooth, 50–130 cm long, with coriaceous leaves. Lower spines rigid, 7–15 mm long, 1–1.5 thick. Pods glabrous, twisting, dehiscing by 4–7 seeds. Root system to 10 m. Flowers prickly, red or purple, in 3–8 per cluster. Blooms and sets seed May–September. It grows amidst cultivated crops, fallow lands, banks of roads and canals. Envisioned in all parts of the republic.

Capparis spinosa

Perennial herb. Stems prostrate, 10–25 cm long. Leaves round. Flowers white or whitish-pink. Fruit reddish. Flowers and seeds May – June. It usually blooms in fields and fallow lands. It is to be found in all parts of the republic.

Conclusion

For each field, there was a particular weed management system. The proposal methods take agrotechnical and chemical measures, seed purity, quarantine regulations into account. The most important agrotechnical treatment is deep (30–40 cm) plowing with double mouldboard plows, when weed seeds and fragments of rhizomes are buried deeply enough to prevent germination. The soil is then plowed to a depth of several inches with disc or harrow plows, and the rhizomes of weeds (e.g., reeds, bindweed, milkweed) are combed and removed. Early spring harrowing gets rid of weed shoots. Selective herbicides were applied for chemical control of annual, biennial, and perennial broadleaf weeds.

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