NAPPO
ORGANISATION NORD-AMERICAINE POUR LA PROTECTION DES PLANTES
NORTH AMERICAN PLANT PROTECTION ORGANIZATION
ORGANIZACION NORTEAMERICANA DE PROTECCION A LAS PLANTAS

PEST FACT SHEET

Asclepias syriaca L.

A member of the Asclepiadaceae (milkweed family) and a perennial, native eastern North American plant with creeping underground rootstocks, *Asclepias syriaca*, develops weedy populations that occur in great abundance in southern Ontario and Quebec and is one of about a dozen species of *Asclepias* found in Canada and 93 species found in the US. Associated with plants of roadsides, river basins and waste places, this weed has more recently spread into cultivated lands, especially cereals, row crops and forage crops. While at least 13 other species of the genus *Asclepias* occur in Mexico, there are no records of *A. syriaca*.

Preferred Scientific Name *Asclepias syriaca* L.

Other Scientific Names *Asclepias cornuti* DECNE.
Asclepias intermedia Vail
Asclepias kansana Vail
Asclepias syriaca L. var. *kansana* (Vail) Palmer & Steyermark

Common Names English - common milkweed, milkweed, silky milkweed, silkweed, cotton weed, wild cotton
French - asclepiade, asclepiade de Syrie, cotonnier, petit-cochon
Spanish - asclepia, vencetosigo comun
Germany - Gehoernte Seidenpflanze
Netherlands - zijdeplant

Habitat

Generally found in pastures, grainfields, cultivated fields, fence rows and waste places (Frankton and Mulligan 1987), this weed has also been reported to colonize a variety of communities ranging from woodlands to cleared grasslands and marshlands (Groh and Dore 1945). Common in Ontario, especially in the Manitoulin Islands and the east-central portions of southern Ontario, it seems to be increasing in most other portions of the province as well (Alex 2001).

Woodson (1954) and Doyon (1958) both report that the habitual distribution of this plant is limited by 18 and 32 °C mean July temperatures in the north and south respectively and growth is dependant on adequate levels of rainfall in the three summer months. Excessive moisture may be inhibitory and best sites offer warm and dry soils that benefit from good exposure and drainage, the best growth rates achieved in 30% to full sun (Berkman 1949). Soils of all

textural groups will support healthy populations of common milkweed especially if they are loamy and reasonably well drained. Likewise, this species will tolerate a wide range of soil pH from fairly alkaline (Groh 1943) in eastern Canada to acid Michigan soils (Timmons 1946) and even to soils with a pH of 4 - 5 (Spurway 1941).

Distribution List

Asia

Iraq (Holm *et al.* 1991)

Europe

Austria - present, no further details (CABI 2002)
Czechoslovakia (former) (CABI 2002)
Former Yugoslavia (CABI 2002)
Hungary - present (CABI 2002)

North America

Canada - present, no further details (CABI 2002)
NS, PE, NK, QU, ON, MB (Crompton *et al.* 1988)
USA - present (CABI 2002)
According to the USDA Plants database (USDA NCRS 2002), the weed occurs in 38 states excluding WA, ID, WY, CA, NV, UT, CO, AZ, NM, FL., AK and HI.

Distribution Notes

Originally from eastern North America, the plant is found in southern Manitoba and all the eastern provinces(NB, PE, NS, QC, ON, MN) except Newfoundland (Frankton and Mulligan 1987). The current geographical distribution of this weed in North America is 35^{O} and 50^{O} north latitude and 60^{O} and 103^{O} west longitude (Woodson 1954, Doyon 1958), the greatest Canadian concentration found in the southern parts of Ontario and Quebec (Bhowmik and Bandeen 1976). As a matter of note, *A. syriaca* was an early introduced species from the North American continent to southern Europe (Bhowmik and Bandeen 1976).

Although accounting for 13 other species of the genus *Asclepias*, Ríos and García (1998) do not record this species (or any of the above synonyms) as occurring in Mexico.

Biology and Ecology

A. syriaca propagates by seeds and by underground rootstocks that develop adventitious buds which give rise to new individuals. Sprouting generally occurs during the first year of seedling growth but will take place anytime during the growing season if the plant or rootstock is disturbed. The parent root survives for two or more growing seasons. Perennation is achieved annually from the root buds located either on the base of the stem near the soil surface or on the lateral roots, most buds surviving winter conditions to sprout the following spring. In the northern half of its range, aerial shoots emerge in April-May with active growth following the arrival of warmer weather and with increased foliage surface-root development commences

and continues through the summer until the majority of shoots become senescent. Flowering occurs in late June - July and generally only on mature plants. Seedlings do not flower during their first year of growth (Bhowmik and Bandeen 1970).

The species is described as being highly self-fertile (Moore 1947) and is generally pollinated by wasps and bees with only about 2 % of the flowers producing mature pods. Studies by Bhowmik and Bandeen (1976) show that an average plant produces 4 - 6 pods, each with 150 - 425 seeds. Seed pods split open early in the fall (September - October in northern regions) and the mature seeds are dispersed by the wind, each carried aloft on cottony tufts of floss. Initially, mature seeds germinate poorly, requiring a year of "after-ripening before they can germinate moderately well" (Groh 1943). Short to long distance dispersal is accomplished by seeds but common milkweed also has the capability to multiply vegetatively. Within a period of 18 - 21 days after emergence, seedlings produce buds on the main root close to the ground surface (Bhowmik and Bandeen 1970) and studies by Evetts and Burnside (1972) demonstrate that up to 21% of seedlings sprout new growth from buds when the top growth is removed. Further, resprouting activity increases as seedlings become older, the parent root surviving for two or more growing seasons depending on local soil conditions and frequency of tillage.

Roots typically develop to a depth of 100 - 120 cm (Bhowmik and Bandeen 1970), developing adventitious buds which demonstrate variable levels of dormancy that increases in parallel with increasing sugar levels in rootstocks, especially in the fall (Bhowmik and Bandeen 1976).

Economic Impact

Evetts (1970) reports that losses to this weed amounted to 720 kg/ha in sorghum, *Sorghum bicolor* (L.) Moench and that yield losses continued to increase over subsequent years as the milkweed population increased. Recently a populational shift has occurred in Ontario whereby common milkweed plants have been noted on fertile, cultivated lands in contrast to the expected roadsides and waste places (Bhowmik and Bandeen1976). The authors suggest that increased use of herbicides for annual weeds has favored milkweed which is less likely to be controlled in this fashion. Seedlings thus become established and advance further onto cultivated land the following year when the overwintering roots give rise to new stems. However, Berkman (1949) emphasizes that milkweed is not a particularly good competitor in a cultivated system.

As a note of interest, populations of this plant have been considered beneficial as a source of nectar for butterflies, bees and other insects. The leaves are a food source for an entire group of tropical insects, the Danainae, including the monarch and queen butterflies. Historically, the flowers and young shoots and buds have been stewed and eaten by humans (Berkman 1949). Literature referring to the many uses of common milkweed is summarized by Whiting (1943).

Other species of milkweed have been shown to be highly toxic to livestock and circumstantial evidence suggests that *Asclepias syriaca* may also be toxic under certain circumstances (Alex 2001).

Morphology

This perennial weed exudes a white sticky juice when cut anywhere on it's entire surface and it spreads by seed and by fleshy creeping roots with adventitious buds that grow into new shoots. Stems of mature plants are simple, reaching 1 - 2 m in height, often in groups of several together. Leaves are opposite, oblong and entire, 5 - 10 (rarely 13) cm in width, hairy below and almost without hairs above. Flowers form in spherical clusters at the top of the stem and in the axils of the upper leaves. Each flower (appearing from mid-June to August), borne on a weak stalk is showy (an unusual arrangement of 5 hoods and horns forming a crown or corona (Alex 2001)), purplish (rarely white), fragrant with only a small percentage developing into fruits. The seed pod or fruit (7 - 10 cm long and 2 - 3 cm broad), becoming conspicuous in August and September (maturing from August to October), is grey, hairy and covered with soft projections, splitting along one side to reveal many flat oval seeds, each 7 - 8 mm long and connected to a tuft of long silky hairs.

Control

Cultural Control

Unless performed regularly and over an extended period of time, removal of stalks by cutting or by other methods can exacerbate an infestation by common milkweed by stimulating regrowth from buds on underground rootstocks. Likewise, cultivation can also induce the creation of a large colony of plants when underground rootstocks are chopped into smaller fragments and each piece can produce a new plant.

Chemical Control

Various combinations and formulations of herbicides including 2,4-D, mecoprop, dicamba and MCPA will destroy parts or all of the plant tops but such management generally leads to vigorous growth of adventitious root buds although applications of amitrole-T and glyphosate will kill the entire top growth with limited regrowth the following season (Bandeen 1971, Evetts and Burnside 1972). Overall, glyphosate appears to be the most effective control for common milkweed (Bhowmik and Bandeen 1976).

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[1] Although many references were reviewed for this Pest Fact Sheet, the primary basis for it's construction has been modeled upon a "partial datasheet" as provided by CABI (2002) and referenced below.

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