

Key Words: High Risk, Naturalized, Agricultural Weed, Toxic Herb, Unpalatable

**Family:** *Papaveraceae*

**Taxon:** *Argemone mexicana*

**Synonym:** *Argemone ochroleuca* Sweet  
*Argemone subfusiformis* G.B. Ownbey

**Common Name:** Mexican poppy  
Mexican prickly poppy  
Yellow-flower Mexican poppy

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation:	H(HPWRA)
Status:	Assessor Approved	Data Entry Person:	Chuck Chimera	<b>WRA Score 22</b>	
101	Is the species highly domesticated?		y=-3, n=0		n
102	Has the species become naturalized where grown?		y=1, n=-1		
103	Does the species have weedy races?		y=1, n=-1		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"		(0-low; 1-intermediate; 2-high) (See Appendix 2)		High
202	Quality of climate match data		(0-low; 1-intermediate; 2-high) (See Appendix 2)		High
203	Broad climate suitability (environmental versatility)		y=1, n=0		y
204	Native or naturalized in regions with tropical or subtropical climates		y=1, n=0		y
205	Does the species have a history of repeated introductions outside its natural range?		y=-2, ?=-1, n=0		y
301	Naturalized beyond native range		y = 1*multiplier (see Appendix 2), n= question 205		y
302	Garden/amenity/disturbance weed		n=0, y = 1*multiplier (see Appendix 2)		
303	Agricultural/forestry/horticultural weed		n=0, y = 2*multiplier (see Appendix 2)		y
304	Environmental weed		n=0, y = 2*multiplier (see Appendix 2)		
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)		y
401	Produces spines, thorns or burrs		y=1, n=0		y
402	Allelopathic		y=1, n=0		
403	Parasitic		y=1, n=0		n
404	Unpalatable to grazing animals		y=1, n=-1		y
405	Toxic to animals		y=1, n=0		y
406	Host for recognized pests and pathogens		y=1, n=0		
407	Causes allergies or is otherwise toxic to humans		y=1, n=0		y
408	Creates a fire hazard in natural ecosystems		y=1, n=0		n
409	Is a shade tolerant plant at some stage of its life cycle		y=1, n=0		n
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		y=1, n=0		y

411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	y
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally	y=1, n=-1	y
604	Self-compatible or apomictic	y=1, n=-1	y
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	1
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	y
702	Propagules dispersed intentionally by people	y=1, n=-1	
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	y
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	y=1, n=-1	y
706	Propagules bird dispersed	y=1, n=-1	
707	Propagules dispersed by other animals (externally)	y=1, n=-1	y
708	Propagules survive passage through the gut	y=1, n=-1	
801	Prolific seed production (>1000/m2)	y=1, n=-1	y
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	y
803	Well controlled by herbicides	y=-1, n=1	y
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	n
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: H(HPWRA)

WRA Score 22

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**Supporting Data:**

101	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Is the species highly domesticated? No] No evidence
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Species suited to tropical or subtropical climate(s) 2-High] "It is native to tropical America and is now pantropical."
201	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Species suited to tropical or subtropical climate(s) 2-High] "Native to the West Indies and Mexico; in Hawaii naturalized in dry, disturbed habitats on Kauai, Oahu, and Maui."
202	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Quality of climate match data 2-High]
203	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Broad climate suitability (environmental versatility)? Yes] "Adapted to a very wide range of habitats. In Mauritius it is most plentiful in the subhumid regions, whereas in Puerto Rico it is most prevalent in the semiarid northern regions. Though often seen at sea level, it is a weed at an elevation of 2,900 m in Tanzania." [Elevation range exceeds 1000 m, demonstrating environmental versatility]
204	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Native to the West Indies and Mexico; in Hawaii naturalized in dry, disturbed habitats on Kauai, Oahu, and Maui."
205	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Does the species have a history of repeated introductions outside its natural range? Yes] "It is a weed of 15 different crops in 30 countries."
301	1981. Smith, A.C.. Flora Vitiensis Nova - A New Flora of Fiji (Spermatophytes Only). Volume 2. Pacific Tropical Botanical Garden, Lawai, HI	[Naturalized beyond native range? Yes] "occasionally naturalized as a weed in sandy soil and in cane fields near sea level" [Fiji]
301	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Naturalized beyond native range? Yes] "Native to the West Indies and Mexico; in Hawaii naturalized in dry, disturbed habitats on Kauai, Oahu, and Maui."
301	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Naturalized beyond native range? Yes] "The native of Mexico is naturalised in most warm countries of the world, occurring as a serious weed of various crops in Argentina, Australia, India, Madagascar, Morocco, Nicaragua, Pakistan, the Philippines, Puerto Rico, South Africa and Tanzania."
301	2007. Wysong, M./Hughes, G./Wood, K.R.. New Hawaiian plant records for the island of Moloka'i. Bishop Museum Occasional Papers. 96: 1-8.	[Naturalized beyond native range? Yes] "Native to the West Indies and Mexico, <i>A. mexicana</i> (Mexican poppy), was cultivated as early as 1934 (Caum s.n., BISH 61360). In Hawai'i it is previously documented from dry, disturbed habitats on Kaua'i, O'ahu, and Maui (Wagner et al. 1999). On Kalaupapa peninsula it is considered a priority incipient weed and has been found near the dump, the slaughterhouse, and on the side of Damien Road, near the old bakery. Material examined. MOLOKA'I: Kalaupapa peninsula, near the slaughterhouse in open maintained grass field, small population found, all plants hand-pulled, 15 m, 1 Apr 2004, B. Garnett s.n. (BISH 718652)"
302	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Garden/amenity/disturbance weed? A disturbance-adapted weed with impacts to agriculture] "Seedlings do not establish in the presence of perennials and cannot compete with established pastures." ... "Mexican poppy persists only until perennial species become established and then gradually disappears."
303	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Agricultural/forestry/horticultural weed? Yes] "It is a weed of 15 different crops in 30 countries." ... "A. mexicana is a principal weed of beans and corn in Tanzania, cereal in Australia and India, cotton in Nicaragua, potatoes in India, tobacco in Argentina and Puerto Rico, and wheat in Pakistan. It is also a weed of beans, coffee, peanuts, and sorghum in Tanzania; sugarcane in Australia, India, Mauritius, and South Africa; corn, bean, and cereals in eastern Africa; sisal in Madagascar; tobacco in the Philippines; vegetables in India; cotton in Morocco; and wheat in India."

304	2011. BioNET-EAFRINE. Keys and Fact Sheets - Argemone mexicana (Mexican Prickly Poppy). <a href="http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Argemone_mexicana_%28Mexican_Prickly_Poppy%29.htm">http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Argemone_mexicana_%28Mexican_Prickly_Poppy%29.htm</a>	[Environmental weed? Possibly, but primarily considered an agricultural weed] "Argemone mexicana tends to grow along roadsides, in fallow and cultivated lands, riverbanks, disturbed areas, and on floodplains. It competes with and replaces native species in some cases and is also a significant crop weed."
305	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	[Congeneric weed? Possibly Yes] "Argemone ochroleuca" ... "When invasive, it forms large and dense populations that affect wildlife movement and crowd out native vegetation."
305	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. <a href="http://www.hear.org/gcw/">http://www.hear.org/gcw/</a>	[Congeneric weed? Yes] Several Argemone species are listed as agricultural weeds
305	2008. Schmelzer, G.H./Gurib-Fakim, A. (Eds.). Plant Resources of Tropical Africa 11(1). Medicinal Plants 1.. PROTA Foundation, Wageningen, Netherlands	[Congeneric weed? Possibly Yes] "Some authors consider Argemone ochroleuca Sweet a distinct species that can be distinguished by paler petals, thicker leaves and narrower fruits. However, it is widely accepted that it is the tetraploid form (or sometimes triploid form of Argemone mexicana.)"
401	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Produces spines, thorns or burrs? Yes] "Annual herbs; stems 2.5-10 dm long, branched, sparsely to moderately covered with prickles. Leaves glaucous, oblong oblanceolate, pinnately lobed, 1/2-3/4 to midrib, both surfaces sparsely covered with prickles along veins, margins somewhat sinuate-dentate, the teeth tipped with a prickle, sessile, upper ones usually somewhat clasping the stem." ... "Capsules oblong to broadly ellipsoid, 3-4.2 cm long, each valve with 9-15 prickles, the longest one 7-10 mm long."
402	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Allelopathic? Possibly Yes] "Aqueous leachates from all parts of the plant inhibit germination of several crop seeds, including wheat, sorghum and finger millet. The germination inhibitors have been identified as phenolic derivatives of benzoic and cinnamic acids, both of which have been found at concentrations of 0.2 and 0.3 mg per 100 grams of dry soil in the surface of 1 cm soil under natural stands of Mexican poppy. The inhibitory processes, however, are short lived; in experiments, the addition of dried Mexican poppy to the soil inhibited growth of wheat seedlings for the first 10 days and then, after 20 days growth, promoted their development."
402	2011. BioNET-EAFRINE. Keys and Fact Sheets - Argemone mexicana (Mexican Prickly Poppy). <a href="http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Argemone_mexicana_%28Mexican_Prickly_Poppy%29.htm">http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Argemone_mexicana_%28Mexican_Prickly_Poppy%29.htm</a>	[Allelopathic? Possibly Yes] "Harmful allelopathic effects of A. mexicana are recorded on germination and seedling vigour of wheat, mustard, fenugreek, sorghum, finger millet, tomato, cucumber etc. (Moore 1990). The allelochemicals cinnamic and benzoic acid are identified as harmful chemicals responsible for inhibition of germination and seedling vigour."
403	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Parasitic? No] "Annual herbs; stems 2.5-10 dm long, branched, sparsely to moderately covered with prickles." [Papaveraceae]
404	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Unpalatable to grazing animals? Yes] "In some grazing areas the plants are selectively avoided, so that not many deaths occur among large animals. It is reported that sheep will die of starvation rather than eat green plants of this species."
404	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Unpalatable to grazing animals? Yes] "Grazing animals, however, tend to avoid Mexican poppy in the field and are more likely to be poisoned when dried plants occur as contaminants in hay and chaff."
405	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Toxic to animals? Yes] "It is not an aggressive competitor of cultivated crops but has long been recognized as a plant which is highly toxic to poultry, sheep, cattle, horses, and to human beings as well."
405	1997. Nellis, D.W.. Poisonous plants and animals of Florida and the Caribbean. Pineapple Press Inc., Sarasota, FL	[Toxic to animals? Yes] "Livestock have been poisoned by the inclusion of this plant in hay, but the far more common route of intoxication is the seed's being included as a contaminant of other grains. The seed is common as an adulterant in locally produced mustard seed intended for use as a spice in less-developed parts of the world."
406	2008. Schmelzer, G.H./Gurib-Fakim, A. (Eds.). Plant Resources of Tropical Africa 11(1). Medicinal Plants 1.. PROTA Foundation, Wageningen, Netherlands	[Host for recognized pests and pathogens? Possibly] "Diseases and pests. In some areas, Argemone mexicana is attacked by leafspot caused by Xanthomonas campestris pv. papavericola. Argemone mexicana is a host of collar rot (Aspergillus niger), the reniform nematode (Rotylenchulus reniformis) and the tobacco budworm (Helicoverpa assulta)."
407	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Causes allergies or is otherwise toxic to humans? Yes] "It is not an aggressive competitor of cultivated crops but has long been recognized as a plant which is highly toxic to poultry, sheep, cattle, horses, and to human beings as well."

407	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Causes allergies or is otherwise toxic to humans? Yes] "It is more widely known in Australia because of its suspected toxicity to animals and man, although reported cases of poisoning are rare." ... "All parts of the plant, including seed are toxic."
408	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Creates a fire hazard in natural ecosystems? No] No evidence
408	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Creates a fire hazard in natural ecosystems? No] No evidence
409	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Is a shade tolerant plant at some stage of its life cycle? No] "Seedlings do not establish in the presence of perennials and cannot compete with established pastures." ... "Mexican poppy persists only until perennial species become established and then gradually disappears."
410	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Tolerates a wide range of soil conditions? Yes] "It is found on many soil types, on cultivated ground, in pastures, in fence rows, on stony ridges, along roads, in waste places, and on bare soil. "
411	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Climbing or smothering growth habit? No] "Annual herbs; stems 2.5-10 dm long, branched, sparsely to moderately covered with prickles."
412	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Forms dense thickets? Yes] "Much of the seed crop falls near the parent plant, sometimes resulting in almost pure stands along roadsides and in waste places."
501	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Aquatic? No] "Annual herbs; stems 2.5-10 dm long, branched, sparsely to moderately covered with prickles." [Terrestrial]
502	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Grass? No] Papaveraceae
503	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Nitrogen fixing woody plant? No] Papaveraceae
504	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Annual herbs; stems 2.5-10 dm long, branched, sparsely to moderately covered with prickles. Leaves glaucous, oblong oblanceolate, pinnately lobed, 1/2-3/4 to midrib, both surfaces sparsely covered with prickles along veins, margins somewhat sinuate-dentate, the teeth tipped with a prickle, sessile, upper ones usually somewhat clasping the stem."
601	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Evidence of substantial reproductive failure in native habitat? No] No evidence
602	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Produces viable seed? Yes] "The species is propagated by seeds, and the physiology of seed production and germination in the field varies throughout the world."
603	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Hybridizes naturally? Yes] "A spontaneous hybrid between <i>A. glauca</i> and <i>A. mexicana</i> was collected at upper Paia, East Maui (Hobby 1770, BISH); it did not produce seed."
604	2008. Schmelzer, G.H./Gurib-Fakim, A. (Eds.). Plant Resources of Tropical Africa 11(1). Medicinal Plants 1.. PROTA Foundation, Wageningen, Netherlands	[Self-compatible or apomictic? Yes] "Argemone mexicana is predominantly self-pollinated."
605	1993. Kubitzki, K./Rohwer, J.G./Bittrich, V. (eds.). The Families and genera of vascular plants. Volume II. Springer-Verlag, Berlin, Heidelberg, New York	[Requires specialist pollinators? No] "Except for <i>Bocconia</i> and <i>Macleya</i> which with their pendulous stamens seem to be mainly wind-pollinated, all other genera seem to be mainly insect-pollinated."
605	2008. Schmelzer, G.H./Gurib-Fakim, A. (Eds.). Plant Resources of Tropical Africa 11(1). Medicinal Plants 1.. PROTA Foundation, Wageningen, Netherlands	[Requires specialist pollinators? No] "Argemone mexicana is predominantly self-pollinated."

606	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Reproduction by vegetative fragmentation? No] "The species is propagated by seeds, and the physiology of seed production and germination in the field varies throughout the world."
606	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Reproduction by vegetative fragmentation? No] "Annual herbs; stems 2.5-10 dm long, branched, sparsely to moderately covered with prickles."
607	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Minimum generative time (years)? 1] "Annual herbs; stems 2.5-10 dm long, branched, sparsely to moderately covered with prickles."
701	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Yes] "Because of their small size, some seeds are moved in surface waterflow and many in mud adhering to hooves and fur of animals, and to clothes, footwear and machinery."
702	2008. Schmelzer, G.H./Gurib-Fakim, A. (Eds.). Plant Resources of Tropical Africa 11(1). Medicinal Plants 1.. PROTA Foundation, Wageningen, Netherlands	[Propagules dispersed intentionally by people? Probably No] "Argemone mexicana is hardly cultivated and generally considered a weed."
702	2011. BioNET-EAFRINE. Keys and Fact Sheets - Argemone mexicana (Mexican Prickly Poppy). <a href="http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Argemone_mexicana_%28Mexican_Prickly_Poppy%29.htm">http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Argemone_mexicana_%28Mexican_Prickly_Poppy%29.htm</a>	[Propagules dispersed intentionally by people? Possibly, but unlikely in Hawaiian Islands] "Argemone mexicana is an ornamental plant and is sometimes used as a soil enricher for crops - after slashing. Plant extracts can be used as an insecticide and medicinal properties have been attributed to the sap and oil from the seed. However, these uses cannot compensate for this plant's overall negative impacts."
703	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Propagules likely to disperse as a produce contaminant? Yes] "It is a noxious weed in all parts of Queensland, Australia. The seed is a contaminant of alfalfa seed in Argentina."
703	1997. Nellis, D.W.. Poisonous plants and animals of Florida and the Caribbean. Pineapple Press Inc., Sarasota, FL	[Propagules likely to disperse as a produce contaminant? Yes] "Livestock have been poisoned by the inclusion of this plant in hay, but the far more common route of intoxication is the seed's being included as a contaminant of other grains. The seed is common as an adulterant in locally produced mustard seed intended for use as a spice in less-developed parts of the world."
703	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Propagules likely to disperse as a produce contaminant? Yes] "A small proportion is moved as impurities in hay and grain."
704	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Propagules adapted to wind dispersal? No] "When shed most fall close to the parent plant, subsequently resulting in a carpet of seedlings around existing plants." ... "Because of their small size, some seeds are moved in surface waterflow and many in mud adhering to hooves and fur of animals, and to clothes, footwear and machinery."
705	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Propagules water dispersed? Yes] "Because of their small size, some seeds are moved in surface waterflow and many in mud adhering to hooves and fur of animals, and to clothes, footwear and machinery."
706	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Propagules bird dispersed? Possibly] "Because of their small size, some seeds are moved in surface waterflow and many in mud adhering to hooves and fur of animals, and to clothes, footwear and machinery."
706	2011. BioNET-EAFRINE. Keys and Fact Sheets - Argemone mexicana (Mexican Prickly Poppy). <a href="http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Argemone_mexicana_%28Mexican_Prickly_Poppy%29.htm">http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Argemone_mexicana_%28Mexican_Prickly_Poppy%29.htm</a>	[Propagules bird dispersed? Possibly] "The seeds can also be dispersed by birds." [Not fleshy-fruited. Uncertain how birds would disperse seed]
707	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Propagules dispersed by other animals (externally)? Yes] "Because of their small size, some seeds are moved in surface waterflow and many in mud adhering to hooves and fur of animals, and to clothes, footwear and machinery."
708	1997. Nellis, D.W.. Poisonous plants and animals of Florida and the Caribbean. Pineapple Press Inc., Sarasota, FL	[Propagules survive passage through the gut Unknown] "Livestock have been poisoned by the inclusion of this plant in hay, but the far more common route of intoxication is the seed's being included as a contaminant of other grains."
801	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Prolific seed production (>1000/m2)? Yes] "Mexican poppy produces large numbers of black oily seeds, ranging from 4000 per plant in Dharwar, India, to more than 30,000 in Mauritius."
802	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Evidence that a persistent propagule bank is formed (>1 yr) Yes] "The seeds are dormant at harvest."

802	2008. Schmelzer, G.H./Gurib-Fakim, A. (Eds.). Plant Resources of Tropical Africa 11(1). Medicinal Plants 1.. PROTA Foundation, Wageningen, Netherlands	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "Seeds can remain dormant for many years."
803	1997. Holm, L.G.. World weeds: natural histories and distribution. John Wiley and Sons, Inc., New York, NY	[Well controlled by herbicides? Yes] "The herbicides now available can give fairly good control of seedlings if applied early in the season, but the seeds continue to germinate and those which emerge later in the season become fully developed and a problem at harvest."
803	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Well controlled by herbicides? Yes] Spotspray with ester 2,4-D, or, where clover damage could be a problem, 2,4-DB; boomspray the more extensive colonies. IN cereal crops, apply bromoxynil + MCPA at the 2- to 4-true leaf stage, or amine 2,4-D when the crop is at the 5- 6-leaf stage. Alternatively, use bromoxynil or glyphosate for pre-sowing control. Isoproturon, oxadiazon and tebutryn applied pre-emergence have given good control in a number of legume crops, especially chickpea ( <i>Cicer arietinum</i> L.). Longer term control can be obtained in industrial areas with hexazinone, karbutilate or picloram + 2,4-D."
804	2001. Parsons, W.T./Cuthbertson, E.G.. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Tolerates, or benefits from, mutilation, cultivation, or fire? No] "Since Mexican poppy is an annual, the first priority is to prevent seeding. Hand pull or grub single plants when first seen; plants which have set seed should be removed carefully so as not to scatter seeds, and burnt. Larger infestations can be controlled by a long cultivated fallow or the establishment of a vigorous perennial pasture."
805	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown] "...in Hawaii naturalized in dry, disturbed habitats on Kauai, Oahu, and Maui." [Evidence suggests natural enemies are not present]

## **Summary of Risk Traits**

### **High Risk / Undesirable Traits**

- Broad elevation range
- Widely naturalized
- Agricultural weed
- Spiny
- Unpalatable to animals
- Toxic to animals and humans
- Tolerates many soil types
- Can hybridize with *Argemone glauca*, Hawaiian poppy
- Self-compatible
- Annual life cycle
- Numerous small seeds dispersed accidentally by animals and humans, and as a contaminant of animal feed and hay
- Forms a persistent seed bank

### **Low Risk / Desirable Traits**

- Shade-intolerant
- Medicinal uses
- Herbicides provide effective control
- May be controlled with proper cultivation practices