Family: ***Asteraceae***

Taxon: ***Praxelis clematidea***

Synonym: *Eupatorium catarium Veldkamp*
Eupatorium clematideum Griseb.

Common Name: Praxelis

Questionaire : current 20090513 **Assessor:** Chuck Chimera **Designation:** H(HPWRA)
Status: Assessor Approved **Data Entry Person:** Chuck Chimera **WRA Score** 25

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)**	**y**
305	**Congeneric weed**	**n=0, y = 1*multiplier (see Appendix 2)**	**n**
401	**Produces spines, thorns or burrs**	**y=1, n=0**	**n**
402	**Allelopathic**	**y=1, n=0**	**y**
403	**Parasitic**	**y=1, n=0**	**n**
404	**Unpalatable to grazing animals**	**y=1, n=-1**	
405	**Toxic to animals**	**y=1, n=0**	
406	**Host for recognized pests and pathogens**	**y=1, n=0**	**n**
407	**Causes allergies or is otherwise toxic to humans**	**y=1, n=0**	
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**	**y**
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**	
604	**Self-compatible or apomictic**	**y=1, n=-1**	
605	**Requires specialist pollinators**	**y=-1, n=0**	**n**
606	**Reproduction by vegetative fragmentation**	**y=1, n=-1**	**y**
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**	**n**
703	**Propagules likely to disperse as a produce contaminant**	**y=1, n=-1**	**y**
704	**Propagules adapted to wind dispersal**	**y=1, n=-1**	**y**
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**	
803	**Well controlled by herbicides**	**y=-1, n=1**	
804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	**y=1, n=-1**	**y**
805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	**y=-1, n=1**	

Designation: H(HPWRA) **WRA Score** 25

Supporting Data:

101	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Is the species highly domesticated? No] No evidence
102	2011. WRA Specialist. Personal Communication.	NA
103	2011. WRA Specialist. Personal Communication.	NA
201	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Species suited to tropical or subtropical climate(s)? 2-high] "It is an annual or short-lived perennial herb native to South America. Its native range overlaps with that of Chromolaena odorata and Chromolaena squalida in southern Brazil."
202	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Quality of climate match data? 2-high] "It is an annual or short-lived perennial herb native to South America. Its native range overlaps with that of Chromolaena odorata and Chromolaena squalida in southern Brazil."
203	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Broad climate suitability (environmental versatility)? Yes] "A native of South America (southern Brazil, Venezuela, Bolivia, northern Argentina), praxelis invades a range of habitats. It is particularly suited to disturbed areas such as roadsides, railway lines and fencelines, and rapidly colonises bare earth following fire...It is a close relative of Siam weed, Chromolaena odorata, which is regarded as one of the worst weeds of the tropics. These two plants share similar characteristics (eg rapid growth and early seed production, high numbers of easily dispersed seeds, adaptability to wide range of climates and habitats)."
203	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Broad climate suitability (environmental versatility)? Yes] "P. clematidea has demonstrated greater dispersal and establishment capacity than C. odorata over a similar timeframe, and is now abundant in the region between Townsville and Mossman (latitude 16°–19.5° S), including the Atherton Tablelands. This area encompasses sites from near sea level to 800 metres elevation, and average annual rainfall 900–4000 mm. Frost resistance has been demonstrated in Hong Kong and is suggested by occurrence of plants on higher parts of the Atherton Tableland. NAQS surveys have recently recorded small infestations at remote sites in Cape York Peninsula and on Thursday and Badu islands in Torres Strait. Praxelis clematidea is rapidly approaching New Guinea from the south!"
204	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Native or naturalized in regions with tropical or subtropical climates? Yes] "It is an annual or short-lived perennial herb native to South America. Its native range overlaps with that of Chromolaena odorata and Chromolaena squalida in southern Brazil."
205	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Does the species have a history of repeated introductions outside its natural range? No] "It had not been recorded outside its native range until 1993/1994 when specimens from the Innisfail and Tully districts of north Queensland and Hong Kong were identified almost simultaneously at KEW (N. Hind pers. comm.). Ironically, although P. clematidea had probably been present at both locations for at least 10 years, correct identification was delayed because it had been mistaken for the widespread and common species Ageratum conyzoides L. and Ageratum houstonianum Mill. (Waterhouse & Corlett 1996, Waterhouse 2000). Veldkamp (1999) has published a description and ecological notes about P. clematidea (under the name Eupatorium catarium Veldk) to help draw attention to its imminent arrival in South-East Asia."
301	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Naturalized beyond native range? Yes] "Praxelis clematidea is a relatively unknown weed, which poses an imminent threat of invasion to the Malesian region. It is an annual or short-lived perennial herb native to South America. Its native range overlaps with that of Chromolaena odorata and Chromolaena squalida in southern Brazil. It had not been recorded outside its native range until 1993/1994 when specimens from the Innisfail and Tully districts of north Queensland and Hong Kong were identified almost simultaneously at KEW (N. Hind pers. comm.). Ironically, although P. clematidea had probably been present at both locations for at least 10 years, correct identification was delayed because it had been mistaken for the widespread and common species Ageratum conyzoides L. and Ageratum houstonianum Mill. (Waterhouse & Corlett 1996, Waterhouse 2000). Veldkamp (1999) has published a description and ecological notes about P. clematidea (under the name Eupatorium catarium Veldk) to help draw attention to its imminent arrival in South-East Asia."

301	2006. Wang, Zhenhui/An, Feng/Chen, Qiubo. Praxelis (Praxelis clematidea): a New Invasive Exotic Weed in China. Chinese Journal of Tropical Agriculture. 06: .	[Naturalized beyond native range? Yes] "Invasive species pose a serious threat to introduced ecosystems and their biodiversity, and cause considerable economic loss to the regions they invaded. Praxelis (Praxelis clematidea (Grisebach) King et Robinson)(Compositae), an annual or short lived perennial herb native to South America, already became a noxious weed in Asia and Oceania. And it is spreading rapidly in Southern China now. This species was described and reviewed briefly in relation to biological characteristic, dispersal, hazard, research advances and some strategies in management and control. Its invasive mechanism of Praxelis is suggested to be studied as soon as possible. It is expected that this review could be helpful to prevent and control the spread of Praxelis."
302	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Garden/amenity/disturbance weed? A disturbance weed with negative impacts on agriculture and the natural environment] "An invader of both disturbed and relatively undisturbed ecosystems, praxelis could threaten, and significantly increase the costs of managing, such crops as bananas, other fruits and sugar cane. It could infest pastoral grasslands and conservation areas, particularly open eucalypt woodlands. Praxelis is easily mistaken for two species of Ageratum, less serious weeds found in similar regions."
303	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Agricultural/forestry/horticultural weed? Yes] "An invader of both disturbed and relatively undisturbed ecosystems, praxelis could threaten, and significantly increase the costs of managing, such crops as bananas, other fruits and sugar cane. It could infest pastoral grasslands and conservation areas, particularly open eucalypt woodlands. Praxelis is easily mistaken for two species of Ageratum, less serious weeds found in similar regions...Praxelis is also showing its weedy potential in Hong Kong and mainland China, where it appears set to become a significant weed of dryland agriculture. It can survive some exposure to frost and in China it grows above the frost line as an annual."
303	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Agricultural/forestry/horticultural weed? Yes] "In north Queensland, Praxelis clematidea is an abundant weed of roadsides, stream banks and pastures. It encroaches upon sugarcane plantations and other cultivated areas and is able to invade the understorey of relatively undisturbed woodlands."
304	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Environmental weed? Yes] "Praxelis is on the Alert List for Environmental Weeds, a list of 28 nonnative plants that threaten biodiversity and cause other environmental damage. Although only in the early stages of establishment, these weeds have the potential to seriously degrade Australia's ecosystems."
304	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Environmental weed? Yes] "In north Queensland, Praxelis clematidea is an abundant weed of roadsides, stream banks and pastures. It encroaches upon sugarcane plantations and other cultivated areas and is able to invade the understorey of relatively undisturbed woodlands...It now threatens much of northern Australia (including more southerly parts of Queensland and northern New South Wales), New Guinea, South-East Asia and the Pacific Islands."
305	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Congeneric weed? No] No evidence
401	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Produces spines, thorns or burrs? No] "Praxelis is an annual or short-lived perennial herb growing 0.2–1.0 m tall. Its leaves are arranged in opposite pairs along the brittle cylindrical stems, which are covered in short soft hairs. The leaves are tear-shaped or 'ovate' to diamond shaped or 'rhomboid', with a conspicuously toothed margin containing between five and eight teeth. When crushed, they emit a pungent odour similar to cat's urine."

402	2007. Guangyi, L./Zhenrong, C./Xiao, D./Long, Y./Qinfen, L.. Allelopathy of Eupatorium catarium Veldkamp to several weeds common in south China cropping system. Chinese Agricultural Science Bulletin. 05: .	[Allelopathic? Yes] "Eupatorium catarium Veldkamp, an aggressive plant, has spread throughout the agroecosystem and wilderness in Hainan and Guangdong province in the last decade and has become a serious problem in many parts of this area. Preliminary research on the Allelopathy of this species found that the aqueous extract has strong inhibition to the seed germination and seedling elongation of cabbage and radish. In present study the allelopathy of this species to five common weeds (E. odoratum L., Mimosa pudica L., Echinochloa crusgalli (L.) Beauv, Bidens pilosa L. and Abutilon theophrasti Medic) in south China was investigated to further understand its allelochemical potential and the potential used as green manure in cropping system weeds management. Two kinds of aqueous extracts, one from fresh material and another from dried material, were compared. The result indicated that two kinds of extracts both have strong inhibitive effect on five weeds. The roots of five species all showed more sensitive to the extracts than seeds. Under higher extracts density, the roots were inhibited completely. For different species, M. pudica had strongest endurance to the extracts, E. odoratum followed it. There was no significant disciplinary differences between two extracts. The results suggested that E. catarium has the potential to be used as green manure in cropping system weeds management, but enough researches need to be conducted to well use it in different systems."
403	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Parasitic? No] "Praxelis is an annual or short-lived perennial herb growing 0.2–1.0 m tall." [Asteraceae]
404	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Unpalatable to grazing animals? Unknown] "There is some evidence that it may be poisonous to stock and humans if ingested."
405	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Toxic to animals? Possibly] "There is some evidence that it may be poisonous to stock and humans if ingested."
406	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Host for recognized pests and pathogens? No] Not described as one of the current or potential negative impacts of this weed.
406	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Host for recognized pests and pathogens? No] Not described as one of the current or potential negative impacts of this weed.
407	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Causes allergies or is otherwise toxic to humans? Possibly] "There is some evidence that it may be poisonous to stock and humans if ingested."
408	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Creates a fire hazard in natural ecosystems? No] "It is particularly suited to disturbed areas such as roadsides, railway lines and fencelines, and rapidly colonises bare earth following fire." [benefits from fire, but no indication that Praxelis increases fire hazards]
409	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Is a shade tolerant plant at some stage of its life cycle? Yes] "It tolerates partial shade to full sun but does not cope well under heavy shade."
410	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Tolerates a wide range of soil conditions? Yes] "Able to survive on a range of soil types, it invades crops, grasslands and, particularly, over-grazed pastures."

411	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Climbing or smothering growth habit? No] "Praxelis is an annual or short-lived perennial herb growing 0.2–1.0 m tall."
412	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Forms dense thickets? Yes] "It can become the dominant herbaceous plant in open eucalypt woodlands, and grows vigorously along riverbanks."
412	2010. Queensland Government. Fact sheet - Pest Plant: Praxelis - Praxelis clematidea (PP113). Queensland Government, http://www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Praxelis-PP113.pdf	[Forms dense thickets? Yes] "Native to South America, praxelis spreads rapidly along roadsides, and invades pastures and native vegetation where it can form dense monospecific stands that exclude other vegetation."
501	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Aquatic? No] "Praxelis is an annual or short-lived perennial herb growing 0.2–1.0 m tall." [terrestrial]
502	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Grass? No] Asteraceae
503	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Nitrogen fixing woody plant? No] Asteraceae
504	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Praxelis is an annual or short-lived perennial herb growing 0.2–1.0 m tall. Its leaves are arranged in opposite pairs along the brittle cylindrical stems, which are covered in short soft hairs. The leaves are tear-shaped or 'ovate' to diamondshaped or 'rhomboid', with a conspicuously toothed margin containing between five and eight teeth."
601	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Evidence of substantial reproductive failure in native habitat? Probably not] No evidence
602	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Produces viable seed? Yes] "The seeds are black and about 2.5– 3.0 mm long. They bear a pale tuft of finely barbed bristles, 3–4 mm long."
603	2011. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	2011. WRA Specialist. Personal Communication.	[Self-compatible or apomictic? Unknown] Ability to set abundant seed & spread rapidly suggests Praxelis clematidea is self=compatible.
605	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Requires specialist pollinators? No] "The flowers, which are clusters of numerous (30–50) lilac or bluish coloured 'florets', are 7–10 mm long and occur in groups at the ends of stems. The florets are set into a highly conical (ie coneshaped) receptacle – this is a key distinguishing feature of this species." [Readily sets seed with no apparent pollinator limitations]
606	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Reproduction by vegetative fragmentation? Yes] "Praxelis is also capable of vegetative growth, in which roots and new plantlets form along branches in contact with the soil."
607	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Minimum generative time (years)? 1] "In these drier areas praxelis behaves more like an annual, setting seed and dying off until the next rainy season, when germination takes place. It will probably only exist in cultivated areas or along waterways in areas where annual rainfall is less than 500 mm."

607	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Minimum generative time (years)? 1] "It is an annual or short-lived perennial herb native to South America."
701	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Yes] "Praxelis spreads into new areas very quickly. Seed dispersal is aided by machinery and vehicles."
701	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Yes] "Seeds are readily spread as contaminants of vehicles, building and landscaping materials and garden mulch."
702	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Propagules dispersed intentionally by people? No] "In the Hong Kong region, Praxelis clematidea has also been recorded in neighbouring southern China and Macau and in Taiwan. (J.F. Veldkamp pers. comm.). The origin of the Hong Kong and neighbouring infestations is unknown. The most plausible explanation for the introduction of P. clematidea to north Queensland is that it was also a contaminant of pasture seeds imported from Brazil, along with Chromolaena odorata and Chromolaena squalida."
703	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Propagules likely to disperse as a produce contaminant? Probably yes] "The most plausible explanation for the introduction of P. clematidea to north Queensland is that it was also a contaminant of pasture seeds imported from Brazil, along with Chromolaena odorata and Chromolaena squalida. However, if this assumption is correct, P. clematidea has demonstrated greater dispersal and establishment capacity than C. odorata over a similar timeframe, and is now abundant in the region between Townsville and Mossman (latitude 16°–19.5° S), including the Atherton Tablelands."
704	2003. Waterhouse, B.M.. Know your enemy: recent records of potentially serious weeds in northern Australia, Papua New Guinea and Papua (Indonesia). Telopea. 10(1): 477-485.	[Propagules adapted to wind dispersal? Yes] "Air-borne seed dispersal also seems to be effective over short distances."
705	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Propagules water dispersed? No] "Praxelis mainly spreads by seeds. It can produce large numbers of seeds in as little as three or four months after germinating. The seeds possess a ‘pappus’, a tuft of barbed bristles that can help them spread by wind or water, or by attaching themselves to animal fur and feathers, clothing or machinery. Long distance dispersal is mainly attributed to seed attached to vehicles or carried as accidental contaminants of building supplies and landscaping materials."
706	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	"The seeds possess a ‘pappus’, a tuft of barbed bristles that can help them spread by wind or water, or by attaching themselves to animal fur and feathers, clothing or machinery." [may be externally dispersed by birds by adhering to feathers]
707	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Propagules dispersed by other animals (externally)? Possibly] "Praxelis mainly spreads by seeds. It can produce large numbers of seeds in as little as three or four months after germinating. The seeds possess a ‘pappus’, a tuft of barbed bristles that can help them spread by wind or water, or by attaching themselves to animal fur and feathers, clothing or machinery."
708	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Propagules survive passage through the gut? Unknown] Seeds unlikely to be ingested.
801	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Prolific seed production (>1000/m2)? Yes] "It can produce large numbers of seeds in as little as three or four months after germinating."
801	2010. Queensland Government. Fact sheet - Pest Plant: Praxelis - Praxelis clematidea (PP113). Queensland Government, http://www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Praxelis-PP113.pdf	[Prolific seed production (>1000/m2)? Yes] "Flowers are lilac-blue and form in clusters at the ends of stems. Each plant produces hundreds of small black seeds." [presumably will reach high seed densities in heavily infested areas.]

802	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] No information on seed banks
802	2010. Queensland Government. Fact sheet - Pest Plant: Praxelis - Praxelis clematidea (PP113). Queensland Government, http://www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Praxelis-PP113.pdf	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] No information on seed banks
803	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Well controlled by herbicides? Unknown] "Local authorities and landholders in northern Queensland initially believed that the weed now known to be praxelis was either a herbicide-resistant or hybrid form of A. conyzoides because it was much harder to kill with herbicides than previous experience with A. conyzoides."
803	2010. Queensland Government. Fact sheet - Pest Plant: Praxelis - Praxelis clematidea (PP113). Queensland Government, http://www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Praxelis-PP113.pdf	[Well controlled by herbicides? Unknown] "There is no herbicide currently registered for control of praxelis in Queensland; however, an off-label use permit (Permit No. 11463) allows the use of various herbicides for the control of environmental weeds in non agricultural areas, bushland, forests, wetlands, and coastal and adjacent areas...It is important to note that specific research on the use of herbicides to control praxelis has not been undertaken to date. Therefore, the treatment options outlined in Table 1 are suggestions only, based on registered controls for similar weeds in non-agricultural areas and the specifications of PER11463. As such, their effectiveness cannot be guaranteed."
804	2003. CRC Weed Management. Weed Management Guide - Praxelis- Praxelis clematidea. http://www.weeds.gov.au/publications/guidelines/alert/p-clematidea.html	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "It is particularly suited to disturbed areas such as roadsides, railway lines and fencelines, and rapidly colonises bare earth following fire." [benefits from fire, but no indication that Praxelis increases fire hazards]
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally? Unknown for Hawaii and other tropical Pacific Islands]