

Key Words: High Risk; Naturalized; Tree; Spiny; Zoochorous; Coppices

**Family:** *Fabaceae*

**Taxon:** *Acacia robusta*

**Synonym:** NA

**Common Name:** Splendid acacia  
Splendid thorn  
Ankle thorn  
Brack Thorn

**Questionnaire :** current 20090513      **Assessor:** Chuck Chimera      **Designation:** H(HPWRA)  
**Status:** Assessor Approved      **Data Entry Person:** Chuck Chimera      **WRA Score** 7

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	
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)	n
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	
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	n
405	Toxic to animals	y=1, n=0	
406	Host for recognized pests and pathogens	y=1, n=0	
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n
408	Creates a fire hazard in natural ecosystems	y=1, n=0	
409	Is a shade tolerant plant at some stage of its life cycle	y=1, n=0	
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	
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	y
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	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	n
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	y=1, n=-1	
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m2)	y=1, n=-1	
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	
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 7

## Supporting Data:

101	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Is the species highly domesticated? No] "Acacia robusta is variable, and is subdivided into 3 subspecies: subsp. Clavigera (E.Mey.) Brenan (synonym: Acacia clavigera E.Mey.), which may develop into a medium-sized tree and is characterized by its pubescent leaf rachis and curved, comparatively thin pods; subsp. robusta, which remains a small tree (up to 8 m tall) and is characterized by its glabrous leaf rachis and straight, comparatively wide pods; and subsp. usambarensis (Taub.) Brenan (synonym: Acacia usambarensis Taub.), which is characterized by its glabrous leaf rachis and very narrow pods. Intermediates between the subspecies are rather common. Acacia robusta grows comparatively fast." [No evidence]
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Species suited to tropical or subtropical climate(s) 2-High] "Acacia robusta occurs from Ethiopia and Somalia south to Namibia and northern and eastern South Africa. It has been introduced elsewhere, e.g. in South Asia."
202	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Quality of climate match data 2-High]
203	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Broad climate suitability (environmental versatility)? Yes] "Acacia robusta occurs in woodland and wooded grassland, often near rivers, where large specimens can be found, up to 1800 m altitude. The tree is drought and frost resistant." [Elevation range exceeds 1000 m, demonstrating environmental versatility]
204	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Acacia robusta occurs from Ethiopia and Somalia south to Namibia and northern and eastern South Africa. It has been introduced elsewhere, e.g. in South Asia."
301	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Naturalized beyond native range? Presumably Yes] "In Australia it is considered invasive." [Details of naturalization status unspecified]
301	2012. Lau, A.. Oahu Early Detection Botanist. Pers. Comm. 6 April 2012.	[Naturalized beyond native range? Yes. Sparingly] "spreading only very sparingly (1 individual directly next to parent and 1 other maybe 50 – 100 yds away), spreading from 4 cultivated trees"
302	2007. Randall, R.P.. Global Compendium of Weeds - Acacia robusta [Online Database]. <a href="http://www.hear.org/gcw/species/acacia_robusta/">http://www.hear.org/gcw/species/acacia_robusta/</a>	[Garden/amenity/disturbance weed? No] No evidence
303	2007. Randall, R.P.. Global Compendium of Weeds - Acacia robusta [Online Database]. <a href="http://www.hear.org/gcw/species/acacia_robusta/">http://www.hear.org/gcw/species/acacia_robusta/</a>	[Agricultural/forestry/horticultural weed? Potentially] Listed as an agricultural weed [Details and impacts unspecified]
304	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Environmental weed? Unknown] "In Australia it is considered invasive." [Impacts unspecified]
305	2011. Le Maitre, D.C./Gaertner, M./Marchante, E. et al.. Impacts of invasive Australian acacias: implications for management and restoration. Diversity and Distributions. 17: 1015–1029.	[Congeneric weed? Yes] "Australian acacias have a wide range of impacts on ecosystems that increase with time and disturbance, transform ecosystems and alter and reduce ecosystem service delivery. A shared trait is the accumulation of massive seed banks, which enables them to become dominant after disturbances. Ecosystem trajectories and recovery potential suggest that there are important thresholds in ecosystem state and resilience. When these are crossed, options for restoration are radically altered; in many cases, autogenic (self-driven and self-sustaining) recovery to a pre-invasion condition is inhibited, necessitating active intervention to restore composition and function."
401	1965. Gordon-Gray, K.D.. Acacia robusta Burch. and Acacia clavigera E. Mey. in Natal, South Africa. Brittonia. 17(3): 202-212.	[Produces spines, thorns or burrs? Yes] "Mature trees from all localities investigated often bore stipular spines no longer than 2-3 cm. It is generally only young trees, young coppice shoots of old trees, or trees growing under more arid and extreme environmental conditions that have long, stout spines. These vary greatly in length on a single tree, so that the limits which Brenan gives for the two species do not hold. Spines 10-11 cm long have been recorded for trees in every locality so far investigated"
401	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Produces spines, thorns or burrs? Yes] "Shrub or small to medium-sized tree up to 20(–25) m tall; root system moderately deep, with strongly spreading lateral roots; bole up to 70 cm in diameter; bark smooth to fissured, grey-brown to dark brown or black; crown spreading; young branches smooth, with paired, straight stipular spines up to 6(–11) cm long."

402	2012. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Parasitic? No] "Shrub or small to medium-sized tree up to 20(–25) m tall;" [Fabaceae]
404	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Unpalatable to grazing animals? No] "The foliage and pods are browsed by livestock."
404	2012. EcoTravel Africa. Guide to the tree species of Southern Africa - Acacia robusta - Brack Thorn. <a href="http://www.ecotravel.co.za/plant-kingdom/trees/acacia-robusta-brack-thorn.htm">http://www.ecotravel.co.za/plant-kingdom/trees/acacia-robusta-brack-thorn.htm</a>	[Unpalatable to grazing animals? No] "Links with animals - The leaves are browsed by kudu, while the flowers attract bees and butterflies."
405	2006. Dharani, N.. Field Guide to Acacias of East Africa. Struik Publishers, Cape Town	[Toxic to animals? Possibly] "The pods and leaves are occasionally browsed, although the pods have been suspected to cause prussic acid poisoning in livestock."
406	2007. Forest Resources Development Service. Overview of forest pests – Sudan. Working Paper FBS/31E. FAO, Rome, Italy	[Host for recognized pests and pathogens? Potentially] "Bruchidius uberatus (Fahraeus, 1839) Other scientific names: Coleoptera: Bruchidae Common names: seed beetle Host type: broadleaf Hosts: Acacia spp.; A. nilotica; A. tortilis; A. mellifera; A. burkei; A. erioloba; A. robusta Bruchidius uberatus causes similar damage to Caryedon serratus however it is primarily a pest of stored seed (El Atta and Nour, 1995). The adults lay eggs on the pods, and then the larvae bore into the seed, often completely destroying the seed and hence preventing germination. If the pods or husks are removed then there is a significant reduction in infestation by this insect. In some places Bruchidius uberatus is the primary infesting insect of Acacia nilotica. It also infests a number of other Acacia species including A. tortilis, A. mellifera, A. burkei, A. erioloba, and A. robusta." [Potential host of Bruchid beetles that could impact native Acacia koa or commercially important non-native koa species]
407	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Causes allergies or is otherwise toxic to humans? No] "The wood is occasionally used for furniture, shelves and yokes, although its use is limited because of considerable warping. It is also used as firewood and among the Mijikenda people of Kenya it is even the preferred type of firewood. The foliage and pods are browsed by livestock. In traditional medicine, root powder is applied to swellings, a root decoction is used to treat dysmenorrhoea, female sterility and schistosomiasis, a stem bark decoction to treat gonorrhoea, abdominal pains and skin ailments, and leaves to treat snakebites. Some medicinal applications of unknown plant parts have been recorded: to treat malaria and bubonic plague. Acacia robusta is occasionally grown as a bonsai plant." [Multiple uses, with no indication of allergenic properties or inadvertent poisoning]
407	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Causes allergies or is otherwise toxic to humans? No] No evidence
408	2007. Sinclair, A.R.E./Mduma, S.A.R./Hopcraft, J.G.C./Fryxell, J.M./Hilborn, R./Thirgood, S.. Long-Term Ecosystem Dynamics in the Serengeti: Lessons for Conservation. Conservation Biology. 21(3): 580–590.	[Creates a fire hazard in natural ecosystems? Unknown] "The major abiotic factors affecting the Serengeti ecosystem are fire and rainfall. Grass fires have dominated African savanna landscapes for hundreds of millennia (Bird & Cali 1998) and plants are fire tolerant. The savanna plant community is a fire disclimax that has been shaped by the frequency of burns (Frost & Robertson 1987). Although in Kruger lightning causes some 20% of fires (du Toit et al. 2003), in Serengeti fire is caused by humans; no lightning-caused fires have been recorded." [Acacia robusta is a component of a fire prone ecosystem, so may tolerate, rather than contribute, to fires]
409	2012. Dave's Garden. PlantFiles: Ankle thorn, Brack thorn - Acacia robusta. <a href="http://davesgarden.com/guides/pf/go/174769/">http://davesgarden.com/guides/pf/go/174769/</a>	[Is a shade tolerant plant at some stage of its life cycle? Possibly No] "Sun Exposure: Full Sun"
409	2012. Trees 4 Zambia. Acacia robusta (Burch.). <a href="http://trees-4-zambia.com/">http://trees-4-zambia.com/</a>	[Is a shade tolerant plant at some stage of its life cycle? Possibly] "Plant in full sun or semi shade and water regularly. It is drought resistant."
410	2012. Horticipia Inc.. Acacia robusta - Robust Acacia. <a href="http://www.horticipia.com/hortpix/html/acarob000.htm">http://www.horticipia.com/hortpix/html/acarob000.htm</a>	[Tolerates a wide range of soil conditions? Yes] "Soil pH requirements: Acidic, neutral, alkaline, slightly alkaline; Soil type:Sandy, clay, loamy"
410	2012. Trees 4 Zambia. Acacia robusta (Burch.). <a href="http://trees-4-zambia.com/">http://trees-4-zambia.com/</a>	[Tolerates a wide range of soil conditions? Yes] "Soil and Moisture: Acacia robusta occurs in a variety of soils."
411	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Climbing or smothering growth habit? No] "Shrub or small to medium-sized tree up to 20(–25) m tall;"

412	2007. Sinclair, A.R.E./Mduma, S.A.R./Hopcraft, J.G.C./Fryxell, J.M./Hilborn, R./Thirgood, S.. Long-Term Ecosystem Dynamics in the Serengeti: Lessons for Conservation. Conservation Biology. 21(3): 580–590.	[Forms dense thickets? Unknown] "Before the 1960s the woodlands of central and southern Serengeti were dominated by <i>Acacia robusta</i> Burch. (= <i>A. clavigera</i> E. Mey. ssp. <i>usambarensis</i> ) and <i>Commiphora</i> species. Nevertheless, in the 1960s and 1970s these species declined and <i>A. hockii</i> DeWild., and <i>A. senegal</i> (L.) Willd. Dominated the community (Herlocker 1976). Since the early 1980s, <i>A. robusta</i> has been regenerating and now (2000s) has regained dominance, whereas <i>Commiphora</i> is beginning to reappear." [Dominance suggests high density, but unknown if dense thickets are formed in this region]
501	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Aquatic? No] Terrestrial
502	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Grass? No] Fabaceae
503	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Nitrogen fixing woody plant? Yes] " <i>Acacia robusta</i> is nodulated by nitrogen-fixing <i>Rhizobium</i> bacteria."
504	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Shrub or small to medium-sized tree up to 20(–25) m tall; root system moderately deep, with strongly spreading lateral roots; bole up to 70 cm in diameter; bark smooth to fissured, grey-brown to dark brown or black; crown spreading; young branches smooth, with paired, straight stipular spines up to 6(–11) cm long."
601	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Evidence of substantial reproductive failure in native habitat? No] " <i>Acacia robusta</i> is widespread and locally common and not in danger of genetic erosion."
602	2007. Mduma, S.A.R./Sinclair, A.R.E./Turkington, R.. The role of rainfall and predators in determining synchrony in reproduction of savanna trees in Serengeti National Park, Tanzania. Journal of Ecology. 95: 184–196.	[Produces viable seed? Yes] " <i>Acacia robusta</i> and <i>A. kirkii</i> reproduced every 2 years and some trees produced fruits only every 4 years."
602	2012. Trees 4 Zambia. <i>Acacia robusta</i> (Burch.). <a href="http://trees-4-zambia.com/">http://trees-4-zambia.com/</a>	[Produces viable seed? Yes] "Propagation: <i>Acacia robusta</i> is relatively easy to germinate. The seed should be planted with a light sand/soil cover and watered regularly. Transplant into larger bags when several leaf have appeared."
603	1965. Gordon-Gray, K.D.. <i>Acacia robusta</i> Burch. and <i>Acacia clavigera</i> E. Mey. in Natal, South Africa. Brittonia. 17(3): 202-212.	[Hybridizes naturally? Unknown] "One other point is worthy of emphasis, namely the morphological variation from tree to tree in any locality. In every population some phenotypes produce more widely spaced pinna pairs, wider pods and often a less dense indumentum than do others. These differences are undoubtedly genotypically based. Parameters indicate that such genotypes, because of the effect of the coast-inland cline, produce narrower pods, a greater number of pinna pairs and a denser indumentum at the coast than do similar genotypes in inland situations. These genotypic differences may perhaps be traceable to an ancient hybrid origin for <i>A. robusta</i> in its widest sense."
604	1989. Kenrick, J./Knox, R. B.. Quantitative Analysis of Self-Incompatibility in Trees of Seven Species of <i>Acacia</i> . Journal of Heredity. 80(3): 240-245.	[Self-compatible or apomictic? Unknown] "Quantitative estimates of self incompatibility in individual trees of natural populations of <i>Acacia</i> species have been achieved using the index of self-incompatibility (ISI, of the ratio of infructescences or pods set after self pollination/cross-pollination). The ISI was 0 or very low for three species— <i>A. mearnsii</i> , <i>A. pycnantha</i> , and <i>A. retinodes</i> —indicating high levels of self-incompatibility. The ISI varied widely in three species— <i>A. myrtifolia</i> , <i>A. paradoxa</i> , and <i>A. terminalis</i> —indicating partial self-compatibility, and was high in one species— <i>A. ulicifolia</i> —which was self compatible. This technique allows populations with different breeding systems to be identified and characterized. We propose that full and partial self-incompatibility in this genus may arise from a gametophytic S gene system overlying recessive postzygotic lethal genes that are expressed particularly in situations in which an Sc (compatible) allele is present and inbreeding occurs." [Acacia species show a range of compatibility, but unknown for <i>A. robusta</i> ]
605	2007. Fleming, P.A./Hofmeyr, S.D./Nicolson, S.W.. Role of insects in the pollination of <i>Acacia nigrescens</i> (Fabaceae). South African Journal of Botany. 73(1): 49-55..	[Requires specialist pollinators? No] "Honeybees were more common visitors to trees close to water, although bees may in fact fly considerable distances to obtain water (for example, honeybee species have been recorded foraging 10–20 km from their nest, Beekman and Ratnieks, 2000 and Dyer and Seeley, 1991). In contrast, other bees, wasps and flies were actually more common visitors to trees far from water, and the total number of insect visitors was higher for trees away from surface water compared with those near water. It is possible that simultaneously flowering riverine species ( <i>Acacia robusta</i> Burchell, <i>Acacia xanthophloea</i> Benth., <i>Combretum hereroense</i> Schinz and <i>Combretum microphyllum</i> Klotzsch) competed for these insect pollinators."

605	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Requires specialist pollinators? No] "Flowers bisexual, regular, usually 5-merous, small, creamy white, fragrant, sessile; calyx cup-shaped, with short lobes; corolla shortly lobed, glabrous; stamens numerous, free, up to 5 mm long; ovary superior, 1-celled, style slender."
606	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Reproduction by vegetative fragmentation? No] "The germination rate of untreated seeds can be very low, often only about 3%; it is higher when the seeds have been ingested by herbivores. Mechanical scarification may improve germination to over 90%, and treatment with boiling water or sulphuric acid may enhance germination to over 80%. Bruchid species may attack the seeds, especially when these are on the ground. Therefore, seeds for propagation should be collected from the canopy and the period of storage of untreated seeds should be minimized. Trees resprout well after coppicing." [No evidence]
607	2007. Mduma, S.A.R./Sinclair, A.R.E./Turkington, R.. The role of rainfall and predators in determining synchrony in reproduction of savanna trees in Serengeti National Park, Tanzania. <i>Journal of Ecology</i> . 95: 184–196.	[Minimum generative time (years)? Unknown] "Acacia robusta and A. kirkii reproduced every 2 years and some trees produced fruits only every 4 years." [Time to maturity unknown]
607	2012. Heaven's Garden Nursery. Fast Growing Indigenous Trees. <a href="http://www.heavensgarden.co.za/Fast_growing_trees.pdf">http://www.heavensgarden.co.za/Fast_growing_trees.pdf</a>	[Minimum generative time (years)? Unknown] "Acacia robusta" ... "Growth Rate /year = 900 mm"
607	2012. Hortiopia Inc.. Acacia robusta - Robust Acacia. <a href="http://www.hortiopia.com/hortpix/html/acarob000.htm">http://www.hortiopia.com/hortpix/html/acarob000.htm</a>	[Minimum generative time (years)? Unknown] "Growth rate: Fast"
701	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No] "Fruit a linear pod 7–19 cm × 0.5–3 cm, straight or curved, more or less woody, glabrous, brown, longitudinally veined, dehiscent, up to 15-seeded. Seeds quadrangular to ellipsoid, compressed, 8–15 mm × 5–9 mm, smooth." [Unlikely, given large seed size. Fruits/seeds lack means of external attachment]
702	2012. Dave's Garden. PlantFiles: Ankle thorn, Brack thorn - Acacia robusta. <a href="http://davesgarden.com/guides/pf/go/174769/">http://davesgarden.com/guides/pf/go/174769/</a>	[Propagules dispersed intentionally by people? Yes] "Other details: Drought-tolerant; suitable for xeriscaping" [Landscaping tree]
703	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Propagules likely to disperse as a produce contaminant? No] "Fruit a linear pod 7–19 cm × 0.5–3 cm, straight or curved, more or less woody, glabrous, brown, longitudinally veined, dehiscent, up to 15-seeded. Seeds quadrangular to ellipsoid, compressed, 8–15 mm × 5–9 mm, smooth." [Unlikely, given large seed size. Fruits/seeds lack means of external attachment]
704	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Propagules adapted to wind dispersal? No] "Fruit a linear pod 7–19 cm × 0.5–3 cm, straight or curved, more or less woody, glabrous, brown, longitudinally veined, dehiscent, up to 15-seeded. Seeds quadrangular to ellipsoid, compressed, 8–15 mm × 5–9 mm, smooth."
705	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Propagules water dispersed? Possibly] "Acacia robusta occurs in woodland and wooded grassland, often near rivers, where large specimens can be found, up to 1800 m altitude."
705	2012. EcoTravel Africa. Guide to the tree species of Southern Africa - Acacia robusta - Brack Thorn. <a href="http://www.ecotravel.co.za/plant-kingdom/trees/acacia-robusta-brack-thorn.htm">http://www.ecotravel.co.za/plant-kingdom/trees/acacia-robusta-brack-thorn.htm</a>	[Propagules water dispersed? Possibly] "This tree is found on the edges of rivers and streams, and may be found further from permanent water, in higher rainfall areas."
706	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Propagules bird dispersed? No] "Fruit a linear pod 7–19 cm × 0.5–3 cm, straight or curved, more or less woody, glabrous, brown, longitudinally veined, dehiscent, up to 15-seeded. Seeds quadrangular to ellipsoid, compressed, 8–15 mm × 5–9 mm, smooth."
707	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Propagules dispersed by other animals (externally)? No] "The germination rate of untreated seeds can be very low, often only about 3%; it is higher when the seeds have been ingested by herbivores." [No evidence, and no apparent means of external attachment]
708	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of plant resources of tropical Africa. PROTA, Wageningen, Netherlands	[Propagules survive passage through the gut? Yes] "Dispersal of the seeds is probably by browsing animals." ... "The germination rate of untreated seeds can be very low, often only about 3%; it is higher when the seeds have been ingested by herbivores."



708	2011. Belayneh, A./Demissew, S.. Diversity and Population Structure of Woody Species Browsed by Elephants in Babile Elephant Sanctuary, eastern Ethiopia: an implication for conservation. <i>Ee-JRIF</i> . 3(1): 20-32.	[Propagules survive passage through the gut? Yes] "The relatively better regeneration of the top browsed trees such as <i>Acacia robusta</i> , <i>Balanites aegyptiaca</i> , <i>B. glabra</i> and <i>Acacia tortilis</i> might be attributed to the density of their mature trees, may be due to the presence of substantial amount of viable seeds in the soil and/or the wide dispersal of their seeds through ungulate faeces."
801	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. <i>Timbers 1: volume 7 of plant resources of tropical Africa</i> . PROTA, Wageningen, Netherlands	[Prolific seed production (>1000/m <sup>2</sup> )? Unknown] "Shrub or small to medium-sized tree up to 20(-25) m tall" ... "Fruit a linear pod 7-19 cm x 0.5-3 cm, straight or curved, more or less woody, glabrous, brown, longitudinally veined, dehiscent, up to 15-seeded."
802	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. <i>Timbers 1: volume 7 of plant resources of tropical Africa</i> . PROTA, Wageningen, Netherlands	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] "Mechanical scarification may improve germination to over 90%, and treatment with boiling water or sulphuric acid may enhance germination to over 80%. Bruchid species may attack the seeds, especially when these are on the ground. Therefore, seeds for propagation should be collected from the canopy and the period of storage of untreated seeds should be minimized." [Potentially, if they escape seed predators and parasitoids]
802	2012. Dave's Garden. <i>PlantFiles: Ankle thorn, Brack thorn - Acacia robusta</i> . <a href="http://davesgarden.com/guides/pf/go/174769/">http://davesgarden.com/guides/pf/go/174769/</a>	[Evidence that a persistent propagule bank is formed (>1 yr)? Presumably Yes] "Properly cleaned, seed can be successfully stored" [Hard-seeded legume whose seeds will presumably persist in the soil]
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species
804	2004. Luoga, E.J./Witkowski, E.T.F./Balkwill, K.. Regeneration by coppicing (resprouting) of miombo (African savanna) trees in relation to land use. <i>Forest Ecology and Management</i> . 189: 23-35.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Appendix A Coppicing effectiveness (mean ± S.E.) by diameter class and percentage of stumps resprouting for all harvested species (arranged in alphabetical order by species) in miombo woodlands of Kitulanhalo Forest Reserve and surrounding public lands" [ <i>Acacia robusta</i> = average resprouter]
804	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. <i>Timbers 1: volume 7 of plant resources of tropical Africa</i> . PROTA, Wageningen, Netherlands	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Trees resprout well after coppicing."
804	2012. Hean, J.W./Ward, D.. Fire and herbivory are not substitutable: evidence from regrowth patterns and changes in physical and chemical defences in <i>Acacia</i> seedlings. <i>Journal of Vegetation Science</i> . 23: 13-23.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "After simulated burning, <i>A. nilotica</i> did not show a significant increase in thorn length or abundance, but did have a significant increase in tannin content, while <i>A. robusta</i> did not exhibit any significant changes in either chemical defence or thorn length (but did have a marginal change in thorn abundance in response to herbivory). This suggests that <i>A. nilotica</i> and <i>A. robusta</i> may have a tolerance strategy (i.e. no decline in fitness due to herbivory – Strauss & Agrawal 1999; Ruiz et al. 2002, 2008), because individuals appeared to allocate most of their remaining resources into compensatory growth to adjust for biomass loss."
805	2012. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]