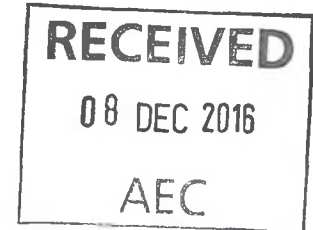


## Submission to Weed Control Enquiry

Research Director, Agriculture & Environment Committee,  
Parliament House, Brisbane Qld 4000

by

**Gary Parker**  
[REDACTED]



### Executive Summary

This submission is a response to a request by the Honourable Dale Last, MP, Member for the Burdekin and Shadow Minister for Agriculture, regarding the problem of pest weeds in Queensland.

A former farmer of 43 years, with significant experience in the design and construction of mechanical equipment, in 2011 I was made aware of the problems associated with the increasing spread of Prickly Acacia through western Queensland grazing lands. I then developed a tractor attachment to handle this problem, and following field trials significantly modified the design so that now the *Down 2 Earth* attachment successfully and readily cuts the tree at ground level, automatically injecting a shot of herbicide to ensure the tree will not re-shoot. This attachment is available in two sizes, one tractor driven for \$10,850 and the other Quad Bike driven for \$5,850. No special license or skill is required to operate the equipment.

However graziers are reluctant to implement eradication programs as they feel it is a government responsibility to do so, particularly when they have leasehold land. I believe an encouragement program similar to those used for cleaning up the reef in coastal areas is required, with subsidies available to those who make the effort.



**Down 2 Earth ready to cut Prickly Acacia**

## Detailed Submission

I tender the following submission in response to a request received by email from the Honourable Dale Last MP, Member for Burdekin and Shadow Minister for Agriculture, regarding the problem of pest weeds in Queensland.

My experience has been over recent years with the irradiation of Prickly Acacia.

My name is Gary Parker and I am a retired row crop farmer now living at 143 Bartlett Rd Giru Qld. I farmed for 43 years, originally in Ayr, then in latter years in Giru. After leaving school in 1962 I completed a motor mechanic apprenticeship, operated and maintained cane harvesters for a few years, and then commenced work on the family cane farm.

From an early age I had an interest and desire to invent and build things, with a view to increase efficiency and productivity. In the early years I built many implements for the cane farm. In 1980 I designed, built, and patented the first mango packing machinery. I had the first mango packing shed, packing for many other growers apart from our own fruit. The mango packing shed operated for 15 years. In 1996 I designed and built a six row green bean harvester. This machine was mounted on large steel tracks, and was, and still is the first and only six row green bean harvester in the world. In 2011 I was approached by a former Winton grazier who told me about a major problem that was occurring in Western Qld. He explained how this tree with 5cm thorns was taking over large areas of prime grazing country. It was Prickly Acacia. He told me how this tree was introduced into Australia as a shade tree for sheep. Apparently the sheep kept the trees under control. In more recent times the Graziers had moved from sheep to cattle, and the cattle did not have the same restricting control as the sheep.

The man from Winton explained that this prickly tree problem was out of hand and required immediate attention. Being already told by someone that I had an interest in designing and building machines, he suggested an attachment fitted behind a tractor, so that Graziers could start clearing their properties. He further explained that bulldozer type machinery had been tried, but was not successful.

Apart from the obvious expense, this type of machine disturbed the soil surface, covered the tree seeds, and when it rained there were even more trees. Plus the bulldozers left the soil surface very unlevel. This then became a problem at muster time for horse or bike. Other eradication methods have been trialled, like spraying the trunk of the tree with herbicide. This is called Basal Bark Spraying, it uses a large amount of chemical, and is very slow, and very expensive.

After much discussion and thought, I designed, built, and commissioned the "Pakmor Tree Cutter". This machine fitted to the rear of any tractor, and was powered by the power take off (PTO) of the tractor. It consisted of an adjustable frame which pushed the tree back, plus a large rotating circular saw blade which cut the tree off. The cut stump had to have a herbicide applied within 20 seconds of being cut. This application had to be a separate operation.

After demonstrating this machine many times in different locations in Western Qld. , the following comments were made by different graziers:

- The saw blade could not touch the ground so it was inevitable that after cutting there was a stump, most Graziers did not want a paddock full of stumps.
- Because the machine was mounted on the rear of the tractor, the operator had to look backwards to cut a tree. They did not like looking backwards, they got a sore neck.
- Finding labour to spray the stumps with herbicide was a problem.
- Reversing back slowly to cut the tree meant riding or slipping the clutch of the tractor. A few of these machines were sold, and over time some of the tractors have experienced clutch failure.

So back to the drawing board, the Pakmor was not the answer.

I have now designed, built, commissioned and patented a new prickly tree cutter called the "Down 2 Earth" tree cutter, with the following improvements:

- This machine has stationary blades that are designed to work in soil. So it cuts at ground level, no more stumps.
- This machine is mounted on the front of the tractor, so no more looking back.
- This machine is equipped with an automatic herbicide applicator. The herbicide is automatically applied, so no need for a second person to apply it.
- No more reversing back, this machine travels and cuts in a forward direction, at a constant speed, around 8 km per hour. No more slipping the tractor clutch. Without having to stop and reverse back to cut each tree, the number of trees cut per hour is greatly increased.

As far as Prickly Acacia is concerned this is a simple solution to its removal and eradication.

I should also mention that there are two versions of the Down 2 Earth machine. The version mentioned above is for the cutting of large trees above 5cm in diameter. There is a smaller machine that fits to the front of any quad bike, preferably 400cc or greater for cutting the trees below 5cm. Both these machines are a simple, cost effective method of destroying prickly trees. No operator skill or licence is required.

However after countless hours of discussions with many graziers in different districts, nothing is going to happen unless there is some incentive for graziers to clean up their country. One story that keeps coming up is "The Government introduced this pest, in the main part it is on land owned by the government and leased to graziers, so logically it is their responsibility to clean it up." Or "The job is too big, they should have done something about it years ago."

So what is the solution ?

I see a comparison between the Outback and Prickly Acacia, and the coastal farmers and the Reef. With the coastal farmers, nothing would have happened if there had not been a financial incentive. Unless there is a financial incentive for the farmers of the outback, Prickly Acacia will eventually consume the entire land mass.

If this pest tree is not eradicated there will not be a cattle industry in time to come. As a matter of interest, Prickly Acacia has now spread completely across the Northern Territory and is into the north west of Western Australia.

I have heard stories of Government money being handed out to people and organisations to do trial work, but so far no solution has evolved. There is no need to waste any more money on trials, there is a cost affective machine, relatively maintenance free that will do the job. What is required is incentive.

My suggestion is for Government to subsidise the machines to 50% of their cost. I believe this is the incentive that is required.

- The total cost of the tractor mounted machine is \$10,850.00
- The total cost of the bike mounted machine is \$5,850.00.

The other thing that will help is that graziers need to be advised that there are backpackers who will gladly come and operate the machines.

Submitted by:

H. G. Parker

[Redacted contact information]

**Appendix 1: Images**



**Quad bike version**



**Tree cutting jaws**



**Prickly acacia stump cut at ground level**



**Cut tree inverted, showing cut face**



**Appendix 2: Article by Colin Jackson in AgAlert, 25 October 2016**

BUSH CHAT: SOURCE: <http://agalert.com.au/simplistic-solution-prickly-problem/>

## ***Simplistic solution to a prickly environmental problem***



***Prickly Acacia is another of those species introduced to Australia with good intent, but has become a 'weed of national significance'. Col Jackson talks to a farmer/inventor who says he has an answer to its eradication.***

AS THE STORY goes, an 'expert' many years ago approached the federal government with a great idea to solve a chronic problem across vast areas of western Queensland, the Northern Territory and portions of adjoining states: how to combat and eradicate the prickly acacia that has become a pest.

The government paid him a considerable amount of money to commence work. No work was done, and the 'expert' and the money were never seen again.

Since that time a number of schemes have been implemented, with very little ongoing success.

Biological methods began when six insects were introduced into Australia as control agents, with two establishing and providing some benefit. Potential new agents have been identified and are undergoing host testing prior to release.

Herbicide control was also investigated for trees with stems up to 10cm in diameter. Other methods included cut stump treatment, soil-applied treatments and foliar spraying of seedlings.



Mechanical control included grubbing, pushing, stick-raking and double chain pulling.

Man-made open earth channels, especially bore drains, stock troughs and turkey's nest dams attracted heavy infestations, with the ability to produce a large number of pods annually.

Prickly acacia is known to produce more than 175,000 seeds per plant per year, and can rapidly displace native vegetation with dense thickets.

The umbrella-shaped tree was introduced to Australia from India in the late 1800s as a nutritious source of feed for sheep when the nation rode on their fleecy back. In 1926 it was recommended by the Department of Agriculture and Stock as a suitable shade tree for sheep in western Queensland, and was extensively planted around homesteads, bore drains and dams during the second quarter of this century, not only for shade but also for fodder value in the protein-rich pods.

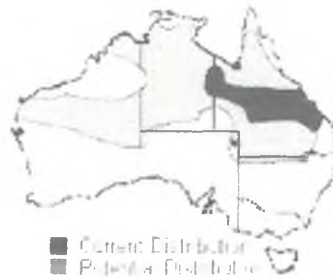
The wool crash of the 1970s saw the conversion of sheep properties to cattle. A series of wet years during the fifties and again in the seventies promoted the massive spread of prickly acacia throughout the northern downs and led to the establishment of dense, impenetrable thickets.

The slump in cattle prices in the seventies led to high stocking rates, the significant effect being that the large numbers of cattle acted as dispersal agents.

There is some documentation of how seeds were often carried in saddlebags and distributed by riders on horseback.

Ranging from thorny shrub to a small tree, the prickly acacia typically grows to five metres in height, but can reach 10 metres. It is recognised by its umbrella shape and characteristic fern-like leaves and pods.

Young shrubs form dense, thorny thickets; mature trees are generally single stemmed, with spreading branches that have lost most of their thorns.



Since that time, it has spread significantly and now infests over 22 million hectares of Queensland, covering areas from Mt Isa to Hughenden, south to Barcaldine and west to Boulia. There are also infestations in coastal areas around Home Hill, Bowen and Rockhampton.

Smaller infestations are found in the Northern Territory, South Australia and New South Wales.

Prickly acacia degrades the soil, causes erosion, threatens biodiversity, takes over pasture and interferes with the mustering of stock. It is nationally recognised as a ‘weed of national significance’ — one of the worst weeds in Australia because of its invasiveness, potential for spread and economic and environmental impacts.

Like many legumes, prickly acacia is hard-seeded, and only some seeds germinate at any time.

It is recognised as one of the most serious weeds in Australia, rapidly establishing impenetrable thickets on low-stocking-rate pastoral land, and creating problems by harbouring feral animals. It is deep rooted and able to withstand dry periods while providing fodder for both cattle and sheep.

On a farm near Giru in north Queensland, former cane farmer and harvester operator, Gary Parker, believes he has come-up with a solution to a serious problem that has defied the best efforts of scientists and engineers alike.

He discusses methods of eradication that have been tried in the past — from bulldozing to mechanical extraction — methods he admits can leave large holes across a pastoral landscape.

He has researched the history of the prickly acacia and the many attempts to eradicate the pest that was declared a noxious weed in 1957.

“Seeds left above the ground will not germinate,” he maintains, “but once the ground is disturbed, the seeds will bury and eventually germinate with moisture.”

He speaks as if he has a personal crusade to rid rural areas of the weed: “They’ve got thorns like you wouldn’t believe.”

And he has personal experience with some eradication methods that do work: “Cut them with a chain saw and manually poison the stump within 20 seconds — that works,” he says.

“Another method is basal barking, where the entire trunk is saturated with poison, but that involves large volumes of chemicals.



“And when camels were introduced to combat the noxious weed, they ate the grass first, denying cattle their natural food, and leaving them nothing for survival.

Camels also destroyed water troughs and fences.

He says another conundrum in the west is that 95 per cent of the land is leasehold (government lease) and the owners are obliged to keep the country free of pest vegetation.

“In reply, the graziers say the government brought the trees in, so the government should clean them up.”



After researching the many methods of eradication that have been tried — and very few being successful to any extent — Gary Parker set about designing a common-sense approach to cutting the stem at ground level, and at the same time poisoning the stump in one pass.

It's a cane harvester owner/operator thing that goes back to the very beginning of the mechanised system of cutting cane: inventiveness mixed with trial and error were part and parcel of the development into what is a powerful and efficient machine that operates on farms in all cane growing areas.

He says the principal behind his down-to-earth tree remover is that it cuts from both sides.

“That's the invention — the patent,” he adds. “It's simple and effective.

“It's the fastest, most cost-efficient method for permanently removing prickly pest trees.”

Gary Parker says that every property has an old tractor that lies almost dormant, and this was the basis of his invention.

He goes further to explain that it is “a one-shot machine that accomplishes two roles — cut and poison.”

He built a monocoque frame that mounts under the length of a tractor and pushes from the three-point linkage at the rear, which offers the most available strength.

He has also designed and built a smaller model that is mounted under a quad bike, with the weight being taken by the drawbar or towbar at the rear.

Thinking outside the square, the machine can also be fitted to a surplus farm 4x4 utility vehicle, with the spray tank being positioned in the rear tray.

Mounted at the front of either frame are two blades that address the trunk from both sides and pass non-stop through the tree and keep going.

When the blades are not cutting, they are electrically raised into a travel position. A 12-volt battery is essential on the tractor and quad bike.

Parker says that the hardened blades are intended to work all day in soil — and the skids that support them are designed so that the blades will rarely come into contact with the ground — rather simply skim over the top.

“If a blade should become destroyed by hitting a large rock, it is a simple operation to remove a series of bolts and fit a new blade,” he says.

Incorporated into his designs are poison tanks that release a chemical onto the severed stump.



The tractor-mounted tank holds 100 litres and is foot operated. The tank for the quad bike holds 20 litres, fits onto the carry-all and is manually operated from an electric switch on the handlebars.

The tractor-mounted model will cut through a 15cm (6 inch) trunk, while the quad bike model will cut through a 5cm (2 inch) stem.

Parker says his down-to-earth one-shot tree remover is the most cost effective method to remove prickly pest trees from a property, and safety shields are incorporated onto both models to protect the operator.

He says by cutting the tree at ground level, there is no stump left protruding above the ground.

“There are no moving or driven parts on the machines,” he says.

“Its simplicity is that the two horizontal cutting discs rotate as they pass through a tree, creating a scissor action.



“It’s the momentum provided by the quad bike, tractor or vehicle onto the patented machine that causes the blades to cut through the stem of the tree,” he said.

“The speed at which individual trees are cut is entirely up to the operator.

“And while there is no specific training required to operate the machine, the basic rules of workplace health and safety and common-sense apply to this like any other piece of machinery.”

Parker says the only maintenance required is the sharpening of the blades, which can be done by the operator while the blades are still attached to the machine.

“If required, an angle grinder is supplied with each machine, and sharpening can be done by simply rotating the blades by hand,” he said.

After two years of development and trials, Parker now says the down-to-earth tree mover is ready for the market.

“It will be moderately priced and is cheap to operate.”

He expects the small model will cost between \$4,200 and \$4,400, while the larger, tractor-mounted machine will come in at about \$11,000 to \$12,000. It is supplied complete with electrical wiring and chemical plumbing. Delivery is extra.

“These machines have been designed to remove the tree and poison the stump — while travelling in a forward direction, at a reasonable speed, without stopping, by a single operator,” Gary Parker said.

“It can be fitted and operational within about half-an-hour.”

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