Is over-regulation crippling effective pest management?

Reducing over-regulation of pest control will allow more effective pest management.

We have noted previously that the intricate approval processes & regulatory requirements for pest control options can delay innovation and adoption of pest management solutions. This also increases costs. Even after a national registration process is completed there can be additional requirements at the state level. A recent example highlights a label requirement that is now causing confusion and restricting effective rabbit management.

What is the current issue?

We hear more and more from landowners that rabbit populations are rising due to good breeding conditions, and because bio-controls such as Myxoma virus and RHDV (Calici virus) are inevitably being met with more and more resistant or immune rabbits.

Pindone baiting, with oats or carrots, remains an effective form of rabbit control. The Australian Pesticides and Veterinary Medicines Authority (APVMA) correctly concluded in 2002 that

> “Pindone is a first-generation anticoagulant used to control rabbits in areas where the alternative rabbit poison, sodium fluoroacetate (1080), is either impractical or unsuitable. These include urban and semi-rural areas including hobby farms, golf courses and horticultural areas.”

However, confusion has arisen ever since the label was changed, by the APVMA review, to include the following regulations:

- “DO NOT use in urban areas on residential blocks less than 1000m² in size”, and
- “DO NOT place baits in locations that are accessible to children”

With respect to the first point, landowners with land sizes less than 1000 m² would have to look for alternative solutions even though Pindone baiting is a safe and effective option, particularly on peri-urban properties nearing that lower size limit. If the intent for this label alteration was to restrict the use of Pindone in the inner suburbs, where rabbits are unlikely to occur in great numbers anyway, then perhaps it could be re-worded as:

- “Not suitable for use in the home garden”

The second restriction, on use in ‘areas accessible to children’, appears to be the standard restriction placed on all labels for anticoagulant pesticides for use around homes, where it makes good sense.

However, the situation is not the same for rabbit baiting with Pindone because the baits are used outdoors, in thin trails where rabbits feed. In fact, Pindone baiting is the preferred method to control rabbits in the rural and peri-urban fringe and in places like parks, road reservations, cemeteries, hobby blocks and golf courses which are all accessible to children. It is approved for this use, but the label is confusing due to the restrictions added. ACTA believes that the risks to children are minimal and easily managed. Toxicity studies show that, in the worst case, a 10kg child needs to eat 500mg of Pindone, equivalent to 1kg of oat bait or 2kg of carrot bait to have a toxic effect. We do not believe a child would repeatedly pick up and eat large quantities of green dyed oats or carrots off the ground. We are unaware of any incident in the entire 30 plus year history of Pindone use in Australia where a child has had such a mishap. In any case Vit K1 is an effective antidote.

Why is ACTA concerned?

Landholders need to comply with relevant state Acts which provide a legal obligation to control declared pests (rabbits). Those who fail to do so may be penalised by authorities. The confusion in Pindone labelling may lead to the reduction in use of one of the most effective measures in rabbit control. Some frustrated landowners may bypass the constraints and revert to “home-made” and unregulated remedies. These can be dangerous for users, non-target native species and to the wider environment.

Worse still, agencies in Victoria have recently threatened prosecution if users put baits in areas accessible by children contrary to the label.

What has ACTA done?

ACTA has advised the APVMA of the implications surrounding the label and we have provided data for the additional label restrictions to be removed. The APVMA has advised that a totally new submission must be made. Generating such a submission to the APVMA, would take significant time and expense.

What can we all do now?

The best way to approach this is to now work together. Let us know if you have been effected by these new label requirements. Secondly, if you are a member of a Landcare Group, industry support federation or natural resource management group, talk about it at your next meeting. It is likely that others would have experienced similar restrictions and some may have even been investigated or even threatened with prosecution for not taking a literal direction from a confusing label.

We would be pleased to further engage the APVMA, interested industry bodies and concerned politicians to effectively tackle the real problem – the introduced pests.

Prof Linton Staples
Storage of baits

Secure storage of toxic baits is an important issue. However, if this is an outdoor storage shed it can lead to ‘cooking’ of baits as temperatures in a shed can still be quite high even though it is out of the direct sunlight. If you live in a hot climate, your storage shed could reach temperatures well over 50°C and leaving baits in direct sunlight, even for short periods of time, increases temperatures to harmful levels for bait material.

Having temperature-effected bait may reduce the value of your investment, as the bait material can become less palatable. Products can change colour if subjected to extreme heating. We have previously advised that sweating of grain-based products like MOUSEOFF® can extract moisture and promote degradation in extreme conditions.

ACTA recommends that, where possible, baits of all types should be kept at temperatures below 30°C. This will ensure bait stability and performance when it is time to implement your baiting program.

Australian HOGGONE® field trials promise an effective and humane option for feral pig baiting programs.

The HOGGONE® project addresses the need for a more humane way to manage large numbers of feral pigs. The need is particularly great in Australia and the United States, where feral pigs continue to increase in their range and abundance. Feral pigs are causing massive environmental and agricultural damage. In areas such as Europe feral pigs are also spreading lethally African swine fever. While existing control options such as shooting and trapping remain important, none have kept up with the increasing pig populations.

Feral pigs must be managed in the field over large areas. Poison baiting is used widely in Australia because it is a very cost-effective option, especially in landscapes where vegetation cover prevents aerial shooting. 1080 remains as the most widely used chemical for poisoning feral pigs, but even 1080 is not ideal because it is often added to meat or grain and there are concerns that some non-target species may be accidentally poisoned. The risk is exacerbated by the high 1080 dose required to kill feral pigs.

Using sodium nitrite baits to control feral pigs

A review of potential toxicant options revealed that large acute doses of sodium nitrite (SN) are toxic for pigs. SN is used and approved at very low concentrations as a preservative for processed meats. However, once ingested, high doses of SN are quickly absorbed into red blood cells and convert normal haemoglobin to methaemoglobin (metH). Methaemoglobin cannot carry oxygen and occurs naturally at about 1-2% of the blood. However, if metH reaches about 70-80% it quickly becomes fatal via a phenomenon known as “metabolic anaemia” which is a lack of oxygen to the brain and other vital organs. The effects are similar to carbon monoxide intoxication and are not only humane but also very fast. Most animals succumb within 1-3 hrs after ingesting 100-300g of the HOGGONE® bait. Pig carcasses can mostly be found within 200m of a bait delivery point. Feral pigs are especially susceptible to SN poisoning because they have very low levels of the protective enzyme, methaemoglobin reductase, that in most other species is able to convert abnormal metH back to normal haemoglobin.

Benefits of using Sodium Nitrite

Another important aspect of SN is that it is detoxified quickly before death and any sodium nitrite left in the feral pig carcass is very low and continues to break down. The risk of secondary poisoning to scavengers is minimal. SN also degrades quickly in the environment.

Recent trials in Australia

HOGGONE® promises an effective new option for feral pig management

St George, QLD

This trial assessed the field performance of HOGGONE® in a large-scale feral pig baiting program on two farms near St George in southern Qld in collaboration with the Qld Murray-Darling Committee (QMDC) staff.

Field performance of HOGGONE® was measured by comparing the difference in number of feral pigs at bait stations, bait-uptake and feral pig activity pre and post baiting. Also the number of pigs detected in the landscape between areas was assessed. Despite bait being placed at only 11 sites within 25,000 acres, HOGGONE® reduced the number of feral pigs at bait stations by 64%, reduced bait-uptake by 66% and reduced general feral pig activity in the landscape by 80%. A total of 115 dead feral pigs were found, and all of these were found within 236m of the bait stations, with most within 100m.

Hillston, NSW

A second trial at Hillston NSW tested HOGGONE® after pigs were captured in several large water-point traps. This allowed assessment of impact on known numbers of trapped animals, but also replicated natural field conditions for this area. The trial method followed the recommended approach for effective feral pig baiting programs, and that is:
1. Pre-feed with locally sourced grain to cluster pigs at the bait point (1-2 nights).
2. Offer placebo (non-toxic) HOGGONE® bait for one or two nights.
3. Finish with two nights of toxic HOGGONE® bait.

Over 107 feral pigs being held in the three water-point traps, HOGGONE® killed 91. All but one were killed on the first night of toxic baiting. Non-target impacts were minimal despite goats and macropods being co-captured at the watering points and exposed to the baits. Vomiting was infrequent. Only one goat was killed despite more than 10 being held within in each pen at the time of toxic baiting.

What’s next?

Our US partners (USDA & TPWD) are currently conducting large-scale toxic field trials in two states. If the results from the field trials confirm the bait to be effective and environmentally acceptable, they will prepare a registration package for the use of HOGGONE® in the USA.

Here in Australia, we must await a decision from the APVMA before HOGGONE® can be made commercially available, which could take up to 18 months. However, this does not mean that feral pig damage cannot be reduced in the meantime. Even when HOGGONE® bait does become available to land managers, it will not be the silver bullet in feral pig management. Shooting and trapping programs remain relevant. Best practice pest management includes coordinating with neighbours and using multiple techniques in strategic succession to keep on top of the problem.
Protecting Towra Point Shorebirds

Fox baiting at Towra Point contributing to vital shorebird program

Towra Point, on the shores of Botany Bay in Sydney is a Ramsar listed site (the Ramsar convention, named after city of Ramsar provides a framework for conservation and wise use of wetlands) that supports resident and migratory shorebird populations.

In 1982, Towra Point was declared a nature reserve, and in 1987 it was further declared an aquatic reserve to protect the seagrass and mangrove areas that support aquatic life and the migratory shorebird species that visit to nest. There is a large suite of bird populations that inhabit Towra Point. Resident species include the endangered Pied Oystercatcher (Haematopus longicristatus) and the vulnerable Sooty Oystercatcher (Haematopus fuliginosus). Migratory bird species include the Golden Rover (Pluvialis dominica) and the vulnerable Bar Tailed Godwit (Limosa limosa). Notably, Towra Point supports the breeding cycle of the endangered Little Tern (Sterna albifrons) which has been actively breeding there since 1990.

Predatory foxes are present in the surrounding habitat and have caused significant problems for all fauna species at Towra Point. Fox baiting with FOXOFF® began in 2008. The 2015/16 Pied Oystercatcher season started on Towra Point and Towra Spit Island in late August. With good numbers of Pied Oystercatchers, a good season was predicted. There was a total of 9 nests with 20 eggs resulting in a total of 17 chicks with 13 fledglings surviving. This is the highest number of fledglings recorded ever in Botany Bay which is an excellent result. The cross-tenure fox program on the Kurnell Peninsula is playing an important role in the survival of Pied Oystercatchers which is an endangered species.

FOXOFF® baiting programs run from late winter and into spring depending on fledgling numbers and the timing of their appearance. Towra Point Nature Reserve is managed by the Office of Environment and Heritage, which includes the NSW National Parks and Wildlife Service.

With the sustained effort of dedicated, professional land managers and the application of target specific technologies at Towra Point, the future of vulnerable and endangered bird species is much brighter. This story illustrates the positive relationship between advances in baiting technology, cross tenure approaches, monitoring and hard work. Thank you to Jason Bishop and his team for their ongoing work, passion and dedication to help protect this idyllic site that has ongoing pressure from urbanisation, human impacts and invasive species. Photos courtesy of Jason Bishop and Chris Roach.
Reducing cane toad numbers by using the Toadinator™

Introduced cane toads adversely affect Australian ecosystems. Toads are toxic to native predators, compete with and prey upon native species, and can spread disease.

ACTA is pleased to announce that after successful field trials by experts at JCU, TOADINATOR™ trap units will be available to order at our official launch which will be during Beef Australia Week at Rockhampton in May this year. We will have complete units on display and information available for interested customers.

Impacts of invasive toads

When cane toads arrive in a new area, many large vertebrate predators including goannas, quolls, snakes and birds, can be killed from consuming the front line of the toad invasion. Toads have poison glands that can kill even crocodiles. This insidious process means the following toads are unopposed.

Cane toads also consume insects, which are food for native animals. They have negative impacts on some ground-nesting birds, such as bee-eaters as they consume eggs and chicks. In addition, cane toads can take over burrows of native burrowing wildlife

The TOADINATOR™ is a cage trap designed specifically for the effective capture of cane toads. It is compact, lightweight, portable and easy to assemble. On three sides the cage has specialised one-way finger doors that allow toads to enter but not exit. The ACTA-ATTRACTATM is a solar powered, self-charging light and sound attractor unit designed to bring toads to the trap. The ACTA-ATTRACTATM has an inbuilt UV light that attracts insects, which in turn also attracts toads.

Why the sound lure is important for successful toad capture

The ACTA ATTRACTATM technology, provides calls specific to lure female toads. This is the key to the success of the TOADINATOR™. JCU researched male cane toad calls and identified what made their calls attractive to female toads. During trials, capture rates increased when toad calls were used in combination with light. It is important to remove female toads from the population because fewer eggs will be laid for future generations. The pre-recorded ACTA ATTRACTATM calls are selected to maximise luring. Toads are attracted by the sound and also by the insects that are attracted to the UV light.

Modifications to the ACTA ATTRACTATM will soon allow it to be used to attract other species of pests if required.

NEW ACTA TECHNOLOGY

This is an exciting new tool to manage one of Australia’s most notorious and unwanted pest animals. If you would like more information or would like to order your own TOADINATOR™, please call (03) 9308 9688 or email enquiries@animalcontrol.com.au

As with all ACTA products a comprehensive user guide is available from ACTA or www.animalcontrol.com.au
In 2017, ACTA sent a short survey to all councils and shires across Australia to gain an insight into the capabilities of local government to deal with pest animals, especially feral pigs.

As state agencies pull back from active pest management activities, local councils and shires play an increasingly important role as they undertake planning, supporting and regulating a range of pest control activities. The simple survey was sent out to all 536 local councils across Australia, and we received responses from 113 (21%). Many of the remainder were urban and did not need to respond. The area covered by those who responded was 1,961,205 km² and it included responses from rural, peri-urban, and just a few urban zones (Figure 1).

The rural zone made up 95% of the total respondent land area (1,867,524 km²) but only 45% of the 260 pest management staff worked in the rural zone. 20% and 31% worked in the peri-urban and urban zones, respectively (Figure 2). With all results combined, this equates to one pest officer being stretched over an average of 7514 km² and highlights how thinly spread our local councils are for dealing with pest animals on a vast geographical scale.

The low staff-to-area ratio is a likely reason why many councils tend to employ contractors to undertake some or all of the on-ground works; it simply isn’t possible to cover the required area effectively with such low staff numbers. Remarkably, over 20% of councils responding to this survey did not have a permanent staff member, or employ contractors, for pest animal management in their area.

The most important factors when considering vertebrate pest management is to encourage widespread participation to maximise control program efficiency and to slow reinvasion and/or population recovery. Hence, we asked councils what factors seem to impede landholder involvement in their area. The top three responses included knowledge, funding and lack of community interest.

We then asked what may help improve landholder involvement and the top responses were more funding, resources, staff, education and coordination (Figure 3).

Figure 3 - What would increase landholder involvement in pest management?

- Landholder participation
- Better managed public land
- Legislation change
- Surveillance/monitoring
- Government support
- Clear responsibilities
- Coordination/collaboration
- New tools/research
- Enforcement
- More staff
- Education/training/engagement
- Funding/resources/time

The final few questions in the survey were related to feral pigs and their management because there are mounting reports to suggest that feral pig numbers are higher than they’ve ever been, and that they are spreading to new areas. It appears that if something isn’t done to address the situation soon, we could be facing a serious national disaster. Feral pigs pose a high risk to profitable agriculture and to biosecurity, see article on pg 3.

Feral pigs can survive almost anywhere and can produce two litters per year with litter sizes of about 6-10 piglets, in good seasons. Therefore, their populations can recover quickly after one-off control efforts and drought, and they can establish populations quickly in new areas, if left unchecked.

It came as little surprise that 55% of respondents said they had at least some feral pigs in their region, and some of these were from peri-urban and urban zones. That said, none of the councils regarded feral pigs as being ‘severe’ in their area yet.

We were also very interested to find out what management techniques are being used to reduce feral pig damage. The most common control techniques included trapping, baiting (1080) and shooting (Figure 4). Aerial baiting and aerial shooting were also used in large-scale rural areas.

Clearly, the best time to manage pest animals is before they become a serious issue, especially if isolated populations can even be eradicated.

Our preliminary survey was enlightening due to the response level and participation. We now hope to follow-up with more local governments, and other related organisations, to get a better quality assessment of the resources available for feral pig, and other pest animal management to hopefully identify ways to improve capabilities/capacity to deal with the threat. This is a work in progress but we would like to thank all those councils/shires who took the time to complete the survey. We also hope that this information can be used to improve pest management and potentially increase resources in this area.
Tropical zone pilot trial shows promising steps towards saving an iconic species in New Caledonia

The Mt Panié Kauri (Agathis montana) is a long-lived native conifer species of New Caledonia that is critically endangered. Feral pig activity has been identified along with climate change, insects and Phytophthora as threatening processes for this species.

In the northern province of New Caledonia the Mt Panié wilderness has been experiencing significant damage by feral pigs. Pigs dig up vast areas of prime Mt Panié Kauri habitat in search of roots and grubs. This damages the seedlings and prevents regeneration. Feral pigs also travel down from the mountain tops to feed on the vegetable gardens essential for the surrounding villages. Conservation International, Dayu Biik and local villagers are working hard to manage feral pigs in the area with a combination of aerial shooting and traditional hunting. However it is very difficult to control the pigs at the top of the mountains due to the dense cover and steep terrain. In this situation poison baiting may be the answer. Local managers contacted ACTA to see whether we might be able to test HOGGONE® in New Caledonia.

In December 2017, our Feral Pig Management expert, Jason Wishart, ventured to Mt Panié to assist locals with a small-scale field trial using placebo and toxic HOGGONE®. The trial site was identified by the local Dayu Biik management board which is composed of indigenous traditional authorities. The bait station sites were selected based on extensive surveys and camera monitoring of the region which showed areas of regular feral pig activity.

The trial project area is situated within the orange boundary (See map below). Also, depicted in the map are the bait station sites (red squares) and the landscape monitoring camera locations (black cameras). The management program will be expanded to include all land within the yellow boundary if HOGGONE® shows significant feral pig activity reductions in the pilot program.

Pre-feeding with coconut and peanut paste commenced several months before Jason ventured to the island. When Jason got to the island, placebo HOGGONE® was placed into locally built timber feeder boxes which prevented off-target access and reduced exposure of bait material to the rain. Due to the lengthy pre-feeding phase of the project, it was thought that a significant proportion of pigs were in regular contact with the feeder boxes immediately before the intensive baiting trial occurred.

The intensive baiting trial followed the recommended process for all feral pig baiting programs:

**Stage 1** Transition from locally sourced bait (coconut & peanut butter) to a combination of this and placebo HOGGONE® until >80% of placebo was consumed, each night, for 2 nights.

**Stage 2** Poisoning with toxic bait over 2 consecutive nights, replacing any disturbed bait daily and replenishing feeder boxes if required (2 x 2.5kg fresh trays of HOGGONE®/night).

**Stage 3** Remove any remaining toxic HOGGONE® and return to placebo back into feeder boxes. This allows staff to determine if there are any feral pigs remaining in the area after the toxic baiting phase and is recommended for 1 night minimum.

Despite excellent planning, by the time we were able to start the trial, the wet season commenced. This meant that many of the feral pigs that were pre-feeding in the months leading up to the trial began to disperse from the baited area in search of other foods. The few feral pigs that did visit the bait boxes at two sites happily ate the placebo HOGGONE® and in one case ate it instead of the coconut and peanut butter that they were used to eating.

The pigs that were eating placebo HOGGONE® also fed quite happily on the toxic HOGGONE® bait when it was offered, but we did not find any carcasses due to the dense vegetation and the steep terrain. Essentially this small trial showed us that feral pigs found the HOGGONE® feral pig bait palatable when they find it. The next phase will be to run another trial at the end of the dry season to see whether we can attract more feral pigs to the bait stations. A positive result from the trial was that all of the team in New Caledonia are trained to bait feral pigs with HOGGONE® so they will need little assistance next time around.

**New PAPP capsules may shortly be available for Canid Pest Ejector (CPE) device**

Everyone will be aware that we already provide CPE capsules pre-loaded with a precise dose of 1080 of either 3mg (clear seal) or 6 mg (blue seal) for control of foxes and wild dogs, respectively. These have proven very popular throughout Australia since being launched by ACTA.

Now, with support from Australian Wool Innovation (AWI) and collaboration from Ben Allen at the University of Southern Queensland, we have now completed research work to show that the PAPP capsules can also be used to achieve a very quick knockdown of these pests under field conditions.

We have demonstrated that PAPP is stable with a long shelf-life in the capsules and that the dose is reliably received when animals trigger the PAPP loaded ejectors.

In pen trials, 4/4 foxes were killed with a mean time to death of 121 minutes using 400mg PAPP capsules. Similarly, 10 out of 11 captured wild dogs were killed with a mean time to death of 84 minutes using 1000mg PAPP capsules.

Under field conditions at Mt Hope in Western NSW, a fox was found just 70 metres from the trigger point and at Quinyambie Station in the Strezlecki Desert of north-east South Australia a total of 30 ejectors were triggered by wild dogs with 8 carcasses being found with ground searches at distances of 30 to 200m (mean 96m) from the trigger points.

These results demonstrate that the PAPP capsules are not only highly effective but they also allow a much higher chance of finding the carcass than if 1080 is used. No non-target activations of ejectors were observed.

ACTA is preparing the registration package for PAPP capsules to the APVMA and hopes that, as they have recently approved the PAPP chemical and its use in FOXECUTE™ and DOGABATT™ baits, that this simple extension will be approved with minimal delays.

If approved, this is yet another tool to assist in the battle of managing the ever-increasing pest animal problems.
Hats off to our Production Team

The Production Team at ACTA has been working tirelessly for many seasons to make high quality products and get them from the warehouse to our loyal customers safely and on time. As they say “ACTA can usually respond to today’s needs yesterday but miracles take a few hours longer”.

Ben Hall (pictured bottom, right) who leads the team through periods of high demand, high stress and high output says his team work incredibly hard to deliver a huge range of products all over Australia.

“The production team at ACTA are a great bunch of people to work with, have varied skills that complement each other and they always get the job done. They go above and beyond when the pressure is on and I am proud of what we can all achieve together.”

As a company, ACTA relies heavily on maintaining high quality products. Without the production team, we wouldn’t have such an impressive range of products and we wouldn’t have the confidence to sell them to land managers and help them manage many of Australia’s pest animals.

Contact Us: Phone: 03 9308 9688 Fax: 03 9308 9622
www.animalcontrol.com.au enquiries@animalcontrol.com.au

Toula Larosa Logistics & Customer Service Coordinator tlarosa@animalcontrol.com.au
Linton Staples Managing Director lstaples@animalcontrol.com.au
Ian Senior Chief Finance and Operations Officer isenior@animalcontrol.com.au
Chris Roach Commercial & Technical Manager and product sales croach@animalcontrol.com.au
Craig Louey Strategic Commercial Manager clouey@animalcontrol.com.au
Maria Pironi Accounts & Administration Manager mpiorini@animalcontrol.com.au
Ben Hall Production & QA Manager bhall@animalcontrol.com.au
Jason Wishart Feral Pig Management Project Officer jwishart@animalcontrol.com.au
Jessica Marsh Extension & Communications Manager jmarsh@animalcontrol.com.au

(03) 9308 9688 0411 079 333
(03) 9308 9688 0430 355 581
(03) 9308 9688 0404 366 117
(03) 9308 9688 0428 163 756
(03) 9308 9688 0419 841 989
(03) 9308 9688 0458 266 823
(03) 9308 9688 0448 010 596

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- TOADINATOR™ & ACTA ATTRACTA™
- FISH BASED BAIT FOR FOX CONTROL
- SLUGGOF® Slug & Snail Bait
- FOXSHIELD® Fox Bait
- FOXECUTE® PAPP Fox Bait
- DOGABAIT® PAPP Wild Dog Bait
- DENCOFUME® Fumigation Cartridges
- RABBAT® 1080 Oat Bait
- PIGOUT® Feral Pig Bait
- MOUSEOFF® Zinc Phosphide Bait
- DOGGONE® Wild Dog Bait
- HOGGONE® msSN Feral Pig Bait

Animal Control Technologies (Australia) Pty Ltd
Phone: 03 9308 9688 Fax: 03 9308 9622 Email: enquiries@animalcontrol.com.au
Further Information at www.animalcontrol.com.au