

## New PAPP technology reaches market

We are proud to confirm the availability of the first products containing para amino-propiofenone (short name 'PAPP') in Australia. The launch announcements were made in June 2016 following APVMA product label approvals in January 2016. A feature about the project and its role in the wild dog issues was hosted by reporter Prue Adams on the ABC Landline program broadcast on the 12th June. This was accompanied by press releases from the Invasive Animals Cooperative Research Centre (IA-CRC) and Australian Wool Innovation (AWI).

In this ACTA newsletter we aim to reinforce some features of the PAPP baits to combat foxes and wild dogs. We also seek to slightly reposition some messages, so that the PAPP products find the most appropriate applications in canid pest management.

Our readers will know this project has had a good deal of publicity over the 11 year R&D phase. It was promoted as part of the IA-CRC PestSmart 'road show' program and in various *ad hoc* presentations, which sought to update groups throughout the country on new and emerging technologies. We also featured updates in four ACTA newsletters Issues (#30, 32, 33 & 34). Normally, we try to leave the communications until the job is fully done. It is sometimes hard to balance the risk of premature publicity against the need to know what is happening. This has been made more difficult by the relatively uncertain and very protracted regulatory assessment process.

A long risk review arose because PAPP is a new chemical and also because it is a toxicant, it is used on wild dogs and foxes (so may pose risks to pets and working dogs) and finally, because it needs to be used widely in the environment. Part of the evaluation process requires setting of a Poison Schedule (S5, S6, S7 etc.) which in turn, triggers set safety statements and controls of use. Until final toxicant scheduling was known and labels approved it was impossible to pre-empt the distance restrictions, access and allowed uses of the product.

Now this process is complete, though with unexpected scheduling of **Restricted S7**, label uses and restrictions are now finalised and it is much easier to give more decisive advice.

While it has commonly been said or implied that PAPP is 'safe' because there is a cheap, readily available and effective antidote, this message now requires further qualifying and clarification. We have over recent months evaluated the data behind the IA-CRC work on an antidote to now give more comprehensive advice around the strengths and weakness of the antidote itself.

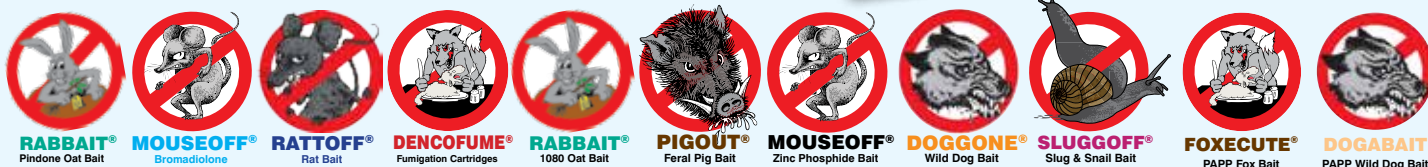
This newsletter is therefore largely devoted to the PAPP project, but we also take the opportunity to look at progress with ACTA Canid Pest Ejectors (CPEs).

Finally, I would like to mention several very gratifying comments from readers of this ACTA newsletter.

It is not so often that we "blow our own trumpet" but it has been pleasing to get so many requests for people to be added to our mailing list and some very positive feedback on the pitch and value of this newsletter, where we try to get the latest facts to users in an honest, practical and objective format. This is also a feature of all of our product booklets, which go through a peer review process before printing.

It is not as easy as many might think to achieve this level of communication from a small company with limited resources, so a big thank you to those who give us this feedback and encouragement.

Prof Linton Staples



# acta reviews it's image

A while ago we reviewed our logo to reflect a more modern image. We also added the mission statement

## **'Excellence in Pest Animal Management'**

We have recently surveyed some of our clients and while we continue to be seen as honest, reliable and effective technology developers, there is more to us than this. A recent workshop with external mentors discovered a lot more about how others see us and how this matches the 'values' that we have always had, but not really promoted.

The review process identified core values that give ACTA its focus.

In addition to providing honest and accurate technical information and being a reliable source of quality new technology, others also see ACTA as having extensive and transferrable experience in pest control technology.

We are seen as having the national perspective and logistics that are needed for a country with some of the largest invasive pest issues in the world.

This, plus our diversification into insects and molluscs, has necessitated an expansion of our mission statement to:

## CORE VALUES

We *promote* intellectual *honesty*

We transform *ethical science* into *practical reality*

We *contribute* to a healthy pest free environment

We apply *humane solutions* to pest management

We aim to *balance* sustainable agriculture with thriving biodiversity

## MISSION STATEMENT

We pioneer ways to redress the environmental and agricultural imbalances created by invasive pests.

# acta

# FOXECUTE® & DOGABAIT PAPP BAITS

Now Available

We would like to again acknowledge the Wool Industry via Australian Wool Innovation, (AWI), who put the original risk capital behind a then relatively uncertain R&D project and established the ACTA, AWI & IA-CRC project partnership to achieve our outcome. The decision to invest in the development of PAPP as a possible new toxin occurred at a time of the APVMA calling a special review of 1080, that took over 10 years to finalise. During this time there was concern and uncertainty about the future means to effectively control pests like foxes and the rapidly worsening wild dog problems throughout Australia. It takes forward-thinking industry support of this kind to tackle large and risky projects, so this role should never be underestimated.

We also acknowledge the IA-CRC, via its numerous participants and partners who supported this project from the outset and who played a crucial role in assisting with trials and testing. This really has been a team effort and none of us could have done it alone. ACTA would like to particularly mention the groups at Dubbo LLS, Inglewood, Matt Gentle, Andrew Bengson, Simon Humphrys, Fire Fly, ACS labs, Convocation NZ, Ben Allen, Frank Gigliotti, Sue Darby, Stuart Murphy, Nevolle Johnson, Lisa Thomas, Peter Fleming, Paul Meek, North Coast LLS staff, NSW NPWS staff, Rhett Robinson Clive Marks and PESTAT (and we offer a preemptive apology to those accidentally omitted).

## Why we need additional products to assist with canid pest management

### Fox problems in Australia

Since their introduction in the 1860s, foxes have adapted well to the Australian environment and spread from Victoria to now infest almost all habitats except the far tropical north of the continent. Their range and density may still be increasing.

Foxes are highly effective predators and thrive by killing a great number of Australian native animals. Small mammals and ground nesting native birds are at extreme risk. Many species have become extinct or at risk due to relentless predation pressure from foxes.

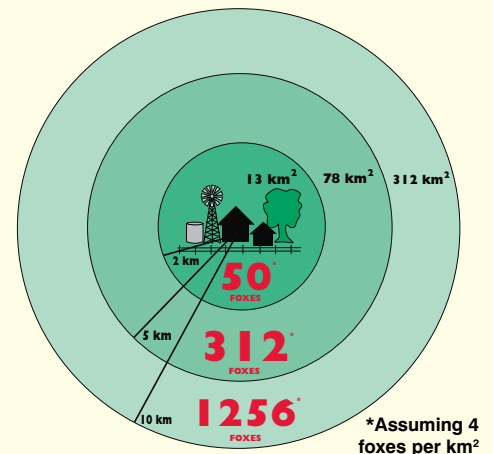


Fox caught on remote camera with native Bandicoot prey. Courtesy Rob Hunt

Foxes are also responsible for major economic losses of newborn lambs and goat kids. These predation losses can reach more than 20% of lambs born, so effective fox control programs commonly result in 20% or more increases in marking rates, worth many times the cost of fox control.



Fox densities commonly range from about 1 to 4 foxes/Km<sup>2</sup>, so there can be 300 foxes within a 5 km radius of a lambing flock or wildlife habitat. Most landholders still underestimate the true scale of the fox problem, by thinking that just a few 'old rogues' do all the damage.



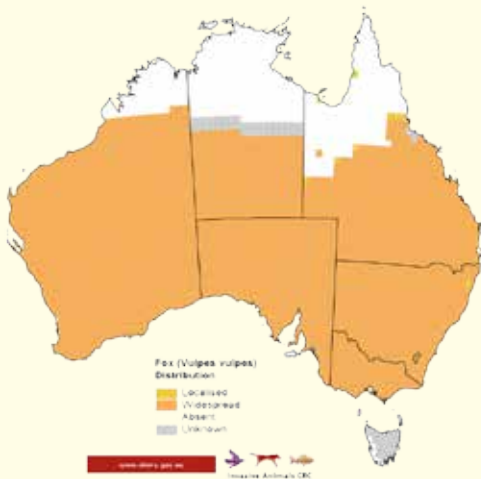
Apart from their massive impact on wildlife and lamb production, foxes are known to spread weeds such as blackberries and olives via their scats.

Perhaps even more importantly foxes carry and spread parasites, bacteria and viruses that affect working and pet dogs as well as native wildlife (e.g. mange, worms distemper, hepatitis and parvovirus). Foxes would transmit rabies, should this virus enter Australia.

### The PAPP Project Partnership



Invasive Animals CRC





# Wild dog problems in Australia

Wild dogs in Australia are an evolving and complex problem. Initially wild dogs were considered to be dingoes but in recent decades there has been increased interbreeding of dingoes with a wide range of farm dogs, lost hunting dogs and with escaped or dumped domestic pets.

The original dingo population entered Australia, probably from Java, about 4000 years ago and some consider



these to now be a native species. Since 4000 years is much more recent than the millions of years taken for Australia's unique fauna to evolve, the status of pure bred dingoes is debated. Regardless of where one stands on the native status of pure bred dingo, it is now a reality that cross breeding has diluted the dingo gene pool to such an extent that now even the dingo, as a pure species, is threatened by the wild dog population.

The crossbred wild dogs are formidable predators and have no real threats to their increasing numbers and distribution, apart from management actions by landholders and land managers. The national Species Profile and Threats (SPRAT) database indicates 79 native species, listed under the EPBC Act, as being threatened by competition and/or predation by wild dogs. In response to the threat a national coordinating group has been established to assist in implementing wild dog management actions across vast areas of Australia, see:

[www.pestsmart.org.au/pestanimal-species/wild-dog/wild-dogaction-step-1/](http://www.pestsmart.org.au/pestanimal-species/wild-dog/wild-dogaction-step-1/)



The IA-CRC has also established a number of fact sheets on the wild dog problem and methods to manage these.

[www.pestsmart.org.au/pestanimal-species/wild-dog/](http://www.pestsmart.org.au/pestanimal-species/wild-dog/)

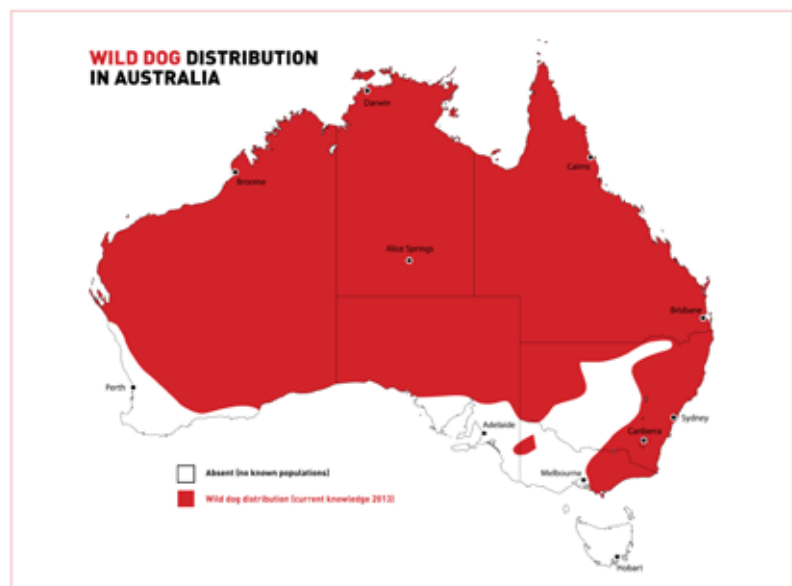
Wild dogs are now found from the northern tip of Australia to southern farming zones.

Wild dogs are highly effective predators and thrive by killing a great number of Australian native animals and farm livestock. Unlike the fox, which tends to tackle mostly prey up to around its own

Whole flocks of sheep have been lost in a single night from frenzied wild dog attack.

Estimates of the impacts on the Australian economy from production losses due to predation on livestock, disease transmission in livestock, and the costs associated with control, range from \$48-\$60M annually. However, anecdotal industry sources estimate the economic impact to be much greater, perhaps in the hundreds of millions of dollars per annum.

Figure 1: Generalised wild dog distribution in Australia

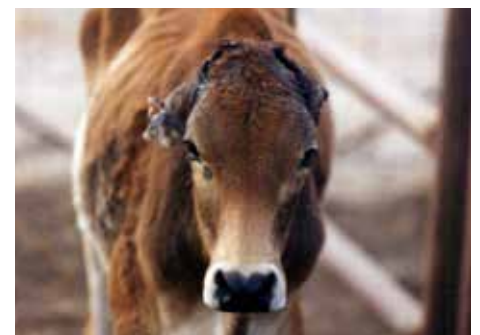


Adapted from material provided by Peter West (Invasive Animals Cooperative Research Centre), 2013. (Prepared from data collated 2004-2013)

size, wild dogs can work individually or in packs to attack much larger animals including calves, adult cattle and adult sheep.

**Wild dogs can exhibit surplus or frenzied killing so they can kill or injure many more stock and wildlife than are needed for food needs.**

Injuries can be horrendous and many animals are left horribly maimed to suffer long and lingering deaths after vicious wild dog attacks.





Wild dog predation also limits livestock enterprise choices, such as the decision to change from sheep to cattle or crop production in wild dog affected areas. This leads to regional communities being affected as the employment opportunities and supporting businesses and services, such as shearers, reduce in response.

Individual landholders suffer the financial burden of implementing wild dog management but also suffer the emotional trauma of finding their stock torn apart, despite their best efforts to control the wandering wild dog menace.

## Wild dogs and disease

Wild dogs also carry many diseases. The Australian Veterinary Emergency Plan (AUSVETPLAN) describes wild dogs as being susceptible to African horse sickness, anthrax, Aujeszky's disease, equine influenza, Japanese encephalitis, rabies, Rift Valley fever, screwworm, fly, surra, and transmissible gastroenteritis.

Rabies is a key exotic disease for which wild dogs are also ideal maintenance hosts.

Wild dogs, like foxes mentioned above, can also act as a reservoir for endemic parasites and diseases that affect livestock, wildlife and domestic pets, including distemper, hepatitis, hydatids, mange, *Neospora caninum*, parvovirus and sheep measles.

The dog tapeworm, (*E. granulosus*) – the cause of hydatids – has a well-established sylvatic cycle between mainly wild dogs and macropod marsupials with other hosts (foxes) and intermediate hosts.

Clearly, the combined threats of foxes and wild dogs pose a large impediment to profitable agricultural production and the maintenance of native species diversity in Australia. Without applying all the means at our disposal to address the worsening problem we could ultimately face an agricultural and environmental disaster. While habitat destruction and feral cats also contribute to the problems, we believe that it is necessary to tackle each and every one of the causes if we are to make true progress. In this context the development of an additional poison for canid pest management is a significant breakthrough and an important tool for the long term.



Flock of dead sheep after wild dog attack



Photo: Graham Wienert



# PAPP Launch Reaction

With all project partners working together, a media program was assembled around the June 2016 launch date. This encompassed some coverage on ABC Landline, many releases to rural press, some radio interviews, information update to vets, fact sheets and booklets distributed to land holders and loaded onto all partner websites. Even the IA-CRC glove box guide has been updated. Examples of the coverage, which has almost all been positive, are provided below.

## Predator poison with an antidote is released

June 14, 2016, 6 a.m.

Just released: Australian Wool Innovation on farm manager, Ian Evans, with the new wild dog and fox baits that contain the new PAPP toxin.

It's been a long wait but now landholders have a new predator poison at their disposal, and the best news of all is that it has an antidote.

A major collaborative research and development investment between Animal Control Technologies Australia Pty Ltd (ACTA), Australian Wool Innovation (AWI) and the Australian government, through the Invasive Animals CRC, has resulted in the first new predator toxin in 50 years becoming available, since 1080 was released on the market.

The two new poison baits – Dogabait and Foxecute® – are now available in Australia, after more than 11 years of thorough scientific testing here and overseas.

They contain a chemical toxin called para-amino propiophenone, or PAPP for short, which causes a targeted and quick death to wild dogs and foxes when consumed, and unlike other predator toxins, the new PAPP bait products have an effective antidote.

The announcement was greeted with relief by AgForce wild dog coordinator Brett Carlsson. "Finally we've gotten there," he said, referring to the widespread desire in grazing circles to be able to use a poison that had the potential to keep working dogs safe.

The antidote has been the biggest selling point of PAPP and the fact that at present it can only be administered by a vet is an "unfortunate reality", according to Brett.

"We anticipated having it in producers' hands," he said.

Due to the fast-acting nature of the baits, normal precautions and notifications must be undertaken to protect pets and working dogs during baiting programs.

Despite the attraction of the antidote, Brett believed PAPP would not have a huge uptake, being significantly dearer than a 1080 meat bait. "It will fill the gaps that need to be filled,"

he said. "It only comes as a manufactured bait so cost might be an issue for some, but the way I see it, people who are totally opposed to 1080, for whatever reason, could start using it."

He said PAPP would give landholders a comprehensive poison program again, used alongside 1080.

His words were reinforced by national wild dog facilitator Greg Mifsud, who said the new baits would complement existing control techniques, such as 1080 baits, trapping and shooting, to manage wild dogs and foxes within Australia.

"These new baits will enable a more comprehensive regional management approach to wild dog and fox management within Australia," he said. "We will always emphasise an integrated and coordinated approach to wild dog and fox control and there is certainly no one silver bullet to solve the problem but we welcome any new tools within the toolbox."

According to Professor Linton Staples, Managing Director of ACTA, which is manufacturing and distributing the products, extensive field trials around the country showed the baits to be highly effective.

"The PAPP chemical has been shown to be absorbed quickly from specially-designed wild dog and fox baits developed by ACTA," Professor Staples said.

PAPP bait products are available for sale to approved users and come under the same restrictions as purchasing and using 1080 baits. Use of the PAPP bait products differs between states and territories.

**For more information  
on purchasing the products visit**

**[www.animalcontrol.com.au](http://www.animalcontrol.com.au)**



# FOXECUTE® & DOGABAIT

## User Information Booklets



ACTA has developed detailed product information booklets to help users understand the new technology. We thank our panel of expert reviewers who proof checked all information so that it is as accurate as possible.

With generous assistance from AWI, the FOXECUTE® booklets were mailed to 35,000 sheep farmers throughout Australia in June. The booklets provide the above background on the problems we seek to address plus details of the new bait and how best to use it. The booklet provides background on the geographical and numerical issues of fox problems that are so often misunderstood.

A separate booklet dealing with the same topics in respect of the DOGABAIT product and the wild dog problems is printed and will be distributed to all farmers in the September edition of 'Beyond the Bale' AWI newsletter. We appreciate this contribution to effective knowledge transfer to end users for this new technology.

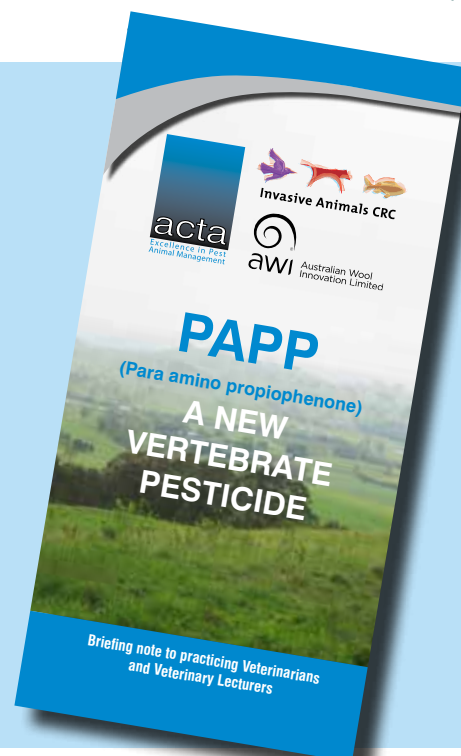
Both booklets have also provided background information on the PAPP chemical, on how it works and how its strengths and weaknesses. We also took the opportunity to briefly update on how PAPP differs from 1080.



## Veterinary advisory booklet

In addition, to the bait product booklets for a general audience, we have prepared a more technically focused advisory booklet that has been distributed to all registered veterinarians via the AVA, so that vets also have a detailed understanding of the new technology and an explanation of the best ways to treat pets or working dogs that may be affected by PAPP. The Veterinary advisory booklet covered the nature of PAPP and the metabolic transformation that makes it lethal in wild dogs and foxes but much less so in most other species. We also covered the metabolism and excretion of PAPP, and the mechanism of action to induce rapid formation of methaemoglobin in red cells that leads to painless death by metabolic hypoxia.

**Vets can contact ACTA on 03 9308 9688 to obtain a copy of this booklet if they have not already received it from the Australian Veterinary Association (AVA).**



**We have also sought to update on the mechanism of action of 1080 since we have found that many did not fully appreciate the importance of hypocalcaemia (due to chelation of extracellular calcium by citrate) in the action of 1080, over and above the known reduction in energy from the enzyme blockade of sugar metabolism into energy and CO<sub>2</sub>.**

In addition, the IA-CRC has now worked with Dr Jane Littlejohn (Wild Dog Communications Manager) and the AVA to develop a clinical guide sheet to assist in best practice approaches to treatment of PAPP poisoning. This discusses the use of emesis, activated charcoal and methylene blue antidote as measures to treat a PAPP affected animal.

During the development of the latter sheet, it became apparent that the initial messaging on the availability of a PAPP antidote was not as accurate as it needed to be, so we provide some additional information as follows.

# Re-positioning of the PAPP antidote

**In the initial development of PAPP baits it was hoped that a failsafe antidote in all circumstances would make the baits safer for working and pet dogs. While it remains true that there is a way to overcome the immediate effects of PAPP, the story is more complicated and some additional precautions are needed.**

While the antidote, methylene blue dye (MB), does reduce methaemoglobin back to normal haemoglobin (thus reversing the effects of PAPP) there are some important caveats that need to be emphasised.

**1** PAPP acts very fast to cause methemoglobinaemia, so death can occur within 1 – 2 hrs of a bait being taken. Thus, if the antidote is not administered within this time frame an animal will not be saved. This is a problem in areas that are distant from a vet, but may also be a problem if the symptoms are not noticed. Since the initial symptoms are lethargy, an affected animal may be mistaken for a resting animal. Having said this, even as later indications such as cyanotic tongue/gums and ataxia become apparent (anoxemia), it is still possible for the animal to be saved.

**2** The only antidote treatment that has been shown to work reliably to date is by intravenous (IV) administration. Some dogs have been successfully treated with an oral dose form but several administrations were required and the antidote is not well accepted by the dog. Attempts to achieve a simple formulation suitable for an oral dose or suppository have not been successful, so an on-farm option is not yet available. In addition to giving the MB antidote, an advisory sheet has been developed by the AVA and IA-CRC that now includes a suite of therapies including use of charcoal absorbent, oxygen therapy and inducing vomiting that may support the poisoned dog while the MB antidote takes effect.

**3** The commercially available MB solution in water is not isotonic (MB does not dissolve well in physiological saline). A non-isotonic solution is potentially able to cause immediate lysis (rupture) of red blood

cells, so the MB solution must be administered slowly to avoid red cell damage.

**These messages all have already been emphasised in the previous ACTA communications and booklets. However, in the process of the CRC preparing its clinical guide sheets in conjunction with AVA, three additional issues were uncovered.**

**4** Methylene blue dye can be toxic if overdoses are administered. One of the effects of MB overdose can be to cause Heinz body formation in red blood cells that may even exacerbate the problems of oxygen transport and methaemoglobinaemia.

As with many useful drugs there is a 'therapeutic window' for safe use. For MB, the cumulative maximum safe dose is below 10mg/kg bodyweight but even doses over 5mg/kg may require clinical monitoring during and after administration. During trials one dog given 15mg/kg was killed by the antidote. The toxic effects of MB overdose may develop over several days so monitoring and observation post treatment is recommended, especially if high doses of antidote are given. In human use where less severe methaemoglobinaemia is being treated, the maximum dose is set at 2mg/kg bodyweight.

The critical issue here is that if a working dog receives a dog bait dose of PAPP (1000mg) there is a risk that insufficient antidote can be given safely to reverse the PAPP. The data is confounded by the fact that some dogs in antidote trials vomited at the time of treatment (probably reducing the absorbed PAPP dose). It should also be noted that during trials of the antidote the animals had immediate access to the vet.

Added to this we have been advised that the response to the MB is sometimes not immediate. This means there is some risk that additional MB is given when it is not needed and this exacerbates the potential for inadvertent overdose.

The situation may be somewhat better for 400mg fox bait dose of PAPP where all MB treated dogs have recovered in clinical trials and where 5/6 dogs were successfully treated in the NSW Goonoo project field study. This is partly due to the fox bait PAPP dose being perhaps more marginal for a large dog and also because less antidote is likely to be needed to reverse the lower dose PAPP effects.

All registered vets are now being thoroughly briefed on these issues so that appropriate care is applied.



**5** It has been found that there are two forms of methylene blue dye. One is called methylene blue and is the antidote tested. The other is called "new

methylene blue". New MB is a closely related dye used for staining tissue sections, but has not been tested for use as a methaemoglobin antidote. Moreover, there is a third dye with a similar name called "methyl blue" that has a different structure. We raise this so that our readers are aware that there is potential for confusion.

**6** Methylene Blue Injection is the name of the antidote and it is only manufactured currently by PHEBRA in Sydney who already provide sterilised vials for human use. The APVMA have issued a permit to allow PHEBRA to relabel their human registered product so it can be used as an antidote. The IA-CRC is working with Phebra to seek full veterinary registration. Registration regulations mean that only registered vets can purchase and use this product to treat animals.

MB vials contain 5ml of 10mg/ml solution, so just one vial would approach the toxic threshold of 10mg/kg for a 5 kg dog. However, several vials may be needed to effectively treat a larger dog. Vets can purchase the vials from their normal veterinary medicines wholesaler or directly from PHEBRA. Retail cost of MB is uncertain but, with the need for qualified veterinary intervention and potential follow-up monitoring and use of several vials, a treatment may be several hundred dollars, especially if additional observations are needed.



Not actual vial



We feel that, given the initial publicity around the antidote and a widely held conception that it was cheap, readily available and effective, that it is necessary to better explain the strengths and weakness, now that we have a better understanding of the IA-CRC work and the implications from the testing results.

## Use restraints and muzzles:

The clear advice to all users, that is stated in the booklets, is that collars and name tags do not protect working dogs. It remains appropriate to use all precautions including restraints and muzzles to prevent against exposure of valuable dogs to PAPP baits.

**However, despite these caveats, it remains true that MB can be used to overcome the effects of PAPP and in this regard it does provide a measure of comfort compared with alternate toxins. This is not however a 'bullet proof' safety case, given the now known limitations, so we take this opportunity to again stress the normal precautions when using poison baits.**

## Low risk of secondary exposure:

One final point here is that there is no significant risk to any animals from secondary poisoning if a PAPP killed carcass is scavenged. This is because PAPP has only a short half-life in the affected animals. Also PAPP does not reach high levels in tissues, so a scavenger can simply not eat enough fast enough for the PAPP residues to give the acute dose required for a high risk.

## Scat Marker Beads

ACTA has individual plastic marker beads in both PAPP (yellow/orange beads) and 1080 baits (red beads) as an aid for vets presented with any non-target animal suspected of taking baits. This aids in correct treatment and also helps exclude baits if there has been a snake bite.

To report an adverse event associated with the use of Phebra methylene Blue for injection, please contact Poonam Kamboj Pharmacovigilance & Medical Information Manager

P: +61 (0)2 9420 9199 (ext 926)

F: +61 (0)2 9091 2342

E: [poonam.k@phebra.com](mailto:poonam.k@phebra.com)

E: [pharmacovigilance@phebra.com](mailto:pharmacovigilance@phebra.com)

E: [medical@phebra.com](mailto:medical@phebra.com)



Yellow/orange scat marker beads are incorporated into PAPP baits



Red scat marker beads are incorporated into 1080 baits

## Low direct risk to non target species

### ORAL LETHAL DOSE (LD50) VALUES OF PAPP

ADAPTED FROM FISHER ET AL. (2008)

SPECIES	METHOD OF ADMINISTRATION	LD50 MG/KG	REFERENCE
Dog (Canis familiaris)	Not reported	7.5	Coleman et al., 1960 reported from handbook of toxicology
Coyote (Canis latrans)	Cod liver oil	5.6	Savarie et al., 1983
Kit fox (Vulpes velox)	0.05% Carbopol 914	14	Savarie et al., 1983
Red fox (Vulpes vulpes)	DMSO* and sweetened condensed milk	25.2 (estimate from non-lethal model)	Marks et al., 2004
Cat (Felis libyca domestica)	0.05% Carbopol 914	5.6	Savarie et al., 1983
Bobcat (Lynx rufus)	0.05% Carbopol 914	10	Savarie et al., 1983
North American badger (Taxidea taxus)	0.05% Carbopol 914	100	Savarie et al., 1983
Raccoon (Procyon lotor)	0.05% Carbopol 914	142	Savarie et al., 1983
Striped skunk (Mephitis mephitis)	0.05% Carbopol 914	400	Savarie et al., 1983
Stoat (Mustela erminea)	PAPP-HCl monopropylene glycol	9.3	Fisher et al., 2005
Ferret (Mustela furo)	PAPP-HCl monopropylene glycol	15.52	Fisher and O'Connor, 2007
Guinea pig (female) (Cavellio porcinus)	DMSO solvent	1,020	Scawin et al., 1984
Mouse (albino)	Propylene glycol	223	Savarie et al., 1983
Mouse (female)	DMSO solvent	5,000	Scawin et al., 1984
Mouse (male) (Swiss Webster strain)	Propylene glycol	168	Pan et al., 1983
Rat (female) (Porton Wistar strain)	DMSO solvent	223	Scawin et al., 1984
Rat (male)	DMSO solvent	475	Scawin et al., 1984
Rat	Propylene glycol	177	Savarie et al., 1983
Rat (male) (Sprague-Dawley)	Propylene glycol	221	Pan et al., 1983
Golden eagle (Aquila chrysaetos)	Propylene glycol	50	Savarie et al., 1983
Coturnix quail (Coturnix coturnix)	Propylene glycol	316	Savarie et al., 1983
Starling (Sturnus vulgaris)	Propylene glycol	316	Savarie et al., 1983
Red-winged Blackbird (Agelaius phoeniceus)	Propylene glycol	133	Savarie et al., 1983
Black-billed Magpie (Pica pica)	Propylene glycol	178	Savarie et al., 1983
Common Crow (Corvus brachyrhynchos)	Propylene glycol	178	Savarie et al., 1983

Fisher et al. (2008) reviewed oral lethal dose (LD50) values for PAPP. The table above is adapted from this citation to demonstrate relative species sensitivities.

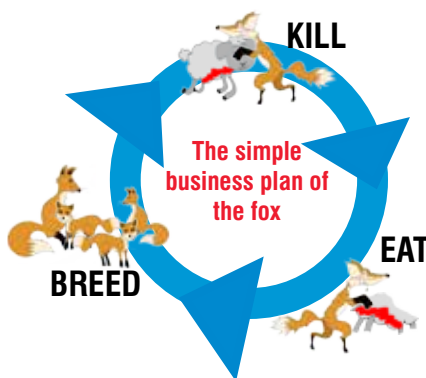
\*DMSO – Dimethylsulphoxide.

# PAPP bait use conditions can vary between states

ACTA believes in a 'nil tenure' approach, not only across property boundaries or land use types but also across state borders. The pests can't read maps, so it makes some sense to us if the rules for their control could be standardised on a national basis.

We tried many years ago to achieve a uniform wording on a fence warning sign (to help reduce print run costs) but even this has proven impossible to achieve. This is despite the existence of committees such as the Vertebrate Pest Committee (VPC) who should have been able to get this done for efficiency sake. In election years when we hear so much about the need to reduce overlapping legislation we can't even solve the simplest of things. This sort of thing delays progress and adds to cost with no beneficiaries, except the pests themselves.

As we have said before (ACTA news # 31), the pests have a simple and regulation-free operational plan as the diagram below explains.



Variation in distance restrictions are a special problem. We were recently queried on our FOXECUTE® and DOGABAIT booklets

that correctly specify the nationally approved distance of 150 metres from habitation. We have now realised that in SA this is still set, as for 1080, at 500m. The booklets also say to "refer to local state requirements", but the potential for confusion is obvious. What if someone in Victoria places a bait 150m from a SA house on the other side of the border. Is it legal or illegal? Who is right here? Perhaps both specifications are incorrect and we should adopt a standardised 250 metres nationally (or whatever).

***This should be able to be resolved by simply getting a few sensible people together over a beer! Our expectation is that there is painfully little objective data to justify the arbitrarily chosen, yet aggressively policed, constraints regardless.***

## The next steps

We are often asked if PAPP can be introduced into the ACTA CPE capsules. The simple answer is yes, especially for the fox dose of 400mg. Even so a slightly different formulation is needed to enable loading of the capsules in a cost efficient way and to an accurate fill. This work

is underway at ACTA but will take some time and expense to achieve registration.

In principle PAPP could also be used in dog capsules for the CPE but there is a constraint of the 1ml usable volume in the capsules. At present it is not possible to get 1000mg dog PAPP dose into these capsules. A wider capsule to solve this would

conflict with the thread requirements of the CPE device and bait head. Before we embark on expensive re-engineering some guidance from our readers as to the likely need for such a major device redesign is needed. In more remote areas we would expect that the current 6mg dose of 1080 in the ACTA CPE capsules remains the most appropriate approach.

## Access to FOXECUTE® and DOGABAIT delayed in some states

One might think that once a product is APVMA approved with a Nationally agreed label it is able to be sold, but in Australia this is not always so. Getting a truly National approach to pest management is a problem for this country! Despite states being involved with the national process via APVMA they retain the right to vary conditions of use locally we need to get amendments to state Standard Operating Procedures

(SOPs) before we can supply in each state. When we launched PIGOUT® baits many years ago, NSW was the prime efficacy reviewing state, but it still took more than 6 months after registration to update state regulations to allow LLS groups to purchase PIGOUT® in NSW. We now face similar delays with CPE's and PAPP.

It is now a year since the APVMA approved CPE 1080 capsules after an 18

month review, yet only SA and VIC have updated SOPs to enable users to have this tool.

The table below summarises the availability of PAPP baits as at July 2016 and 6 months after APVMA registration (with State involvement) in Jan 2016. No wonder Australia is falling behind in innovation when these simple matters cannot be progressed more quickly.

State	Access via:	Comment
NSW	LLS	Awaiting PAPP Pest Control Order being issued by NSW government
NT	Accredited Rural Merchants	Awaiting confirmation from NT government
QLD	Local Shire Council Accredited Rural Merchants (limited area)	Awaiting PAPP to be added to list of available chemicals by QLD Dept. of Health
SA	NRM Boards	Available now
TAS	Not available	No wild dogs and questionable need for fox control these days!
VIC	Accredited Rural Merchants	Available now
WA	Accredited Rural Merchants	Awaiting confirmation from WA government

ACTA hopes that those States/Territories where PAPP baits and CPE 1080 capsules are not yet available can amend their legislation/SOPs as soon as possible so that users can add these important tools to deal with foxes and wild dogs.



# Canid Pest Ejectors prove popular

## A choice of CPE lure heads now available from ACTA

We have tried to provide convenience with CPE project by making better designed bait head carriers and also improving the stability of dried meat lures. Initially we have focussed on dried kangaroo meat lure heads for this purpose but recently, in response to field requests, we have developed a second option made from venison.

The process of making a lure head is not simple as we start with quality cuts of meat that are dissected into large pieces for the drying process.

Only A-grade cuts provide a firm and consistent bait head lure.



The heads are chemically treated before drying and then cyrovac packed for extended shelf-life under cool conditions. As we do not keep large stocks of pre-prepared bait heads, we ask that any large requirements are anticipated a little in advance to enable our production team to source the meat and complete the processing to high standards required.

**CPE devices and capsules now in stock and available!**



Quality meat



Uniform chunks



Careful mounting



Thorough drying



Trim waste adds to costs

## New ways to set the CPE device

We have been concerned with the cost of the hand made setting pliers for the CPE's that we import from the USA.

To try to reduce this cost we have had cheaper setting pliers made in Malaysia, so the cost has been reduced by about 40%.

A local engineering firm has now come up with another setting approach.

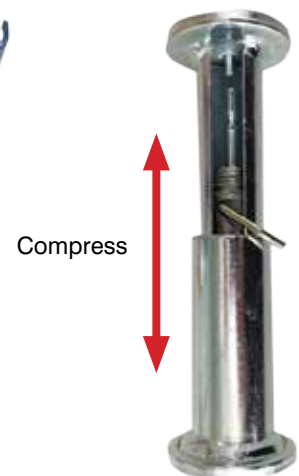
Their concentric tubes are easy to use and also get the cost down by about 40% from the original pliers option, so long as we order >500 at a time. So we now have a choice of options to set the CPE's.



Original USA sourced setting pliers



New Low cost setting pliers



New Aussie made concentric tube setting device

acta

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DOGGONE®, FOXOFF®, FOXECUTE® and DOGABAIT are restricted agricultural products available only from approved suppliers  
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## Excellence in Pest Animal Management