Government of South Australia
Department of Primary Industries and Regions

Our ref: CORP F2021/000131

CORPORATE SERVICES
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GPO Box 1671
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Tel 8429 0422
www.pir.sa.gov.au

23 April 2021

[redacted]

Via email: [redacted]

Dear [redacted]

Determination under the *Freedom of Information Act 1991*

I refer to your application made under the *Freedom of Information Act 1991* which was received by the Department of Primary Industries and Regions (PIRSA) on 18 March 2021, seeking access to the following:

> *"All documents relating to investigations or decisions by PIRSA officers authorised under the Agricultural and Veterinary Products (Control of Use) Act 2002 regarding a landholder whose mis-use of a restricted product (vertebrate poison sodium fluoroacetate) resulted in the deaths of 61 livestock animals in Bordertown, including but not limited to any correspondence with (to or from) the Minister for Primary Industries and the Limestone Coast Landscape Board."*

Accordingly, the following determination has been finalised.

I have located twelve documents that are captured within the scope of your request.

Determination 1

I have determined that access to the following documents is **granted in full**:

Doc No.	Description of document	No. of Pages
3a	Attachment to Doc 3 – Directions for use for "1080 Bait for the Control of Rabbits"	5
9a	Attachment to Doc 9 – Appendix H: Residues of 1080 in Animal Products for Human Consumption	7
9b	Attachment to Doc 9 – Media article dated 11/3/2021 re poison safety warning	1

Determination 2

I have determined that access to the following document is **granted in part**:

Doc No.	Description of document	No. of Pages
3	Email from D Stephenson (PIRSA) dated 28/1/2021 re suspected 1080 poisoning	2

The information removed from the above document is pursuant to Clause 12(1) of Schedule 1 of the Freedom of Information Act and Section 38 of the *Agricultural and Veterinary Products (Control of Use) Act 2002*.

Clause 12(1) of Schedule 1 of the Freedom of Information Act states:

> ***"12—Documents the subject of secrecy provisions***
> *(1) A document is an exempt document if it contains matter the disclosure of which would constitute an offence against an Act."*

Section 38 of the Agricultural and Veterinary Products (Control of Use) Act states:

> ***"Confidentiality -***
> *A person who is, or has been, engaged in work related to the administration or enforcement of this Act must not disclose confidential information obtained in, or in connection with, that administration or enforcement except –*
>
> *(a) for a purpose connected with the administration or enforcement of this Act, the Agvet Code of South Australia or a prescribed Act; or*
> *(b) to a law enforcement authority; or*
> *(c) as required by law; or*
> *(d) as authorised by the person to whom the duty of confidentiality is owed; or*
> *(e) as authorised by regulation.*
>
> *Maximum penalty: $10 000"*

The information was obtained by authorised officers of PIRSA's Biosecurity SA Division for the purpose of enforcing compliance with the Agricultural and Veterinary Products (Control of Use) Act.

Disclosure of this information would breach the agency's duties and obligation under Section 38 of the Agricultural and Veterinary Products (Control of Use) Act regarding disclosure of confidential information obtained, or in connection with, the administration or enforcement of that Act.

Accordingly, pursuant to Clause 12(1) of Schedule 1 of the Freedom of Information Act, the release of this information would constitute an offence against an Act.

Determination 3

I have determined that access to the following documents is **refused**:

Doc No.	Description of document	No. of Pages
1	PIRSA Conversation Record Form dated 28/1/2021	1
2	PIRSA Conversation Record Form dated 28/1/2021	1
4	PIRSA Conversation Record Form – Limestone Coast Landscape Board - dated 29/1/2021	1
5	Email from PIRSA officer to Landscape SA dated 29/1/2021 re suspected sheep poisoning	2
6	PIRSA Conversation Record Form – Vet Clinic - dated 5/2/2021	1
7	PIRSA Conversation Record Form dated 17/3/2021	1
8	Email thread between Australian Government Department of Agriculture, Water and the Environment and PIRSA officers dated 17/3/2021 re 1080 sheep poisoning and market access	2
9	Email thread between Australian Government Department of Agriculture, Water and the Environment and PIRSA officers dated 17/3/2021 re 1080 sheep poisoning and market access	3

Access to the above documents is refused pursuant to Clause 12(1) of Schedule 1 of the Freedom of Information Act and Section 38 of the *Agricultural and Veterinary Products (Control of Use) Act 2002*.

The information was obtained by authorised officers of PIRSA's Biosecurity SA Division for the purpose of enforcing compliance with the Agricultural and Veterinary Products (Control of Use) Act.

Disclosure of this information would breach the agency's duties and obligation under Section 38 of the Agricultural and Veterinary Products (Control of Use) Act regarding disclosure of confidential information obtained, or in connection with, the administration or enforcement of that Act.

Accordingly, pursuant to Clause 12(1) of Schedule 1 of the Freedom of Information Act, the release of this information would constitute an offence against an Act.

If you are dissatisfied with this determination, you are entitled to exercise your right of review and appeal as outlined in the attached documentation https://archives.sa.gov.au/finding-information/information-held-sa-government/making-freedom-information-application#Review, by completing the "FOI Application Form for Internal Review of a Determination" and returning the completed form to:

Freedom of Information Principal Officer
Department of Primary Industries and Regions
GPO Box 1671
ADELAIDE SA 5001

or via email PIRSA.FOI@sa.gov.au

In accordance with the requirements of Premier and Cabinet Circular PC045, details of your application, and the documents to which you are given access, will be published in PIRSA's disclosure log. A copy of PC045 can be found at http://dpc.sa.gov.au/__data/assets/pdf_file/0019/20818/PC045-Disclosure-Log-Policy.pdf

If you disagree with publication, please advise the undersigned in writing within fourteen calendar days from the date of this determination.

Should you require further information or clarification with respect to this matter, please contact Ms Lisa Farley, Freedom of Information and Privacy Officer on 8429 0422 or email PIRSA.FOI@sa.gov.au.

Yours sincerely

Michelle Griffiths
Accredited Freedom of Information Officer
DEPARTMENT OF PRIMARY INDUSTRIES AND REGIONS

DANGEROUS POISON

KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

1080 BAIT FOR THE CONTROL OF RABBITS

ACTIVE CONSTITUENT: 360 mg/kg SODIUM FLUOROACETATE (1080)

Oat based bait for the control of wild rabbits

IMPORTANT: READ THIS LEAFLET BEFORE USE

RESTRICTED CHEMICAL PRODUCT – ONLY TO BE SUPPLIED TO OR USED BY AN AUTHORISED PERSON.

THIS PRODUCT MUST BE USED IN ACCORDANCE WITH THE LABEL INSTRUCTIONS AND THE SOUTH AUSTRALIAN GOVERNMENT DOCUMENTS ENTITLED *"APPROVAL TO POSSESS 1080 BAIT"* AND *"DIRECTIONS FOR USE SOUTH AUSTRALIA"*.

Refer to
https://www.pir.sa.gov.au/biosecurity/weeds_and_pest_animals/animal_pests_in_south_australia/using_1080_and_papp_baits_in_south_australia
to access relevant documents.

DIRECTIONS FOR USE SOUTH AUSTRALIA

USE ONLY FOR THE CONTROL OF RABBITS

CONDITIONS OF BAIT SUPPLY

The *Controlled Substances (Poisons) Regulations,* 1996 allows land owners, over the age of 18 years, access to 1080 baits for use on their own property. Before being supplied bait by National Parks and Wildlife Service South Australia (NPWSSA) or a Landscape South Australia (LSA) Board, a land owner (or their agent nominated in writing to the Board) must sign an *Approval to Possess 1080 Bait* form on which they agree to only lay baits on the parcels of land detailed on the form and to comply with all other conditions specified on the form by NPWSSA or the LSA Board. A new approval form must be signed each time baits are received from the Board. Non-compliance with mandatory instructions (those containing the words "must"', "must not", "do not"' "not to be used", "use only") in these Directions for Use is an offence under the *Controlled Substance Act, 1984* and the *Agricultural and Veterinary Products (Control of Use) Act, 2002.* NPWSSA and LSA Board officers reserve the right to refuse supply of 1080 baits to persons who are suspected of not following the label or these Directions for Use.

RESTRAINTS

Do not apply bait to, or in, crops which are in mid to late developmental stages or if contamination of produce is likely to occur.

Bait must not be laid on properties of less than 5 hectares unless part of a group program with adjacent landholders coordinated by an officer approved by the Department of Health.

The bait is not suitable for broadcast applications and must not be applied aerially. Use of the bait is restricted in urban and some wildlife areas.

Bait should not be laid if rain is expected within 3 days.

MANAGEMENT OF PREPARED BAIT

Bait prepared by NPWSSA or a LSA Board must be placed directly into a sealable container of sufficient strength and impermeability to prevent leakage of its contents during handling and transport. This container must have the APVMA approved *1080 Bait for the Control of Rabbits* label affixed to it.

HOW TO LAY *1080 BAIT FOR THE CONTROL OF RABBITS*

Timing of baiting programs

Lay baits at times when rabbits are not breeding which is usually late summer/early autumn. During the breeding season, territorial behaviour of both adult and young rabbits can result in them not being exposed to the bait trail and if a significant number of rabbits are left behind, their numbers can rapidly rebuild.

Estimating rabbit numbers and their distribution

Before applying *1080 Bait for the Control of Rabbits*, gather information about rabbit numbers and where they are feeding by conducting spotlight counts along tracks or through paddocks where there are signs of rabbit activity. Maintain vehicle speed at around 10-15 km/hr and count rabbits seen while sweeping the spotlight over a 50 m strip on either side of the line of travel. Keep a record of the distance travelled. Counts averaging more than 10 rabbits per km of travel indicates a moderate to high population.

Free-feeding rabbits

Three unpoisoned free-feeds **must** be offered in the baiting area at intervals of at least 3 days to accustom rabbits to eat oats and help estimate the quantity of bait required. The oats should be good quality and not treated with chemicals that might reduced their palatability. They should be trailed in or placed adjacent to furrows encircling warrens and run through areas where rabbits feed. The length of trail and furrow required will depend on the density of active warrens and the number of rabbits present but as a general indication in moderate to high infestations, lay 25 km of trail per 100 ha of rabbit-infested country.

Lay free-feed oats at a rate of 4.2 kg per km of trail.

Laying bait

As far as is practicable, remove or cover any free-feed oats remaining 3 days after the third free-feed and lay *1080 Bait for the Control of Rabbits* in the same furrow. Lay the treated bait at a rate of 2.8 kg per km of trail. If rain delays application of treated bait by more than 2 days, lay a fourth free-feed before laying treated bait.

GENERAL INSTRUCTIONS

NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED BY APPROPRIATE LEGISLATION.

THIS PRODUCT IS NOT TO BE USED IN DOMESTIC OR HOME GARDEN SITUATIONS.

Neighbour notification

All neighbours whose land abuts any part of the sections of land described on the *Approval to Possess 1080 Bait* form **must** receive notification of the baiting at least 72 hrs before bait is laid. This notification includes all neighbours with land separated from the sections of land to be baited by roads or travelling stock routes. Notification can be verbal or written except where alternative communication arrangements have been made that meet State requirements and overall safety criteria.

The notification **must** advise:

- of the danger to livestock, pets and domestic dogs,
- that steps (eg. restraint or muzzling) need to be taken to ensure that dogs in particular do not gain access to 1080 baits or poisoned animals,
- the bait type, and
- the control program start and finish dates.

A record of the notifications **must** be kept for inspection for at least 2 years (see 'Record of Notifications' form at the end of these Directions). In the case of an absentee neighbour with no known postal address or phone contact, written notification **must** be placed in a weather-proof envelope, and secured in a prominent position near to the main entrance gate of the neighbour's property at least 7 days before baiting commences. If a voice message is left it **must** include a request that the recipient ring back to confirm notification has been received. Note the return call on the form which **must** be kept for at least 2 years.

Baiting **must** commence within 10 days of notification or else another 72 hrs notice of intent to lay bait is required advising of the revised particulars.

Neighbours **must** be notified each time a new *Approval to Possess 1080 Bait* is signed for a **new** baiting period.

Signage

Signage is compulsory for all lands where baiting occurs. Supplied warning signs **must** be put up immediately before 1080 poisoning operations commence on the property.

Signs **must** be placed conspicuously:

- at all commonly used property-boundary entrances,

- at property-boundaries bordering public roads to warn road-users that baits have been laid on adjacent land, and
- where baits are laid on roadsides, at each end of the baited section, and on all roads that intersect the baited section at a distance of not more than 400 metres from the intersection.

Signs must be maintained for 6 weeks after the authorised period of bait lay has expired or 4 weeks after all untaken baits have been picked up and disposed of. Signs must then be removed. The following details on the signs must be filled in or crossed out as applicable using a permanent marker:

Bait type: meat / grain / oat

Target animal: rabbit / fox / wild dog / pig

Situation: property

Control Program Dates: Start: dd / mm / yyyy Finish: dd / mm / yyyy

Distance Restrictions
Bait **must** be placed at least 150 m from dwellings (other than own dwelling) or public building, and 20 m from permanent or flowing water bodies, or as authorised by an officer approved by the Department of Health.

PRECAUTIONS

Protection of livestock, domestic pets and farm dogs
Remove livestock from areas to be baited prior to commencing a control program. Stock should not be re-admitted to the baited area after the program unless untaken baits have been recovered. If recovery of untaken baits is not feasible, cover them with soil or allow time for baits to weather away before re-admitting stock.

Steps (e.g. restraint, muzzling) need to be taken to ensure that domestic pets and farm dogs do not gain access to 1080 bait or poisoned animals.

Protection of wildlife, fish, crustacea and environment
Information on non-target animal distribution, conservation status, habitat preference, diet, tolerance to 1080, body weight and size of home range can be used to reduce poisoning risks posed by baiting programs.
This product may be toxic to some birds and other native wildlife. Baits should not be laid at times when, or in locations where, birds or other non-target wildlife are likely to be harmed by them.

Time baiting programs when non-target species are least active or least susceptible.

To the extent possible, untaken bait should be recovered before warning signs are removed at the end of a baiting program and be destroyed by burning or burial. If recovery of bait in the field is not feasible, bait should be covered by sufficient soil to prevent access by non-target animals.

To the extent possible, rabbit carcasses should be recovered during and for 14 days after a baiting program and be destroyed by burial or burning.

Do not feed baits to non-target animals including birds.

Do not contaminate dams, rivers, streams, waterways or drains with the product or used containers.

Any incidents where it is suspected that non-target animals may have been poisoned by 1080 should be reported to the Rural Chemical Program, Department of Primary Industries and Resources, South Australia.

STORAGE, TRANSPORT AND DISPOSAL

Safe storage is the responsibility of all persons who are supplied with 1080 products. Store baits in a secure facility away from children, animals, food, feedstuffs, seed and fertilisers at all times, except when required for use. It should be in a dry, cool, well-ventilated area out of direct sunlight. The product is only to be kept or stored in sealed, animal-resistant containers bearing the APVMA approved label as supplied by the manufacturer.

Unless approved by NPWSSA or a LSA Board, baits must not be stored after a baiting campaign is complete. All unused bait must be destroyed within 1 week of the end of the authorised period of bait lay as specified on the *Approval to Possess 1080* bait form. Destroy bait by burning or burial below 0.5 m in a specifically marked disposal pit set up for this purpose clear of waterways, desirable vegetation and tree roots.

Only authorised personnel can have access to baits. Bait must be transported and stored in such a way that only authorised personnel can access bait. Baits must only be transported in sealed appropriately labelled animal-resistant containers with sufficient packaging to ensure they are secure before handling.

Containers that have held product must not be used for any other purpose. Break, crush or puncture, and dispose of empty rinsed containers in a local authority landfill. If no landfill is available, bury the containers below 0.5 m in a disposal pit specifically marked as detailed above. Triple rinse before burying and bury rinsate with empty containers. Burning of empty containers can only be done in accordance with State legislation.

SAFETY DIRECTIONS

Very dangerous. Poisonous if swallowed. Do NOT induce vomiting. Seek immediate medical attention.

Harmful if absorbed by skin contact. When opening the container and handling 1080 Bait for the Control of Rabbits wear chemical impervious gloves.

It is usually not necessary to use a dust mask or respirator however, if the product is being used in dusty or confined conditions, use of a mask or respirator is advisable. For help in selecting suitable equipment, consult AS/NZS 1715.

Protective eyewear is not normally necessary when using this product. However, it is always prudent to use protective eyewear.

Wearing safety boots or solid footwear is advisable.

If product on skin, immediately wash area with soap and water. If clothing becomes contaminated with product, remove contaminated clothing immediately.

After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each days use wash gloves and contaminated clothing.

FIRST AID

Speed in treatment is essential. If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26. If skin contact occurs, remove contaminated clothing and wash skin thoroughly with soap and water. Remove from the contaminated area. Apply artificial respiration if not breathing but protect against self-contamination. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

MSDS: Refer to Material Safety Data Sheet available from supplier for further information.

For information on the supply and possession of 1080 bait, contact the Environmental Health Branch, Department of Health on (08) 8226 7117 or (08) 8226 7137.

For information or advice on suspected cases of misuse of *1080 Bait for the Control of Rabbits* or to report that non-target animals may have been poisoned by 1080, contact PIRSA Biosecurity-Rural Chemicals on (08) 8226 0528.

For information on rabbit control, contact NPWSSA or your local LSA Board in your local directory.

Your NPWSSA or LSA Board Contact:

INDEMNITY

PIRSA Biosecurity, National Parks and Wildlife Service South Australia and Landscape South Australia Boards and their employees will not accept responsibility for losses or damage arising from the supply of or use of 1080 Bait for the Control of Rabbits other than responsibility for the merchantable quality of the goods.

Invasive Species Unit, Biosecurity SA
Entry 4 Waite Road URRBRAE SA
PHONE: (08) 8303 9620

RECORD OF NOTIFICATION OF NEIGHBOURS BEFORE COMMENCEMENT OF RABBIT BAITING PROGRAM

(NOTE: THIS RECORD MUST BE COMPLETED AND KEPT FOR 2 YEARS)

Date	Time	Land owner contacted	Contact number	Comments (Also record here confirmation received of notification by voice message)	Leaflet*

* Tick box if Advisory Leaflet given to neighbour

Checklist of information that must be provided to neighbours:

Advise of danger to domestic dogs	
Advise of need to take precautions to protect pets & livestock	
Type of bait to be used	
Date baits to be laid	
Confirm receipt of voice message by return call	
Date baits will be picked up or covered with soil	

Appendix H: Residues of 1080 in Animal Products for Human Consumption

Contents

List of tables

Key points

Information on residues of 1080 in meat and tissue are sparse. The Agency used information available for sheep to assess the significance of residue levels.

The 1080 concentrations (based on those found after 2½ hours after a high acute dose) in sheep meat used for risk assessment were **0.05 mg 1080/kg for skeletal muscle** and **0.064 mg 1080/kg for offal (organ meats).**

No information on the concentration of 1080 in milk from sheep (or cows) after dosing animals was available, so a conservative estimate of the 1080 concentration in milk was based on the concentration in **blood plasma: 0.141 µg/g.**

H1 Introduction

The purpose of this appendix is to summarise the information available on residues of 1080 in tissues of animals exposed to it and subsequently eaten by humans or their companion animals.

H1.1 Types of animal

The Agency identified three main scenarios that may give rise to meat residues. These scenarios relate to different types of animal (or different situations).

- Farm animals (sheep, beef, goats etc) may accidentally get access to 1080-material (due to incorrect placement of baits outside the intended area or failure of a protection strategy for the animals, such as fencing).
- Feral animals, deer or pigs taken by hunters may have been poisoned (whether by intention or not as part of the 'by-kill').

- Feral animals, possums, rabbits, taken by hunters for human (or companion animal consumption) may have been sub-lethally poisoned as part of the intended target of the operation.

The distinction between the second and third points relates primarily to the animal species involved.

H1.2 Tissues

Particular attention was given to the following tissues of these animals as these are most likely to be the tissues used for human consumption:

- Skeletal muscle (red meat).
- Organ meats, primarily liver, kidney.
- In the case of farmed dairy animals, milk and dairy product contamination was also considered.

The most relevant information on 1080 residues in meat found was the study by Eason et al (1994). The study established the half-lives of 1080 in sheep (mean 10.8 hours, range 6.6–13.3 hours) and goats (3.9 hours or 6.9 hours). For a fuller discussion of the report see Appendix B. The half-life of 1080 in sheep was found to be substantially longer than in goats, so the tissue residues are likely to be higher in sheep. Therefore, it is appropriate to concentrate on the sheep meat residues.

After exposure of three sheep to a single dose of at 0.1 mg/kg bw, various tissues were analysed for 1080 at two time points, 2.5 hours and 96 days (4 days). The results are reported in Table H1. Serum levels were measured at a larger number of time points as this could be done by taking of a blood sample. Those data were used for determination of the elimination half-life, discussed above.

Table H1: Mean concentrations (ranges) in plasma and tissues in sheep

	Concentration (ranges) at stated time (µg/g)	
Tissue	2.5 hours	96 hours (4 days)
Plasma	0.098 (0.033–0.141)*	0.002
Kidney	0.057 (0.046–0.064)*	0.002
Heart	0.052	0.003
Muscle	0.042 (0.038–0.050)*	0.002
Spleen	0.026	0.003
Liver	0.021 (0.011–0.039)*	0.000

Note

* Results of the same study are also published in Eason et al (1993). The paper includes the range of tissue concentrations in some of the tissues, as set out in the table.

The values provided were mean values, but the ranges provided in the earlier paper are useful. For the purpose of risk assessment, the Agency considered it is preferable to use the highest values from these ranges so as to reflect the 'worst case'. The reason for this was that only three animals

were used in the study, and there appeared to be considerable variability in the half-life in different animals.

These animals were given a sub-lethal dose of 0.1 mg 1080/kg bw which may be compared to the estimated LD_{50} in sheep of 0.4 mg/kg bw (O'Connor et al 1999). The concentrations in parts per million (wet weight) are assumed to be relevant to use of meat from slaughtered animals. This assumes that residues do not decline significantly after the animal has died, before or after refrigeration. (Questions have been raised on the basis of slower breakdown of residues under cooler conditions in the field (Weavers 2003) but since the assumption made is that no breakdown has occurred, the Agency considers his criticism is unjustified). Also, it is assumed that if any of the poison remained in the stomach at the time the animal was slaughtered, the absorption and distribution of this material is unlikely to be significant, due to the lack of blood flow.

The finding most relevant to the consumption of animal meat by humans is the skeletal muscle value, but use of organ meats such as liver and kidney for human food is a possibility. Therefore, the tissue concentration in kidney (which appears to have the highest residue) may possibly be relevant also.

It seems appropriate to take the concentration at 2.5 hours for the top of the concentration ranges to give the worst case. This gives 0.05 mg/kg for muscle and 0.064 mg/kg for kidney. For the purposes of calculation the Agency rounded up the latter value to 0.07 mg/kg as the likely highest meat concentration for sheep based on the study.

The intention is to consider the risk presented by the highest meat concentration likely to be encountered. The Agency considered the dose used in these sheep is close enough to the LD_{50} value that the meat residues are as high as those likely to be encountered (in sheep at least).

Proposed maximum meat residue, for muscle and organ meat for the purposes of human risk assessment are: **0.05 mg 1080/kg for skeletal muscle and 0.064 mg 1080/kg for offal (organ meats) (based on the kidney).**

Some factors affecting the relevance of these findings for other species are discussed below.

H2 Discussion of matters relevant to tissue residues

H2.1 Milk

The Agency notes that is possible for milking diary animals to be exposed to 1080 due to human error. No information was available to the Agency relating to residue of 1080 in milk from lactating cows. However, one study has been reported (application H-A26) from residues in lactating ewes (Eason et al 2002b, cited in the application). The Agency did not have access to the original report. According to the application, after an

unspecified dose of 1080 containing pellets to ewes in different exposure groups 1080 was just detectable in the milk of the higher dose animals at 72 hours, with an estimated residue of 0.0005 µg/ml (this is 0.0005 mg/l). The Agency considered that testing at an earlier time period would have been appropriate, given that the elimination half-life of 1080 in sheep has been reported to be mean 10.8 hours, range 6.6–13.3 hours (see above).

Since 1080 is water soluble, the Agency considered that as a worst case scenario, the 1080 concentration in the animal's milk could be the same as that in their blood plasma. (This is likely to be a very conservative assumption.) Using the data for the sheep listed above (no data are available for cows); this would suggests a maximum 1080 residue in milk of 0.141 µg/g. This is the highest plasma concentration from the range at 2.5 hours. (Clearly this worst case estimate is far higher than the barely detectable residue in the sheep reported by Eason (2002b).)

H2.2 Species

Consideration of the relevance of the above value to other species is important. The Agency did not find data on tissue residues in species which would be termed the main human meat sources, such as cattle, pigs, and deer.

The Agency considered how relevant the above figure to other species. If the species are less sensitive to 1080 (has a higher LD_{50} value) then it is likely that the animal could have higher residues in their tissues than sheep without reaching a lethal dose. Table H2 lists some of the most relevant values for human meat sources. (These values are taken from Appendix B so references are not provided here.)

Table H2: LD_{50} in human meat sources of relevance*

Species	LD_{50}
Sheep	0.4 mg/kg bw
Goat	0.6 mg/kg bw
Cattle	0.4 (cows), 0 22 (calves) (Robinson 1970)
Horse[1]	0.32-0.50 mg/kg bw (see Appendix C)
Deer	0.45 mg/kg bw (see Appendix C)
Rabbits (adult/1.5 kg)	0.34-0.50 (see Appendix C)
Possum (*Trichosurus vulpecula*)*	16.8 mg/kg bw at 10.5°C and 41.2 mg/kg bw at 23.5°C

Note

* See Appendix C for references for these data for terrestrial vertebrates.

Note that the values for cooler temperatures rather than under laboratory conditions are most relevant to the issue under consideration, so the value in possums, in particular, is far higher than laboratory values.

Ideally, toxicokinetic parameters would also be considered, but data are not generally available other than in laboratory rodents (except for the sheep and goat values above).

There are no data for deer or pig which may also be poisoned and then taken, but the assumption is that the residues in sheep give an indication of the likely concentration values that may be encountered.

For animals that have greater tolerance the tissue concentrations may be higher, perhaps this is most significant for possums. Data for possum are of particular interest.

Eason et al (1993) reports the elimination half-life ($t_{½}$) in possum as 9.1 hours range (5.8–13.6) based on studies in six possums. The toxicokinetic parameters for possum (elimination half-life, (maximum serum concentrations and time of maximum concentration) very similar to those for sheep, given the same initial dose of 0.1 mg/kg bw. Unfortunately, no possum tissue analyses were reported in this study. The Agency was unable to locate reside result in possum tissues from other sources. Possums are less sensitive to 1080 than sheep, they have high LD_{50} values, so as noted above, it is likely that possums are able to sustain higher residue levels without lethality, than would be the case for sheep.

H2.3 Metabolites

The Agency considered also whether metabolites of 1080 could be present at a significant concentration in the carcass of sub-lethally poisoned animals.

The concentrations found are such a small proportion of the 1080 tissue concentrations that no detailed consideration is considered appropriate. The small proportion of 1080 converted to fluorocitrate has been commented on in Appendix C. Eason et al 1994 claim only small quantities produced (as little as 2.5% of the 1080 dose converted to fluorocitrate).

The Agency contends that consideration of fluorocitrate or of other metabolites is not necessary and that consideration of the unchanged 1080 is what requires health risk assessment.

H2.4 Latency

The latency period associated with 1080 poisoning is well known. Even in fatally poisoned animal the latency period can be as long as 29 hours (Robison 1970). Therefore, for a sub-lethal dose, it must be possible for the animal may be asymptomatic, for a substantial period even though a significant dose has been administered.

Thus, even after a toxic dose of 1080 has been administered, it is theoretically possible for a person to obtain the animal during the latency period and consider the animal to be in good condition, before toxic symptoms have occurred.

The Agency considers that this scenario needs to be considered given the striking descriptions of animals, apparently well one minute, but showing

serious signs of toxicity the next (Robison 1970). It is also possible a considerable time after 1080 exposure.

H2.5 Secondary poisoning of animals (particularly dogs)

Secondary poisoning of dogs is a well known problem and was raised in many references and submissions. This is somewhat peripheral to the purpose of this appendix, but nevertheless related to it.

The issues associated with dog poisoning are rather difference from those with human exposure to meat residues. There are a number of aspects making secondary poisoning of dog more difficult to prevent.

- Dogs a likely to consume meat from fatally poisoned (dead) animals.
- Dogs may get to the carcass before their owner, and due to the high sensitivity of dogs to 1080 may get a fatal dose quite quickly.
- Dogs are likely to consume viscera including stomach contents, which may include 1080 baits.

Nevertheless, in respect to collection of meat for pet food outlets, the issues are quite similar to those applying to feral meat for human consumption, as in this case the meat is being selected as suitable for consumption, and in

One reference (Frick and Boebel 1946) suggested that heart tissue carried particularly high 1080 residues, but this was not clearly demonstrated, but assumed on the basis that one dog died after consumption of 1080 residues in heart tissue from a poisoned horse, while dogs consuming, muscle or liver were not. Since there was no indication of how much of each tissue the dogs had consumed no firm conclusion was possible.

H3 New Zealand Food Safety Authority control relating to feral meat residues

The New Zealand Food Safety Authority administers requirements relating to meat products and specific requirements apply to taking feral meat for human consumption.

Of greatest significance in relation to the control of 1080 residues is the advice relating to the withholding times for taking of meat from 1080 application areas.

> Don't take wild or game estate animals from an area where **1080** has been laid until
>
> - **four months** after the operation has ended, or
> - **two months** after the operation has ended ***and*** **after 100 mm of rain** has fallen.

For other vertebrate poisons (which may be of interest for the non-1080 scenario), the equivalent requirements are:

Cyanide – no restriction

Phosphorus – 4 weeks

Warfarin/Pindone – wait 2 months

Other anti coagulants – wait 3 years.

(ie anticoagulants other than warfarin or pindone)"

H3.1 Requirements for the taking of possum meat for human consumption

The extent to which possum meat is used for human food is unclear, but the taking of possum for human food is referred to by the New Zealand Food Safety Authority on its website: http://www.nzfsa.govt.nz/animalproducts/subject/hunting-wild-animals/hunting-poison-free.htm

The Agency notes from the wording, that in the case of possums, the animals must be supplied **live** to premises for processing, while other feral animals such as deer, chamois etc, can be shot and the carcasses brought in.

> Under the present system, these animals may be supplied live (possums) or hunted and supplied to the premises that process these wild or game estate animal carcasses into meat for human consumption. These premises are **primary processors**.

The Agency considers that this substantially reduces the likelihood of poison residues being present, but notes this requirement may also be a safeguard to ensure the meat is fresh. The Agency is of the view that the likelihood of exposure to contaminated possum meat is greatly reduced since live animals are likely to be identified as unsuitable for human consumption before slaughter, if they had been poisoned by 1080 prior to being captured.

Note that irrespective of the Agency conclusion that residue levels may not be of toxicological significance the New Zealand Food Safety Authority policy is that **"Any meat that contains poison residues is not considered by the government to be safe and so is not acceptable".**

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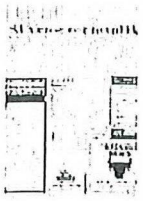
SECTION: GENERAL NEWS ARTICLE TYPE: NEWS ITEM AUDIENCE : 6,000 PAGE: 15
PRINTED SIZE: 192.00cm² REGION: SA MARKET: Australia ASR: AUD 683 WORDS: 283
ITEM ID: 1411450688



11 MAR, 2021
Farm accident triggers poison safety warning

SE Voice

Farm accident triggers poison safety warning

Fox bait kills dozens of sheep

Landholders are being reminded to ensure 1080 bait is stored and disposed of correctly following a recent incident near Bordertown.

Recently 61 sheep were poisoned by 1080 bait north of Bordertown.

The poisoning is suspected to have occurred when the bait had not been disposed of correctly and left in a drum on the property.

The sheep then knocked over the drum and consumed the bait.

Department of Primary Industries and Regions (PIRSA) Rural Chemical Operations Manager Michael McManus said that non-compliance when storing 1080 baits was an offence under the Agricultural and Veterinary Products (Control of Use) Act 2002.

"Improper disposal of disused bait can result in a substantial economic and animal welfare impact, as unfortunately is the case with this recent incident at Bordertown," he said.

"Landowners need to remember under the Directions for Use of 1080 bait, it clearly states the bait must be securely stored when not in use.

"It also must be properly disposed within one week of completing any baiting campaign.

"Livestock or animal owners should contact their vet immediately if they suspect any poisoning with their stock."

Limestone Coast Landscape Board Team Leader Kym Haebich said while the situation was very unfortunate, he reiterated that "now is the perfect time to start rabbit control programs".

"Our landscape officers can assist landholders to control rabbits by providing information, best-practise advice and integrated control services including bait and equipment hire," he said.

Mr Haebich said landholders should contact their local landscape officer through the Limestone Coast Landscape SA centres at Mount Gambier or Keith.

Further information on Poison Baits in South Australia and Directions for Use can be found at www.pirsa.sa.gov.au.

Farley, Lisa (PIRSA)

From: Stephenson, David (PIRSA)
Sent: Thursday, 28 January 2021 4:19 PM
To: [redacted]
Subject: Suspected 1080 Poisoning, [redacted]
Attachments: 1080-bait-directions-for-use-rabbit-control.pdf

Hi [redacted]

You rang me this morning about the apparent poisoning of your sheep at [redacted].

Based on some old data I have about the toxicity of 1080 to various species, about 1.6 kg of 1080-treated oats is sufficient to be a lethal dose to a 38 kg sheep.

[redacted]

Regional Landscape SA (LSA) Boards supply 1080-treated oats for rabbit control. The Limestone Coast LSA Board officer responsible for the Senior area is Neville Staude (ph 8755 1620, mobile 0417 859 080, email neville.staude@sa.gov.au). Neville should be able to tell you whether the Board has supplied 1080 oats for use at [redacted]. Primary Industries & Regions does not have that information.

I have attached the Directions for Use of 1080 Rabbit Bait. The "Storage, Transport and Disposal" section states the following:
Unless approved by NPWSSA or a LSA Board, baits must not be stored after a baiting campaign is complete. All unused bait must be destroyed within 1 week of the end of the authorised period of bait lay as specified on the Approval to Possess 1080 bait form. Destroy bait by burning or burial below 0.5 m in a specifically marked disposal pit set up for this purpose clear of waterways, desirable vegetation and tree roots.

The use of the word "must" defines these statements as **mandatory instructions** under the *Agricultural and Veterinary Products (Control of Use) Act.* Contravention of these instructions is an offence under the Act. The only compliance option available under the legislation is prosecution.

Dept of Primary Industries & Regions is willing to assist you with inquiries about how the 1080 oats came to be on the property. [redacted]

Nevertheless, please contact me if you think that Primary Industries & Regions can be of further assistance. You are welcome to send further details about the situation (photos, vet reports, etc) for information.

Regards,

David Stephenson | Senior Compliance Officer
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