



Department of  
Primary Industries and  
Regional Development

# Journal of the Department of Agriculture, Western Australia, Series 4

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Volume 5  
Number 1 *January, 1964*

Article 5

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1-1-1964

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C D. Gooding

L. A. Harrison

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### Recommended Citation

Gooding, C D. and Harrison, L. A. (1964) "One shot baiting," *Journal of the Department of Agriculture, Western Australia, Series 4*: Vol. 5: No. 1, Article 5.

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# "ONE-SHOT" BAITING – how it works

By C. D. GOODING and L. A. HARRISON

**The originators of one-shot baiting describe this new technique and explain how it should be used for best results on the farm.**

THE Agriculture Protection Board introduced the first of its contract poisoning schemes in 1955 in the lower South-West when three units undertook the first "1080" poisoning for farmers in Western Australia.

The service met with immediate success, and in the following year 14 units were employed. These were all two-man units being operated by a driver and a vermin control officer. The following year one-man units were introduced and eventually up to 45 operators were employed on rabbit poisoning work.

## **Inspector-Operator Scheme**

Although these exerted a considerable influence on rabbit numbers there were several obvious weaknesses in the system. The local full-time vermin control officer inspected a property, became conversant with its terrain and infestation then booked the property for rabbit poisoning later on by a casual operator who had no local knowledge of the property.

Out of this obvious weakness arose the inspector-operator scheme now employed over much of the State (in this scheme the same man does both jobs) and with it one-shot baiting.

This article is confined to the baiting technique. The inspector-operator scheme will be discussed in a later article.

In the original baiting technique, started in 1955, the farmer cut the furrow and laid the three "free" feeds and the A.P.B.

operator only had to follow the furrow laying 1080 impregnated bait.

The whole technique of poisoning with 1080 was evolved by carefully applied observed and recorded trials based on intensive studies and detailed scientific research. The result was a precise formula which when applied accurately and exactly in accordance with directions destroyed a very high proportion of the rabbit population. Any deviation from the standard procedure reduced the effectiveness of the poisoning technique.

In the first two years of 1080 rabbit poisoning in Western Australia it was possible to persuade many farmers to use the expert knowledge and new found weapon with enthusiasm. The level of farmer efficiency and persistency was apparent, and, while not as high as that of fully trained experts, was much better than attained previously.

However, as seems to happen so often in pest control work, everyone who had used 1080 became an "expert." Before long, ignoring the advice of properly trained and experienced experts, the all too familiar short cuts and "improvements" were introduced with the usual disastrous results. Enthusiasm waned and efficiency and persistency fell until the position was

barely being held and in some places it was not kept up at all.

The two features which had been so clearly and convincingly demonstrated as the most vital keys to success in 1080 poisoning—trial placement and free feeding—were the most neglected and abused.

It then became apparent that if a high level of poisoning efficiency was to be regained, it would be necessary to find a method in which the farmer did not have to cut the furrow and lay the free feeds.

It was obviously not sound practice to expect farmers who are relatively unskilled in vermin control, to carry out what was clearly a job for a trained operator.

### ONE-SHOT BAITING

After much research work extending from 1958, and still continuing, a suitable method was devised and launched in 1960. This is what has become known throughout Western Australia as one-shot baiting.

We do not propose to go into such details as bait preference tests, vacuum impregnation preparation or bait ratios, but only to discuss facts and details as they affect the farmer. Also to explain why we do some of the things which, to a farmer may appear unnecessary or wasteful. The three most important factors are:—

- (1) Furrow placement
- (2) Rate of application
- (3) Stock dangers.

#### Furrow Placement

Furrow placement is the first and most important of these. For many years we have thought, and advised farmers that to place a furrow which rabbits must cross on their way to feed was all that was needed. We thought that if rabbits crossed it they would automatically stop, look into the furrow, find bait and start eating. This we felt was going to give the best results.

It was well known that furrows put too close to warrens or to bush did not always kill adult rabbits. This matter was given little consideration except that furrows were taken further out from the edge. Under the old poisoning system or "conventional baiting," this method worked most times because we had a relatively long (four days) free feeding period so

that timid rabbits would be attracted by the sight of their more venturesome colleagues feeding from the furrow. The disadvantages of poor furrow placement were often masked, and the longer the free feeding the greater the masking effect.

In one-shot baiting the feeding period is still important but seldom exceeds one or two nights. As a result, we must not depend on one rabbit leading the "late comers" onto the furrow, but instead we must place the furrow in such a position that each rabbit will find it without any help from his "friends."

Obviously the only place for the furrows is in the feeding areas. According to scientific workers each rabbit has its own feeding area or territory. This territory it guards and defends against all comers. (This is more pronounced in the breeding season). In his area each rabbit—or group of rabbits—is supreme and no others are allowed to enter. If they do, they are quickly chased back across the boundary to their own domain.

It stands to reason that at least part of the furrow must be placed in each rabbit's territory if the poisoning is to be successful. This is much more important now that improved pastures and lower rabbit numbers have resulted in a more readily available food supply. Because of this, one would expect territories to be reduced in size. While this is true generally, there are numerous cases where this is not so. However, it is quite clear that in one-shot baiting where there is not a long free feeding period to entice rabbits to change their feeding habits and feeding areas, it is essential that the bait be taken right into each rabbit's feeding area. It therefore becomes necessary to lay bait in a lot more places than some farmers think it is needed.

It should always be remembered that the vermin control officer is skilled in this job and if he suggests laying a furrow where it looks unwarranted, this is probably because his trained eye has discerned a feeding area not apparent to the farmer.

Both the vermin control officer and the farmer have the same objective—to kill the rabbits—and in matters such as these the farmer should be guided by what the skilled officer advises.

## Rate of Application

When one-shot bait was first contemplated, the research section of the A.P.B. calculated that to get a result comparable with the conventional baiting, an application rate of about 30 lb. per mile would be needed. Most of this was to be made up of free feed and only a small portion—about one per cent.—would need to be poisoned. It must be remembered that although free feeding is reduced, it is not eliminated and still plays an important role. In fact, it can be said that all one-shot baiting consists of is a combination of the free feeding and baiting programmes with a corresponding saving in labour.

Research workers who have been on the job since the early days of 1980 poisoning know that the conventional procedure took four or five days. In the free feeding period the man doing the work got to know fairly accurately where bait was being eaten and in what quantity. In other words, when it came to laying the poison he knew exactly how much bait to lay in each locality and could vary it as he went along. It has been proved conclusively, both in Western Australia and by C.S.I.R.O. in N.S.W. that people, including the experts, cannot accurately assess the number of rabbits feeding on a particular spot simply by inspections. This is an established fact, and means that our men cannot hope to be in a position to vary the rate of application from spot to spot without making mistakes.

Mistakes resulting in too much bait being laid are not really important—it only means a little more to cover up—but mistakes of under-laying are disastrous. When insufficient bait is laid rabbits coming onto an empty furrow have no access to poison and so cannot be poisoned. This would not really be important if the operator could go back and re-bait the sections which had been cleaned out—but this of course would result in greatly increased costs and much less area covered.

This problem has been present ever since research on one-shot baiting started and much work has been devoted to trying to work out an acceptable solution.

After analysing the results of hundreds of field tests, it was decided that the

following rates were the minimum which should be laid in each area:—

**Wheatbelt areas, 16 lb. per mile;  
heavier rainfall areas, 24 lb. per mile.  
(These rates represent about one  
poisoned grain every 3 ft. 6 in. and  
2 ft. 6 in. respectively.)**

The dividing line has been drawn roughly to correspond with the 25 in. average annual rainfall line. In shire districts to the west and south, rabbits should be treated with not less than 24 lb. per mile.

The shires in this region are:

Gingin, Chittering, Swan, Wanneroo, Mundaring, Darling Range, Armadale-Kelmscott, Cockburn, Rockingham, Serpentine-Jarrahdale, Murray, Mandurah, Waroona, Harvey, Wandering, Marradong, Williams, West Arthur, Collie, Boyup Brook, Kojonup, Dardanup, Preston, Balingup, Greenbushes, Bridgetown, Manjimup, Bunbury, Capel, Busselton, Augusta-Margaret River, Denmark, Albany, Mount Barker and Cranbrook.

In all other areas of the State, baiting should be carried out at 16 lb. per mile.

Remember that it is impossible to assess a rabbit population accurately no matter how light it seems to be. Therefore, bait must be laid at a relatively high rate and never less than the rates given here.

When they cover in the uneaten poison farmers are often disappointed to see a lot of oats left in the furrow and they think that the kill has been poor.

Mostly, however, less than 25 per cent. of the bait will be eaten if the furrow has been correctly laid and at the right rate. This uneaten bait should not be considered wastage but looked on as insurance.

These recommended rates are based on five years of research testing from Dongara to Albany and must be strictly adhered to for the best overall control.

## Stock Hazards

These rates of application are often criticised by farmers, not from the wastage angle, but from the increased dangers to stock.

The position regarding the hazard to stock is:—

At 24 lb. per mile, this is equivalent to one poisoned grain every 2 ft. 6 in. or it

means that a 110 lb. liveweight sheep would need to entirely clean out 12 to 15 feet of trail to get a lethal dose. If it can only clean up 50 per cent. of the grain this figure then becomes 24 to 30 feet of trail and sheep can do this, as one farmer who lost several sheep can testify. There are also known cases of cattle eating enough one-shot poison to kill them.

In all cases of stock losses, the farmer had not covered the trail, or not covered it satisfactorily. If the recommended procedures are followed and furrows covered, there is no danger to stock. Unless this is done, sooner or later stock will be lost.

Many farmers think that because they did not lose stock with conventional baiting that they will not lose any when one-shot baiting is used. This is not so. At 24 lb. per mile there is just twice as much poison laid as there was with conventional baiting. This naturally means a greater danger to livestock. Research is under way at present to reduce this amount of poison and lessen the danger.

One-shot bait is coated with polyvinyl acetate (P.V.A.) plastic for two reasons. First, to prevent poison brushing off and contaminating the free feed, and second, to give a small measure of protection against light showers of rain. Because of the manufacturing process, the treated oats will not germinate—but the free feed oats will and do so after a reasonable amount of rain. Once this has occurred, the whole furrow will be unattractive to stock and the chances of poisoning them almost eliminated. Therefore, to take advantage of bait deterioration before returning stock, farmers should wait until the free feed has germinated. If stock are returned before this, then the furrow should be covered.

### IN BRIEF

One-shot baiting is a cheap, reliable and easy to apply method of baiting rabbits.

To get the best results it needs more skill than was required previously with conventional baiting. This could be the reason why one-shot baiting is so much better than conventional baiting.

The placement and siting of furrows is of major importance and requires a great

amount of experience. Also, it is most important that bait be laid at the recommended rate, often the rate may seem excessive but it should not be reduced.

The danger of poisoning stock will not be increased by using one-shot baiting if the standard recommendations for covering up or weathering are followed. If these are not followed, the hazard is at least double that encountered with conventional bait.



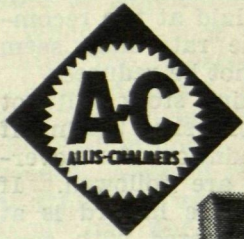
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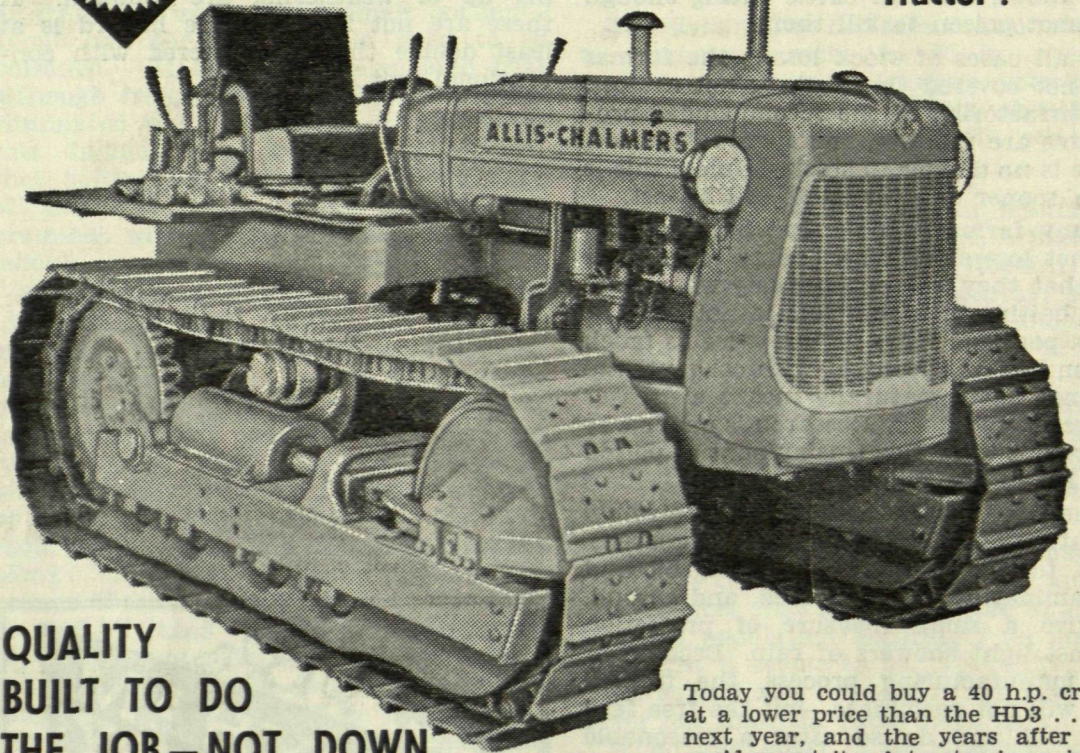
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