



Title	Controlling badger movement onto farms with electrified wire fencing
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Publication date	1996-07
Publication information	Haahesy, Tom. "Controlling Badger Movement onto Farms with Electrified Wire Fencing." University College Dublin. Centre for Veterinary Epidemiology and Risk Analysis, July 1996.
Series	Selected Papers, 1995
Publisher	University College Dublin. Centre for Veterinary Epidemiology and Risk Analysis
Item record/more information	http://hdl.handle.net/10197/8977

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Controlling Badger Movement onto Farms by Means of Electrified Wire Fencing

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Background

The use of electrified wire fencing to control badger movement has been reported previously by (Hahey *et al*, 1994). This paper presents some points on electrified wire fencing based on the experience of a number of herd owners who have erected this type of fencing around their farms to prevent access to badgers. These farmers have relatively large dairy herds; however, interest in this type of fencing has also been expressed by farmers with valuable pedigree herds in areas with a history of tuberculosis in cattle.

Electrified, high tensile, sheep wire netting (32" height) is working effectively, while the use of five individual strands of wire is not as satisfactory and is not recommended for this purpose. Other fence types which are not recommended to control badger movement include (i) 21" high tensile, sheep wire due to the relatively large spaces between wires, and (ii) wire fences which are not electrified, as badgers are likely to burrow underneath.

Recently, one manufacturer has produced welded mesh wire fencing (not electrified) designed to control badger movement. It is intended primarily to reduce badger mortality on motorways by preventing them gaining access to these areas. The manufacturers recommend that the base of this fence be sunken into the ground for a depth of twelve inches. The estimated cost of this fence including materials and labour is approximately IR£6.00 per metre length,

including V.A.T. which would be likely to rule it out for farm use in most cases.

Guidelines for erecting and maintaining electrified high tensile sheep wire netting to control badger movement.

The length of a farm boundary is influenced by:

- (i) the area of the farm;
- (ii) the degree of fragmentation, as indicated by the examples in Table 1. In general, a farm which is fragmented has a considerably longer boundary fence than a similar sized farm in one unit;
- (iii) the shape of the farm, e.g. a long narrow farm has a longer perimeter than a similar size farm with a more regular shape.

The evenness of the soil surface around a farm boundary can influence the cost of fencing. In some cases, it may be necessary to level the ground in advance, to ensure a uniform space between the bottom wire strand and the ground.

It is necessary to erect a badger fence around the entire farm boundary when undertaking this work. When only part of a farm boundary is fenced, it is likely that badgers may travel along the farm boundary until the electrified fence ends, and then gain entry to the farm at that point.

The high tensile wire netting requires good tension and a maximum space of 2" between

the bottom strand and the ground. It is important that the wire does not make contact with the soil, in order to avoid loss of current due to earthing. It may be necessary to space fencing stakes more closely than the normal 4 - 5 metre intervals, to ensure that the bottom strand is uniformly close to the ground in uneven ground. On one farm, the soil along parts of the fence line contracted during the dry summer in 1995 and resulted in an increase of the space between the bottom wire strand and the ground. This was corrected by placing short stakes along the fence to hold the wire closer to the ground. The ground is more likely to subside under a fence which is erected in wet soil conditions.

A voltage of at least 5,000 volts in the fence is recommended. This may require a relatively large electric fence unit. On some farms, two electric fence units are used, each serving one half of the boundary fence. A good earthing system is also required for an effective fence. Voltage readings up to 7,000 volts were recorded on one farm in 1995.

Maintenance of electric fencing is essential to prevent a loss of voltage due to earthing. Some examples of essential fence maintenance are listed below.

1. Control of foliage growth along the fence line, by spraying with herbicides approximately twice a year is necessary. It is advisable to spray an extra wide strip (2 feet wide) along the inside of the fence in fields closed for silage. This prevents long grass, which may lodge, making contact with the electric fence.
2. In the autumn, falling leaves may accumulate on the ground along the base of the fence, causing it to earth. The removal of leaves may be required in order to maintain adequate voltage in the fence.

3. The removal of fallen branches from fences in stormy weather.
4. The occasional replacement of broken insulators which hold wire onto fencing posts. When insulators break, the wire may make contact with fencing posts or the ground, resulting in a loss of voltage.
5. A regular check with a voltage meter helps identify a drop in current in an electric fence at an early stage.

Fencing a farm boundary with electrified, high tensile, sheep wire (32" height) involves:

- (a) a considerable financial investment, as contractors charge approximately £3.75 per metre length, plus the cost of an electric fencer unit at £200 - £400, and
- (b) a commitment to maintain the fence to ensure an adequate voltage.

The cost of electrified sheep fencing as a barrier to badgers is likely to confine its use to herd owners with larger dairy herds and/or valuable pedigree herds. However, when this type of fencing is properly erected and maintained, it offers an option to herd owners who consider that infected badgers present a threat to the health of their herds.

Reference

Haheesy, T., Sleeman, P. and Twomey, N. (1994).

The use of wire fencing to control badger movement - an update. In Tuberculosis Investigation Unit, University College Dublin, Selected Papers 1993, 55-61.

TABLE 1.¹

Examples of the estimated length of boundary on farms of different sizes and with a varying degree of fragmentation.

1.	<u>Area - 50 acres</u>		
	(a)	1 unit farm	- 2600 yards
	(b)	2 fragment farm	- 3200 yards
	(c)	3 fragment farm	- 3700 yards
2.	<u>Area - 100 acres</u>		
	(a)	1 unit farm	- 3300 yards
	(b)	2 fragment farm	- 4800 yards
	(c)	3 fragment farm	- 5700 yards
3.	<u>Area - 150 acres</u>		
	(a)	1 unit farm	- 4100 yards
	(b)	2 fragment farm	- 5800 yards
	(c)	3 fragment farm	- 7300 yards
4.	<u>Area - 200 acres</u>		
	(a)	1 unit farm	- 4900 yards
	(b)	2 fragment farm	- 6700 yards
	(c)	3 fragment farm	- 8300 yards

¹ The figures presented above are intended as an indication of farm boundary length only. In any given farm situation, it will be necessary to measure the farm boundary in order to accurately calculate the cost of fencing it.