A Proposed Mapping Format for Bovine Tuberculosis Herds across County Boundaries

R.F. Hammond

Introduction

Previous publications for the Tuberculosis Investigation Unit (Selected Papers 1991/92, 1993) have made reference to the role of mapping reactor herds for epidemiological time and space studies using Geographical Information System (GIS) technology. Point location data of this type can be used for overviews of distribution of bovine tuberculosis reactor herds at any particular point in time. With regard to this latter aspect the District Veterinary Office (DVO) in County Meath manually produces a monthly map showing the distribution of reactor herds in the county. This map is distributed to surrounding county offices and private veterinary practitioners to keep them informed of the present position of bovine tuberculosis within Co. Meath.

This article proposes a computerised version of such a mapping concept. In this regard it represents a important advance over the methodology employed in the Co. Meath DVO. The map output from the Tuberculosis Investigation Unit using GIS technology allows seamless maps to be produced showing the distribution of reactor herds within a buffer zone of two to three District Electoral Divisions surrounding the principal index county. An example of this, illustrating County Kerry and surrounding counties, is presented in Figure 1. The actual report output is produced on A3 size paper.

A report generator dump file, software developed by Mr Ian O’Boyle of ERAD for use in each DVO, allows the selection of the variable fields, viz. number of reactor animals, lesion data and the national grid co-ordinates for the herd. These data, copied to diskette and forwarded to the Tuberculosis Investigation Unit, are transformed using Microsoft and ESRI1 software programmes for map production with PC ARCINFO. Figure 1 shows the distribution of non-visible lesion and visible lesion herds for 1994 from supplied data for the principal index county Co. Kerry and surrounding counties. In order to give the complete distribution of affected herds, both within and across the county boundaries, it is essential to have complete county sets of co-ordinate data for year on year mapping of these herds.

This approach is only one of many permutations that can be derived from data sets created from report generator dump files with accompanying national grid co-ordinates. Herds associated with different enterprise types and fragmented farms etc., are just two permutations that may be added to such a data set.

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Distribution of Reactor Herds in Co. Kerry and Surrounding Counties

Legend
- Reactor Herds
- Visible Lesion Herds
- Communications
- Primary Roads
- Secondary Roads
- DED's
- HI 23

Map information based on Ordnance Survey DED's and Bartholomews CHEST data sets

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ERAD/TEAGASC 43 Tuberculosis Investigation Unit, UCD