



Title	A presentation format option for monthly DVO-based reports
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Publication date	1994-07
Publication information	Colgan, S. "A Presentation Format Option for Monthly DVO-Based Reports." University College Dublin. Centre for Veterinary Epidemiology and Risk Analysis, July 1994.
Series	Selected Papers, 1993
Publisher	University College Dublin. Centre for Veterinary Epidemiology and Risk Analysis
Item record/more information	http://hdl.handle.net/10197/8933

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A Presentation Format Option for Monthly DVO-based Reports

S. Colgan

Introduction

In order to use the information contained in the monthly District Veterinary Office (DVO) summary reports to its best advantage, it was decided to create a visual assessment of the tuberculosis position on a county or regional level with respect to variables such as APT¹, APST² and the % of herds tested.

Methods

The means for these selected variables and their respective standard deviations were used to construct limits within which the ratio of the current DVO values could be compared with the national averages for any of the above mentioned factors.

The method selected was based on one used by the Centre for Disease Prevention and Control (CDC) in Atlanta, Georgia (Report, 1989).

The limits constructed show typical variability in the ratios and were computed as $\{ 1 \pm 2*(STD/MEAN) \}$.

The software package EXCEL was used to generate the ratio file as well as the upper and lower 'historical limits' against which the current ratio was compared. If the current ratio fell outside the historical limits based on the mean and two standard deviations of the mean, then that portion of the bar is lighted shaded and denoted "beyond historical limits".

Due to the continuous nature of the data, and the variation amongst the counties it was decided not to use this procedure on a regional basis.

Rather the most informative way of utilising this method was to look at the DVO regions on an individual level.

The years 1989-1991 were used as the base reference point to calculate the "historical limits". The variables selected for analysis are as detailed in Table 1.

This method allows one to observe retrospectively whether there had been an improvement or a disimprovement in the area with regard to the selected criteria.

An example of how the limits are calculated for the selected variables, in the case of Carlow DVO region and how these are used to compare the 1992 values with those from earlier years i.e. 1989-1991, is also shown in Table 1.

Results and Discussion

Examples of how the results may be presented in graphical form, are given in Figures 1 to 4.

One must be very careful, however, when interpreting the output that this format presents, since the selected variables are clearly not independent of one another.

¹ APT: No. of tuberculin reactors per 1,000 animal tests.

² APST: No. of standard tuberculin reactors per 1,000 animal tests.

Table 1. An example of how the limits were calculated for one of the eleven parameters, APT (All), in the Carlow DVO region.

January - May/June/July/August,1989-1991

Carlow DVO region:

Variables:	Mean at DVO level:	Standard Deviation:
APT (All) **	3.93	1.12
APT (Round Tests)	1.80	1.53
APT (Special Check)	2.70	1.30
APT (Contiguous)	5.52	2.70
APT (Reactor Retests)	6.73	1.38
APT (Six month)	2.26	1.07
% Restricted Herds	6.45	1.29
No. Restricted Herds	125.17	24.52
No. of Herds	1,941	16
No. of Animals	102,033	1,168
Avg. Herd size	52.56	0.94

APT (All) ** = { The reactor disclosure rate per 1,000 animals tested }

Limits : { $1 \pm 2 * (\text{std. dev.} / \text{mean})$ }

The limits for APT (All) are as follows :

{ $1 \pm 2 * (1.12 / 3.93)$ } which become { 0.43 , 1.57 }

The average APT (All) value for the Carlow DVO region in 1992 for the same time frame is = 2.65

so taking the ratio of this to the average APT (All) value above,

(2.65 : 3.93) = 0.67

This value of 0.67 lies inside the above calculated limits (0.43, 1.57).

Figure 1. Clare DVO region 1989/'91 V's 1992. See Text for details.

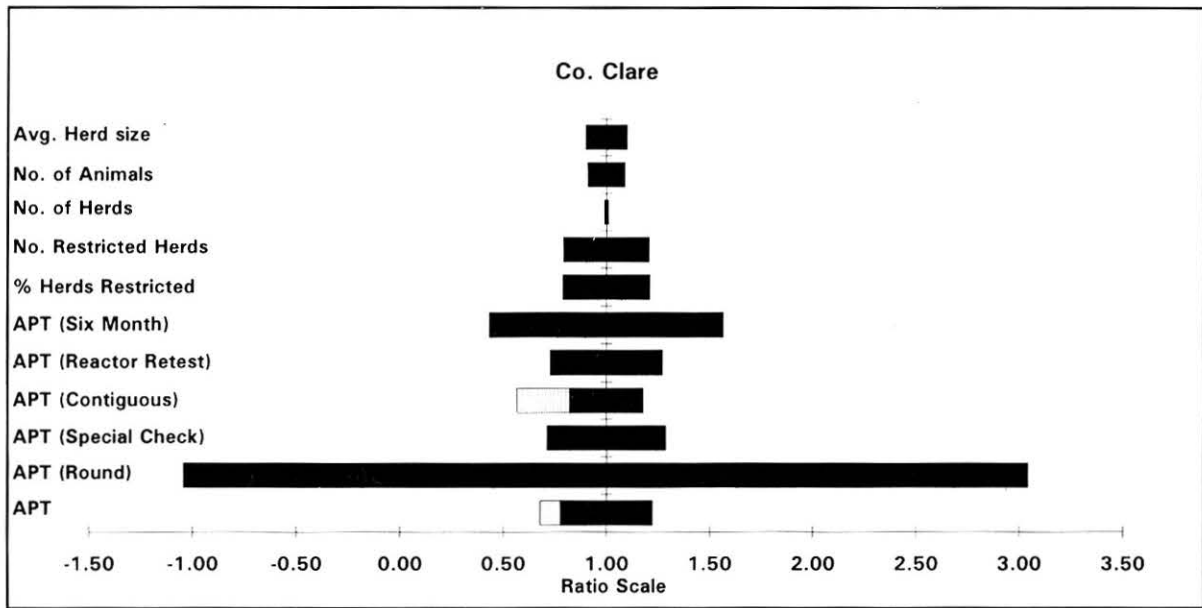


Figure 2. Clare DVO region 1989/'91 V's 1993. See Text for details.

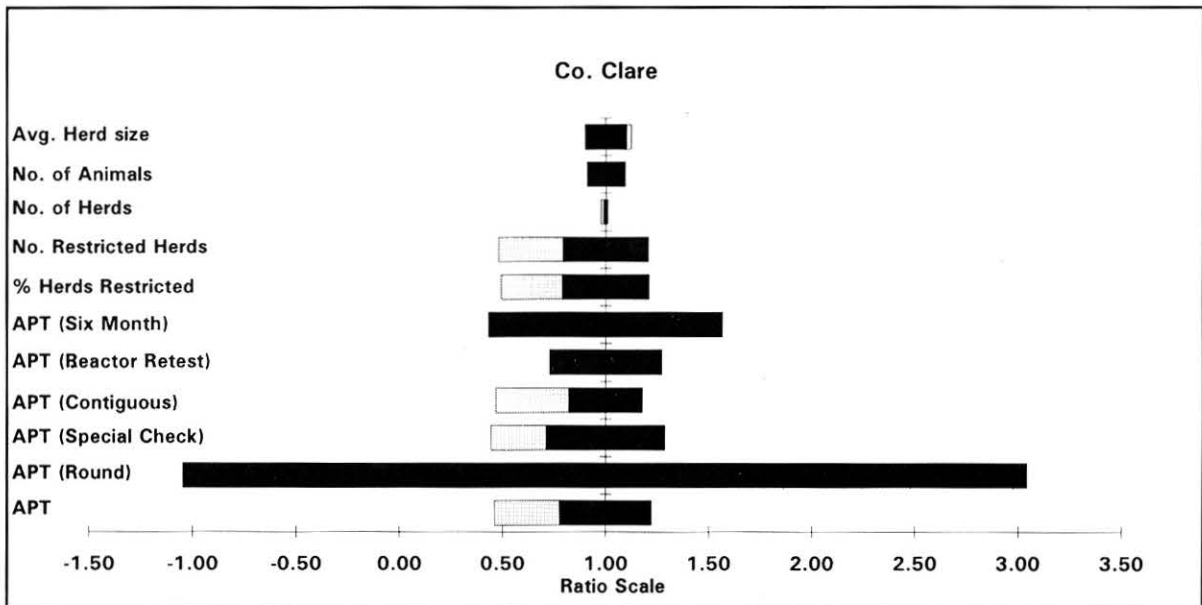


Figure 3. Monaghan DVO region 1989/91 V's 1992. See Text for details.

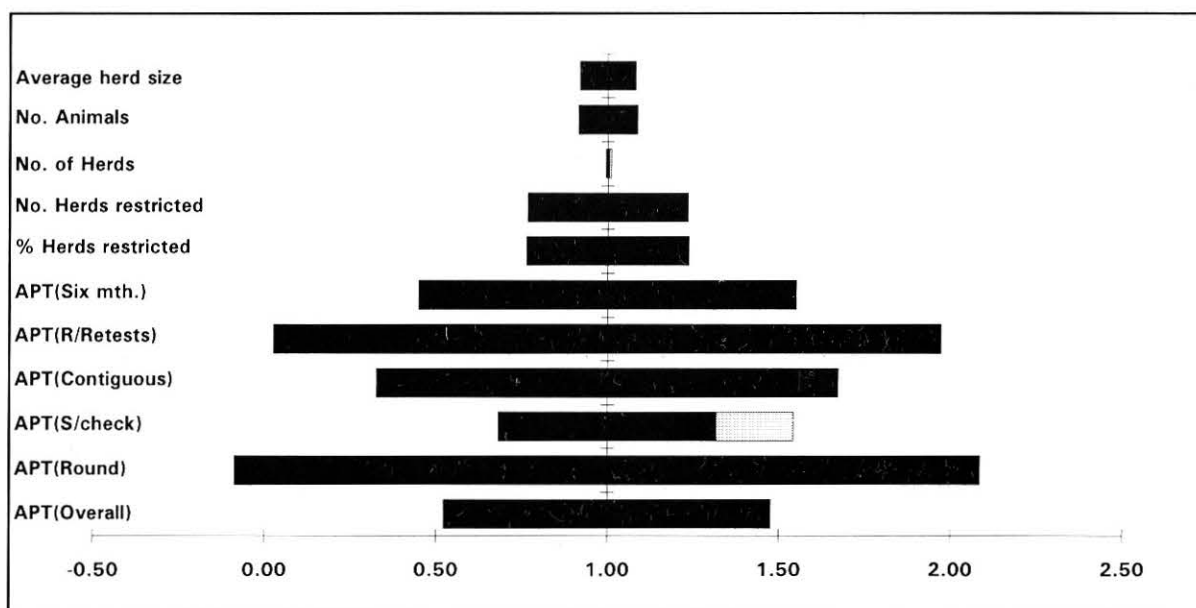
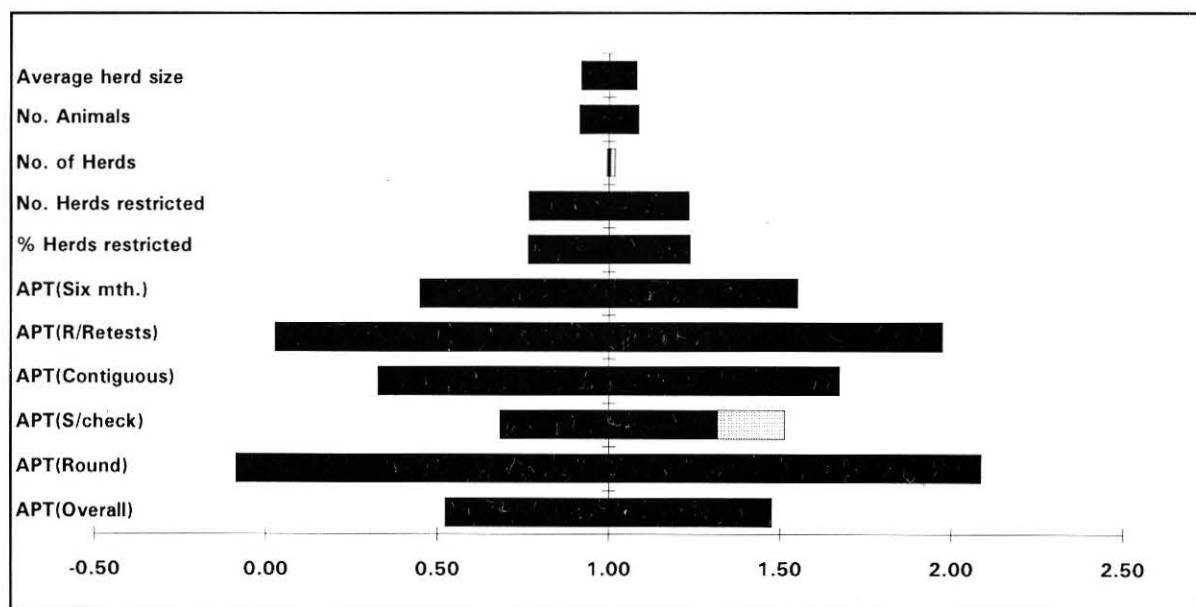


Figure 4. Monaghan DVO region 1989/91 V's 1993. See Text for details.



In Figures 1 and 2 the data for the Clare DVO region in 1992 and 1993, respectively, have been compared with those for the years 1989-'91, for the months January-May/June/July/August.

Figure 1 indicates that in 1992, this region had improved in relation to (a) the overall APT and (b) the APT (contiguous tests), as shown by the lightly shaded bar areas on the charts.

Figure 2 indicates that this region had improved with regard to (a) the overall APT, (b) the APT (special check), (c) the APT (contiguous tests), (d) the % of restricted herds, (e) the number of restricted herds in 1993. A slight increase in the average herd size was also observed (see lightly shaded bar areas).

In Figures 3 and 4, the data for the Monaghan DVO region in 1992 and 1993, respectively, have been compared with the years 1989-'91, for the months January-May/June/July/August.

Figure 3 indicates that this region had disimproved in relation to the APT (special check tests), as shown by the lightly shaded bar areas on the charts.

Figure 4 indicates a disimprovement in the APT (special check tests), as above.

This format will be reviewed over a period.

References

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