FINANCIAL IMPLICATIONS OF A TB OUTBREAK

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As a veterinarian in clinical practice we spend a lot of time routinely TB testing deer herds Occasionally we are confronted with a genuine TB outbreak and although this is never a pleasant experience for the farmer, it certainly provides a catalyst in focusing our interests on this disease It gives us the opportunity to use our clinical and technical expertise to eliminate TB from that property in the most efficient and cost effective way

There are several aspects of such a disease outbreak which contribute to the overall clinical picture and eventual actions taken including

1. Area considerations - endemic or not
   - adjacent properties
   - movement of stock to and from farm
2. Herd history - testing history
   - stock movements
3. Testing procedures and interpretation of data.
4. Herd management of the disease
5. Farmer - sensitivity to and appreciation of the issues which the farmer is facing

These include a Financial management
b Stock management

It is because of my own interest in farming that I can really relate to the financial and stock management constraints that a TB outbreak can impose on a farming operation, and it is these areas that I wish to expand on

This presentation is really a case study involving two properties from within our practice which have had the misfortune of a TB outbreak I don't want to target how the disease was managed in these cases except to say that we are reasonably confident both properties are now TB free

There are two properties used for these case studies - a small operation and a larger farming operation, which I will attempt to demonstrate the magnitude of the financial implications and the importance of correct advice

CASE I

This is a larger sheep, cattle and deer farm with 180ha fenced for deer.

The farming objectives for the deer enterprise can be summarised as follows

1. Maintain a large breeding herd
2. Gradually increase the genetic value of the herd with breeding programs
3. Gradually increase stock numbers within the limits of income.
4. Develop live sale markets and capitalise on premiums being offered
5. Slaughter any other surplus stock

Fortunately, this farm had a very low incidence of disease (<0 25%) and a decision was made to eradicate TB from the herd by testing

Surrounding farmland was subject to a Regional Council BLIP control to ensure possum populations were significantly reduced to minimise any spread of infection to this potential feral vector.

The cost of this control program was $3946 to cover 120ha

To facilitate this exercise, aspects of income and expenditure which relate directly to the TB problem have been isolated

A standard stock reconciliation for the 1988/89 year has been used to form a base year (See Table 1) In any farm income and expenditure statement there are a vast number of variables, however, the main aspects featured here include live sales, slaughtered stock income, TB testing costs and interest charges

Table 1

STOCK RECONCILIATION 1988/1989

	Opening Stock 1.7.88	Natural Increase	Purchases	Live Sales	Slaughter	Death	Closing Stock 30.6.89
Hind		403		280		3	
Rsg 1	140					10	120
Rsg 2	950				57	4	130
M.A.							889
Stag		393		80		8	
Rsg 1	110			20		5	305
Rsg 2	55			16			85
M.A.	145			20			164
Totals	1400	796	0	416	57	30	1693

Farm Income

A Live Sales	Average Price	$510
B Slaughter	Average Price	$335
	Total Livestock Income	$231,395

Points worthy of mention from this table include.

1 Modest annual stock number increase
2 Reliance on live sales compared with stock slaughtered
3 Live sales mainly rising one-year-old stags and hinds

Table 2

STOCK RECONCILIATION 1989/90

	Opening Stock 1.7.89	Natural Increase	Purchases	Live Sales	Slaughter	Death	Closing Stock 30.6.90
Hind		416				15	
Rsg 1	120				15	7	401
Rsg 2	130				130	10	98
M.A.	889						879
Stag		416				15	
Rsg 1	305				30	11	401
Rsg 2	85				45	1	264
M.A.	164				10		193
Totals	1693	832	-	0	230	59	2236

Farm Income

A Live Sales		0
B Slaughter	Average Price $283	$65,175
	Total Livestock Income	$65,175

TB was diagnosed in this herd in September 1989. Explanations include

1 Significant increase in livestock numbers from beginning to end of year - 543 ie a 32% increase

One could argue that there are risks in increasing herd numbers when trying to eradicate TB from the herd, however, this was an active decision

2 Yearling stags which were normally sold in the spring could no longer be sold because of the severe market depression in price imposed by the movement control notice, and also the philosophical desire not to place other farmers at any risk

3. Thus the live sale option was gone

4 The only stock available for a slaughter option was capital stock i e mixed aged hinds and mature stags Obviously this was not a wise option

5. As a consequence of not being able to sell stock and in fact few animals available to kill, the stocking rate on the property increased 14 3 s u /ha to 17 0 s u /ha

6 The spring of 1989 came after the long and difficult 88/89 drought in Hawke's Bay and an equally difficult winter, so stock were not in the condition they would normally be

7 Consequental loss of income from sale deer and increase in slaughter numbers

An active decision was made upon realisation of the TB problem to move farm policy towards venison and velvet Thus a further 105ha of farm was deer fenced, and R1 stags were retained to form a basis of the enlarged velvetting herd

Table 3

STOCK RECONCILIATION 1990/91

	Opening Stock 1.7.90	Natural Increase	Purchases	Live Sales	Slaughter	Death	Closing Stock 30.6.91
Hind		390				16	
Rsg 1	401				70	20	374
Rsg 2	98						311
M.A.	879				50	20	907
Stag		390				16	
Rsg 1	401				180	20	374
Rsg 2	264				160		201
M.A.	193				4		293
Totals	2236	780	0	0	464	92	2460

Farm Income

A Live Sales		0
B. Slaughter	464 x $276	$128,276
	Total Livestock Income	$128,276

In this stock reconciliation, there are more R2 stags sold, and some R1 stags Thus slaughter numbers have increased significantly There was a noticable decrease in fawning percentage in this year

Table 4

STOCK RECONCILIATION 1991/1992

	Opening Stock 1.7.91	Natural Increase	Purchases	Live Sales	Slaughter	Death	Closing Stock 30.6.92
Hind		516				21	
Rsg 1	374				106	18	495
Rsg 2	311				348	20	250
M.A.	907						850
Stag		516				22	
Rsg 1	374				187	16	494
Rsg 2	201				284	10	171
M.A.	293						200
Totals	2460	1032			925	107	2460

Farm Income

A Live Sales		0
B Slaughter	925 @ $257	$237,829
	Total Livestock Income	$237,829

This table represents a new static level of farming with all the farm fully stocked, and stock numbers representing the new sustainable farming system Note that slaughter numbers have reached a new high.

Table 5

SUMMARY OF INCOME AND PERFORMANCE

	88/89	89/90	90/91	91/92
Live Deer Sales	$212,300	0	0	0
Slaughter Deer	$19,095	$65,175	$128,276	$237,829
Total Deer Sales	$231,395	$65,175	$128,276	$237,829
Stock Carried No	1400	1693	2236	2460
s u Carried	2582	3061	3931	4409
s u /ha Fenced	14 3	17 0	13 8	15 5

This table represents a summary of deer sales, stock numbers and stocking rate

It is worth noting that although there was a gradual increase in velvet produced over this period, the net price of velvet was decreasing from the 1988 high, and thus the nett return to the farmer was fairly similar over this four year period

Table 6.

A. Dollar Implications of First Year TB Infection i.e 89/90

1. Loss of income	$166,220
2 Cost of TB testing	$14,500
3 Additional fencing 105ha	$20,000
4. Interest on extra capital $200,720 @ 18%	$36,130
Cost of infection in first year	**$236,850**

Other costs not taken into account include

1 Increase in animal health costs because more deer farmed e g Anthelmintics
2 Increase in disease incidence e.g. Yersiniosis.
3 Increase in death rate - doubled over two years (2 14 - 4 1%).
4 Increase in feed costs because of higher stock rate e g more grain feed
5 Decrease in fawning percentage
6 Decrease in growth rates of young deer
7 Decrease in velvet weights
8 Necessity to slaughter deer according to feed levels rather than optimum weights to coincide with peak premiums

The 91/92 year brought this farm to its new income level

The accrued loss in income and increased costs actually becomes a huge figure and speaks for itself One could argue that the farmer has an increased investment because of increased livestock numbers, and that the overall market conditions have changed as well, but the magnitude of the financial implications to this farmer are self evident

CASE II

Farm size 24ha
Farm fully fenced and stocked 11 6 s u /ha
Farming objectives
1 Breeding unit.
2 Finish surplus stock
High incidence of disease on this property 15-20%.
Some financial constraints were evident
The breeding hinds were a normal commercial herd

Our recommendation was to completely depopulate this herd, sell the property and re stock However, the farm owner was reluctant to sell because most of the breeding hinds had been bought at very high levels

The following stock reconciliations reflect the base level 88/89, the diagnosis of TB in the spring of 1989, and the following three years

B. Costs of Second Year of Infection

1 Loss of income	$103,119
2 Cost of TB testing	$2,450
3 Interest of capital $105,569 @ 16%	$16,891
Total Costs for year	**$122,460**

STOCK RECONCILIATION 1988/89

	Opening Stock 1.7.88	Natural Increase	Slaughter	Death	Closing Stock 30.6.89
Hind		39		2	
Rsg 1	37		11	1	37
Rsg 2	25				25
M.A.	60		23	2	60
Stag		39		2	
Rsg 1	37		36	1	37
Rsg 2					0
M.A.	3				3
Totals	162	78	70	8	162

Fawning 92% Deaths 5%

STOCK RECONCILIATION 89/90

	Opening Stock 1.7.89	Natural Increase	Slaughter	Death	Closing Stock 30.6.90
Hind		30		2	
Rsg 1	37			7	28
Rsg 2	25			27	30
M.A.	60		0		58
Stag		30		2	
Rsg 1	37				28
Rsg 2	0		36	1	0
M.A.	3		0		3
Totals	162	60	36	39	147

Fawning 71% Deaths/TB Reactors 24%

STOCK RECONCILIATION 90/91

	Opening Stock 1.7.90	Natural Increase	Slaughter	Death	Closing Stock 30.6.91
Hind		34		2	
Rsg 1	28			1	32
Rsg 2	30		19	3	27
M.A.	58			7	59
Stag		34		2	
Rsg 1	28		20		32
Rsg 2	0				8
M.A.	3				3
Totals	147	68	39	15	161

Fawing 78% Deaths 10%

STOCK RECONCILIATION 91/92

	Opening Stock 1.7.91	Natural Increase	Slaughter	Death	Closing Stock 30.6.92
Hind		37		2	
Rsg 1	32			1	35
Rsg 2	27		26		31
M.A.	59			4	56
Stag		37		2	
Rsg 1	32		27	1	35
Rsg 2	8		8		4
M.A.	3				3
Totals	161	74	61	10	164

Fawning 86% Deaths 6%

A. Farm Income 88/89

11 R2 hinds	@ $275	$3,025
23 M A hinds	@ $325	$7,425
36 R2 stags	@ $350	$12,600
	Total Income	**$23100**

B. Farm Income 89/90

36 R2 stags	@ $350	$12,600
	Total Income	**$12,600**

C. Farm Income 90/91

19 M A hinds	@$300	$5,000
20 R2 stags	@ $325	$6,500
	Total Income	**$12,200**

D. Farm Income 91/92

26 M A hinds	@ $190	4,940
27 R2 stags	@ $245	$6,615
8 R3 stags	@ $350	$2,800
	Total Income	**$14,355**

CASH FLOW / DOLLAR IMPLICATIONS.

A.Year 89/90

1) Loss of income	$10500
2) TB Testing costs	$ 2973
3) Interest $13473 @ 18%	$ 2425
Total Cost	**$15898**

B.Year 90/91

1) Loss of income	$10900
2) Tb Testing costs	$ 1835
3) Interest $12735 @ 16%	$ 2037
Total Cost	**$14772**

C. Year 91/92

1) Loss of income	$ 8745
2) TB Testing Costs	$ 227
3) Interest @ 14%	$ 1256
Total Cost	**$10228**

CASE II

If this property had depopulated as recommended, would have immediately sold m a hinds left in the herd and mature stags i.e in late September-October

Yearlings could have then been farmed on with more grass available and hopefully increased growth rates of these stock. These could then have been killed in the autumn

Replacing stock could have been done in the winter of 1990 After the property had been spelled There were several options available for re-stocking including

1 Buy in-fawn hinds in spring 1989 and graze out for 9-12 months
2 Buy in-fawn hinds in winter 1990
3 Buy finishing stock - either stags or hinds.
4 Buy velvetting stags etc

There are clearly several options available which could be worked through and a decision made Clearly the farm could have been back to a full income year for the 1990/91 financial year

In fact there could have been a gain, as values actually dropped in that 12-month period

CONCLUSIONS

These two cases highlight several issues when faced with a TB outbreak

1 When TB is detected in animals going through the DSP's, the correct identification of the animal to the farm is of paramount importance The stigma and cost imposed on farmers with TB on their properties is too great for careless identity decisions

2. When faced with TB outbreaks, it is important to discuss and budget the various strategies available with the farmer so the most sensible decision can be made
e g eradicate or depopulate

3 The costs of detection and diagnosis of disease although very important to cashflow on a farm, are small compared with production losses

4 Carefully plan any physical contraints within the overall farm plan

5 When developing any deer farming policies, include risk assessment of the options selected in terms of TB risk, and the implications to cashflow if in fact the disease does occur

Remember TB has rendered some farmers financially unviable which in the end benefits no-one