

Veal Calf Production in the Netherlands

P. Franken, D.V.M., Ph.D.
L.V. Wuijckhuise, D.V.M.
C. Holzhauser, D.V.M., Ph.D.
G.H.A. Overgoor, D.V.M.
Animal Health Department
Gelderland, Postbus 10, 6880 BD
Velp G., The Netherlands

Introduction

Quantitative information on the health of veal calves in the Netherlands is limited. Some broad figures are known as to, for example, average mortality and premature slaughter rate, medicine costs and applied antibiotic treatments for enteric and respiratory disorders, etc.³ Data from necropsies and laboratory research at the animal health departments can be very useful for the veal calf industry to monitor changes.

Materials and Methods

An increasing number of animals and samples are presented each year to the Animal Health Department, primarily to support (herd) diagnosis. Data from 17,000 veal calves, submitted between 1 January, 1970 and 31 December, 1986, are discussed in this paper. The bacteriological and antimicrobial pattern examinations are done by standard Dutch methods (unpublished).

Results and Discussion

Necropsy data from the Animal Health Department in Gelderland contribute to the insight in herd health problems in Dutch veal calves. The information is biased by the fact that only 5–10% of the dead animals are presented for necropsy and the fact that mortality is not directly correlated with morbidity and the economic importance of a disease. Nevertheless, over the past years, the necropsy results indicate some attention points and important changes.

Salmonella

Table 1 shows that in the early seventies *Salmonellae* gave no important herd health problems. In the second half of that decade an evident rise was seen in the incidence, especially of *S. dublin*. The increase continued in the 1980's, but now was due to *S. typhimurium*.

Paper presented at the XV World Congress on Calf Diseases, Palma de Mallorca, Spain, October 10–14, 1988.

During the last years the frequency of *Salmonella* has clearly decreased. The recommendations from the epidemiological survey of the Dutch salmonella-committee² may have contributed to this positive development. Tables 2 and 3 show that because of the developed antimicrobial patterns of *S. dublin*, and especially *S. typhimurium*, other routes for prevention need to be investigated.

Pneumonia

Pneumonia and pleuropneumonia—as shown in Table 1—are of increasing importance in veal calves. In almost half of these cases *Pasteurella haemolytica* is cultured as causal agent. The changes over the last decade in antimicrobial pattern of especially this bacteria is alarming, as shown in Table 4. Other ways for treatment and prevention need to be found.

New diagnostic techniques, such as bronchopulmonary lavage¹ enable us to get a better insight in the etiology of respiratory disease but great attention should also be paid to the husbandry circumstances and climatological conditions under which the animals are kept. Much of our present knowledge on these conditions is empiric.

Enteric Disorders

Enteric disorders are the third important group of problems, such as digestion disturbance, gastro enteritis and cachexia (Table 1). These problems are of great importance during the first weeks at the veal calf unit.

The cachexia-investigation, which started many years ago, has up until today produced little practical results. New investigations on food allergy as a cause of diarrhoea are promising.

The above mentioned results may illustrate that veal calves presented for necropsy at the Animal Health Department may reveal—although a little biased—important information for the veal calf industry, both for present management and future research.

TABLE 1. Survey of the most important necropsy- and bacteriological results from veal calves in 1970–1986 in the Netherlands.

Year	necropsies (n)	Salmonella %, (n)	<i>S. dublin</i> <i>S. typhimurium</i>	(pleuro) pneum. %, (n)	<i>P. Haemolytica</i> %, (n)	(gastro) enteritis % (n)	%, (n)	Cachexi %, (n)
1970	142	9,8 (14)	50/50	-	-	-	-	-
1976	828	31,8 (263)	84/16	10,9 (90)	-	16,3 (135)	6,5 (54)	15,8 (131)
1981	1.437	31,7 (455)	34/66	7,1 (102)	3,2 (48)	3,2 (119)	8,3 (77)	15,1 (218)
1984	1.169	19,0 (222)	51/49	8,2 (96)	4,1 (48)	10,3 (120)	4,4 (51)	14,9 (174)
1986	1.109	9,2 (102)	34/66	19,6 (218)	10,5 (116)	12,2 (135)	8,1 (90)	15,2 (169)

TABLE 2. Review of the antimicrobial pattern of *S. typhimurium* cultures isolated from veal calves in 1970–1987 in the Netherlands (in %).

Year	Chlo.	tetra	neo	ampi	colist.	fura	flum.	trim/sulpha
Until 1970	81	15	96	70	-	100	-	-
1970–73	57	7	56	54	-	99	-	100
1974–79	20	7	63	34	99	99	-	68
1980–83	13	9	54	21	100	99	-	14
1986	19	4	47	29	100	99	100	24
1987	17	9	50	18	100	96	96	20

TABLE 3. Review of the antimicrobial pattern* of *S. dublin* cultures isolated from veal calves in 1970–1987 in the Netherlands (in %).

Year	Chlo.	tetra	neo	ampi	colist.	fura	flum.	trim/sulfa
Until 1970	100	94	100	100	-	100	-	-
1970–83	77	72	100	99	-	100	-	100
1974–79	13	12	61	80	100	93	-	87
1980–83	26	27	88	74	99	86	-	81
1986	10	27	100	100	100	97	100	97
1987	7	25	81	100	100	92	100	85

TABLE 4. Review of the antimicrobial pattern* of *P. haemolytica* cultures isolated from (pleuro)pneumonia cases in veal calves in 1971-1977 in the Netherlands (in %).

Year	pen.	strep.	chlo.	tetra	neo	ampi	sulf	trim/sulfa	flum.
1971	100	100	100	100	-	-	100	-	-
1977	50	19	94	44	81	94	75	88	-
1978-80	34	31	92	51	94	90	55	84	-
1984	14	2	60	15	98	20	30	70	-
1986	15	2	44	6	97	18	26	62	100
1987	7	0	28	9	93	10	9	62	100

Summary

Data from about 17,000 veal calves presented for necropsy in the period 1970-1987 are presented.

In 1986 salmonella was diagnosed in 9.2% of the autopsied calves, pleuropneumonia in 19.6%, enteric disorders in 20.3%, and cachexie in 15.2%.

Antimicrobial patterns from *Salmonella dublin*, *Salmonella typhimurium* and *Pasteurella haemolytica* from 1970 until 1987 are stated.

References

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