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Brief Communication

MYCOPLASMAS: DEMONSTRATION IN SEMEN AND PREPUTIAL WASHINGS FROM BULLS

Among potentially pathogenic microorganisms occurring in semen from presumably normal artificial insemination (A.I.) bulls, mycoplasmas are rather common. During the years 1967—69 *Blom & Ernø* (1970) examined 3,323 semen samples originating mainly from the annual sampling for brucellosis control, supplemented with samples from export and import bulls. In 1,287 cases the cultures were overgrown and mycoplasma isolation therefore impossible. Mycoplasmas were isolated from 158 (7.8 %) of the remaining 2,036 samples, which originated from 146 bulls. Identification of 100 isolates resulted in demonstration of 4 species, viz., Mycoplasma bovigenitalium (85 %), Mycoplasma bovirhinis (2 %), Acholeplasma laidlawii (12 %) and Acholeplasma modicum (1 %) (*Ernø* 1975).

In 1975 a project was initiated in which an attempt was made to improve the bacteriostatic effect of the primary semisolid medium used by *Ernø et al.* (1967). To this end, ampicillin (Pentrexyl®) 0.2 mg/ml was substituted for penicillin-G. Apart from this the technique remained unchanged for the duration of the project (1975—82).

During the years 1975 to 1979 the material was comparable to that examined in the first study — except that a limited number of preputial washings were included. As from 1979, however, as a result of a revision of the health control programme for Danish A.I.bulls, there was an increase in the number of preputial washings in proportion to the number of semen samples.

After the introduction of ampicillin as a bacteriostatic additive, the rate of bacterial overgrowth of cultures from semen samples fell from 38 % to 18.5 %. Mycoplasmas were isolated at a higher rate, namely 18.8 % as against 7.8 % in the earlier investigation (Table 1).

Table 1. Mycoplasmas in semen and preputial washings from bulls 1975—82.

Year	Semen samples					Preputial washings				
	number	cultures overgrown*		cultures positive**		number	cultures overgrown*		cultures positive**	
		n	%	n	%		n	%	n	%
1975	1356	246	18.1	223	20.1	125	46	36.8	10	12.7
1976	1576	356	22.6	127	10.4	158	45	28.5	7	6.2
1977	1724	252	14.6	233	15.8	164	51	31.1	5	4.4
1978	1715	210	12.2	329	21.9	146	28	19.8	0	—
1979	671	190	28.3	184	38.3	551	168	30.5	49	12.8
1980	561	119	21.2	91	20.6	532	170	32.0	29	8.0
1981	699	148	21.0	72	13.0	596	156	26.2	32	7.3
1982	775	158	20.4	134	21.7	574	163	28.4	23	5.6
Total	9,077	1,679	18.5	1,393	18.8	2,846	827	29.1	155	7.7
1967—69	3,323	1,287	38	158	7.8	None				

* Cultures overgrown by bacteria: absolute number and number in percentage of samples.

** Mycoplasma-positive samples: absolute number and number in percentage of samples not overgrown.

In the case of preputial washings 29.1 % of the cultures were overgrown, and mycoplasmas were recovered from 7.7 % only.

The replacement of penicillin-G by ampicillin seemed to be an improvement, in that the percentage of cultures with bacterial overgrowth decreased from 38 to 18.5. The rise of mycoplasma-positive semen samples from 7.8 % to 18.8 % is difficult to explain, but may of course reflect a truly higher incidence of mycoplasmas in the genital tract of the bulls at the A.I. stations. The relatively few isolations of mycoplasmas from the prepuce is inconsistent with the usual conception that the preputial cavity is the most common habitat for mycoplasmas of the genital tract of bulls. The explanation may be that mycoplasmas survive better in semen than in 0.9 % NaCl, which is used both for preputial washing and as transport medium.

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