

## Short Communications

### Identification of sexually low-response rams using a libido test and their performance when allowed to mate under field conditions

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Thirty-one Ile de France stud rams raised in monosexual groups were evaluated for sexual behaviour using three 10-minute libido tests. Rams represented two age ( $\pm$  SD) groups namely, 455,2  $\pm$  6,7 ( $n = 10$ ) and 352,9  $\pm$  11,0 ( $n = 21$ ) days respectively. The proportion of rams which completed service did not increase significantly over the three tests. Eight (25,8%) of the rams did not attempt to serve in any of the tests, and were termed sexually low-response. Five of these rams had a common sire. The low-response rams were mated to small flocks of ewes under pasture conditions, and two of the rams remained sexually inactive.

Seksuele gedrag in 31 Ile de France-stoetramme is deur middel van drie 10-minuut libidotoetse geëvalueer. Die ramme het twee ouderdomsgroepe ( $\pm$  SA) naamlik 455,2  $\pm$  6,7 ( $n = 10$ ) en 352,9  $\pm$  11,0 ( $n = 21$ ) dae verteenwoordig. Die persentasie ramme wat oöie gedek het, het nie met verloop van die toetse 'n betekenisvolle verbetering getoon nie. Agt ramme (25,8%) het nie tydens enige stadium van die toetse oöie gedek nie. Vyf van die seksueel-onaktiewe ramme het dieselfde vaar gehad. Wanneer hierdie onaktiewe ramme onder natuurlike toestande by klein groepe oöie gebring is, het twee van die sewe steeds seksueel onaktief gebly.

**Keywords:** Libido test, rams, field performance

The incidence of sexually low-response rams (those which fail to exhibit adequate sexual behaviour toward an oestrous ewe) in groups of rams raised under monosexual conditions after weaning has been well documented (Pretorius, 1967; Mattner, Braden & George, 1973). Zenchak and Anderson (1980) reported that low-response rams engaged in significantly higher levels of sex-like behaviour with their pen mates (monosexual groups) during rearing than did normal rams. These workers thus suggested that the poor performance of such rams when exposed to an oestrous ewe was due to their inability to interpret sexual cues correctly. Working with Karakul rams, Le Roux and Barnard (1974), demonstrated that heterosexual contact between weaning (68-days old) and 9-months old or from 9 months onwards, significantly increased the number of rams showing normal sexual behaviour

at 18 months of age. Winfield and Makin (1978) speculated that short exposures to oestrous ewes as well as the periodic presence of cyclic ewes in paddocks nearby may have been sufficient to enable rams to establish a sex difference.

The incidence of sexually low-response rams in a group of 31 virgin rams from an Ile de France stud operated under intensive conditions was investigated. The rams were weaned from their dams at 8 weeks of age thereafter they were run in all-male groups on cultivated pastures. There was no certainty that rams were never grazed adjacent to camps containing ewes. The rams represented two age groups being born in the autumn ( $n = 10$ ) and spring ( $n = 21$ ) of 1982. Their average age  $\pm$  SD at the onset of the test was 455,2  $\pm$  6,7 and 352,9  $\pm$  11,0 days respectively.

Rams were subjected to three 10-minute libido tests (Le Roux & Barnard, 1974), spaced 4 days apart with a recently mated oestrous ewe. Teaser ewes were synchronized using intravaginal progesterone sponges, inserted for 8 days, followed by an intramuscular injection of either PMS or prostaglandin — F<sub>2a</sub>. Rams were evaluated for courtship activity, mounting attempts, and completed services according to Zenchak (1976).

The proportion of rams serving ewes, did not improve significantly from the first to the third test (Table 1).

**Table 1** The sexual activity of rams in three libido tests

Test number	Sexual activity							
	Inactive		Mounting		Serving			
	<i>n</i>	%	<i>n</i>	%	One service		Two or more services	
				<i>n</i>	%	<i>n</i>	%	
1	9	29,0	2	6,5	12	38,7	8	25,8
2	8	25,8	1	3,2	12	38,7	10	32,3
3	9	29,0	1	3,2	10	32,3	11	35,5

Eight rams (25,8%) were classified as sexually low-response following the three tests. One of the eight made a vague mounting attempt in Test 1 but did not show sexual activity during the remaining two tests. Of the remaining 23 rams, two rams which were sexually inactive in Test 1, served in Tests 2 and 3, while another ram which served in the first test attempted, but failed to serve in Test 2 and was sexually inactive in Test 3.

Sexually low-response rams exhibited abnormal behaviour in the form of an odd 'baaing' sound, agitation (running around the test pen or circling the ewe), attempts to leave the pen, or simply staring through cracks in the pen. Zenchak and Anderson (1980) reported similar behaviour in low-response rams and interpreted it as a 'fear' response. In addition, two rams showed aggression toward teaser females, a phenomenon noted in some sexually inactive bulls (Crichton and Lishman, unpublished data).

All of the low-response rams were from the younger age group. Despite this, age had no significant effect on sexual behaviour as rams of 10,5–12 months should have been showing strong responses to oestrous ewes, even if incapable of serving.

On further investigation it was found that five of the eight

low-response rams had a common sire (No. 7). The remaining three inhibited rams had different sires. The small numbers of offspring from some sires did not facilitate statistical comparison of sires. It is suggested that ability to learn sexual behaviour may be genetically determined. Mattner, *et al.* (1973) found a high proportion of low response rams in one strain of Merinos.

When faced with the prospect of culling an otherwise top-quality ram, stud breeders are likely to express doubts as to the validity of pen tests. Three months after the pen tests, seven of the eight low-response rams (one culled on the basis of conformation) were each allowed access for a period of 5 days to five maiden ewes. The rams were equipped with harnesses ('sire-sine') and the ewes were checked daily for crayon markings. Two rams (2159 and 2074) did not mark any ewes, while one ram (2117) marked a single ewe indistinctly on her flank. Of these seven rams those which had marked ewes during pasture mating, actively pursued and courted ewes when confined in handling pens. Rams 2117, 2159 and 2074 stood to one side and ignored the ewes, while ram 2159 actively courted rams 2117 and 2074.

Rams 2117, 2159 and 2074 were placed as a group with 18 oestrous-synchronized maiden ewes for a further 8 days, and daily observations made for crayon markings. Ram 2117 marked two ewes while the other two appeared not to mate. Mattner, *et al.* (1973) found that the majority of low-response rams began to show sexual activity following flock mating.

It is apparent that not all rams, determined to be low-response on the basis of pen tests, remain low-response following flock mating. However, such rams should be regarded with suspicion in view of the likelihood of depressed conception rates owing to their poor mating dexterity and libido (Mattner, *et al.*, 1973). Furthermore the implication that the development of normal sexual behaviour is determined genetically suggests that inhibited sires should be culled without being given benefit of the doubt because of other superior traits.

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