

A biopsy from the cranial part of the vagina can be used for diagnosis of pregnancy and for diagnosis of vaginitis. For diagnosis of pregnancy the height of the mucosal epithelial layer is the most important criterium. In estrus this height is about 20 cell layers. Then there is a physiological migration of inflammatory cells from the capillaries to the vaginal lumen. When inspecting the mucosa for the presence of inflammation one has to take into account the state in the estric cycle at biopsy sampling. In order to judge the importance of vaginitis for fertility the histology of the vagina has to be related to clinical signs and to reproductive parameters.

Material and methods.

Biopsies from the cranial part of the vagina of estric sows have been sampled. The results are compared with the conception (pregnant or non-pregnant), the length of the interval weaning-1st estrus (<9 days or >9 days) and vaginal discharge ("fluor negative", "fluor positive" or "fluor before"). "Fluor before" means: discharge seen at a given moment before biopsy sampling. There are 2 groups of sows:

1st. Normalgroup. Represented are 489 estric sows from herds without fertility problems. The owners of those herds had not complained of anaphrodisia, repeat breeding, abortion, mummification, stillbirth and birth of too small litters. The sows were inseminated artificially or mated naturally right after biopsy sampling.

2nd. Problemgroup. 208 sows are represented from herds from which the owners uttered complaints of fertility. The call for veterinary help came partly from the practice of the Veterinary Faculty, State University, Utrecht, and partly from practitioners or Provincial Veterinary Services. Special attention was paid to the complaint of fluor albus. From these herds biopsies were taken both from sows with and without problems. This was done to have the possibility of comparison between these two groups within the problemherds. The biopsy was taken at some moment between 3 days before and 3 days after insemination or possible insemination. In favorable clinical conditions the sows were inseminated artificially or mated naturally in the estrus of biopsy sampling.

Both groups are divided in sows which were presented respectively for the first (1st oe.-group), second (2nd oe.-group) and third and next insemination (3rd & next oe.-group).

Statistical analyses were done by the χ^2 -test.

Results.

The higher the estrus number, the higher the frequency of vaginitis: normalgroup, table 1 ($p < 0,001$) and problemgroup, table 2 ($p < 0,05$). The results of conception are not ordered on the basis of service numbers of biopsy sampling; they are left undivided because of their uniform tendency. The conception rate is significantly lower in the case of vaginitis: normalgroup, table 3 ($p < 0,001$) and problemgroup, table 4 ($p < 0,005$). The length of the interval weaning-1st estrus appeared to be not influenced by the presence of vaginitis in first estrus. In the problemgroup it appears that fluor albus (present at or before sampling) occurs significantly more often in connection with vaginitis than without, table 5 ($p < 0,001$).

Discussion.

In this paper no difference is made in degree of seriousness of vaginitis. In the normalgroup hardly any severe vaginitis is found, as opposed to the problemgroup. The frequency of vaginitis is much higher in the problemgroup, compare table 1 with table 2. There is no evident cause for the vaginitis. In literature

bacterial causes are recorded: streptococcus (2, 3, 7). Estrogens producing fungi (4, 5) and IBR-IPV virus (6, 8, 10) are known to cause vaginitis and vaginal discharge. In these cases there is a decrease in fertility. Concerning the length of the interval weaning-1st estrus in literature, too, no relation is found between vaginitis and anaphrodisia (1, 9).

There are two possibilities to explain the decrease in conception rate in the case of vaginitis:

-vaginitis is an independent affection, in which toxic substances are formed, which have a detrimental effect on sperm.

-vaginitis is an indication of endometritis which can be detrimental to nidation.

Conclusions.

Vaginitis has a negative influence upon the conception. Vaginitis at the first estrus after weaning is not related to the length of the interval weaning-1st estrus. Vaginal discharge is often an indication of vaginitis.

Table 1. Histological examination of the vaginal mucosa in estric sows, normalgroup.

time of sampling	number of biopsies	% vaginitis
1st estrus	399	10,0*
2nd estrus	64	26,6*
3rd&next estrus	26	34,6*
all estri	489	13,5

* A higher estrus number: more vaginitis ($p < 0,001$)

Table 2. Histological examination of the vaginal mucosa in estric sows, problemgroup.

time of sampling	number of biopsies	% vaginitis
1st estrus	85	29,4
2nd estrus	53	35,8
3rd&next estrus	70	48,6
all estri	208	37,5

* A higher estrus number: more vaginitis ($p < 0,05$)

Table 3. Relation vaginitis/conception rate, normalgroup.

	vaginitis negative	vaginitis positive
number of sows	423	66
% pregnant	73,5*	50,0*

* Vaginitis positive: lower % pregnant ($p < 0,001$)

Table 4. Relation vaginitis/conception rate, problemgroup.

	vaginitis negative	vaginitis positive
number of sows	99	61
% pregnant	61,6*	36,1*

* Vaginitis positive: lower % pregnant ($p < 0,005$)

Table 5. Relation fluor albus/vaginitis, problemgroup.

	fluor negative	fluor positive	fluor before
number of sows	137	58	13
% vaginitis	24,1*	63,8*	61,5*

* Vaginal discharge: more vaginitis ($p < 0,001$)

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