



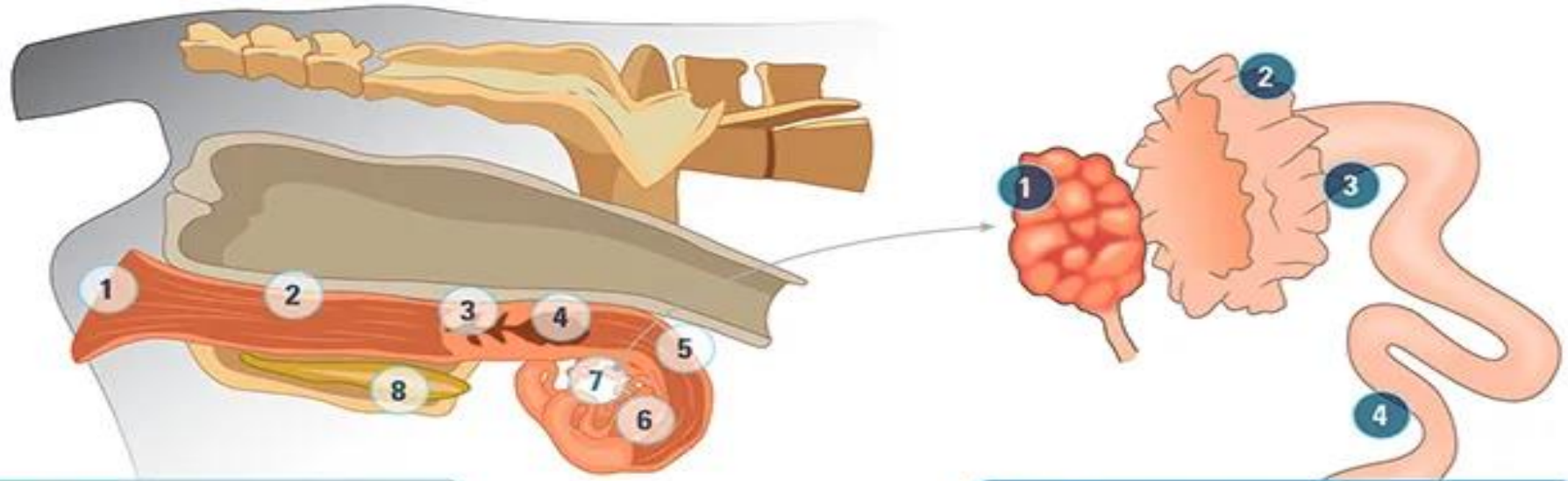
# PROPÉDEUTIQUE ET SÉMIOLOGIE DE L'APPAREIL REPRODUCTEUR DE LA VACHE: ILLUSTRATIONS

Par

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**Année universitaire: 2023 – 2024**

# REPRODUCTIVE TRACT OF THE COW



## 1. Vulva

The most outside part. As an animal approaches estrus, the vulva will usually begin to swell and develop a moist red appearance.

## 2. Vagina

## 3. Cervix

Thick walled organ forming a connection between the vagina and the uterus. Its primary function is to protect the uterus from the external environment.

## 4. Uterine body

Site where semen should be deposited at artificial insemination.

## 5. Uterine horn

Three layers of muscle strongly vascularised. Under the influence of oxytocin and oestrogen these muscles rhythmically contract to aid the transport of sperm into the oviducts.

## 6. Oviduct

It carries the cow's eggs.

## 7. Ovary

## 8. Bladder

## 1. Ovary

Produces oocytes and hormones throughout the estrus cycle. Ovaries hold multiple follicles and the corpus luteum, at the site where the previous ovulation took place.

## 2. Infundibulum

On the open end of the oviduct. It surrounds the ovary and keeps eggs from falling into the body cavity.

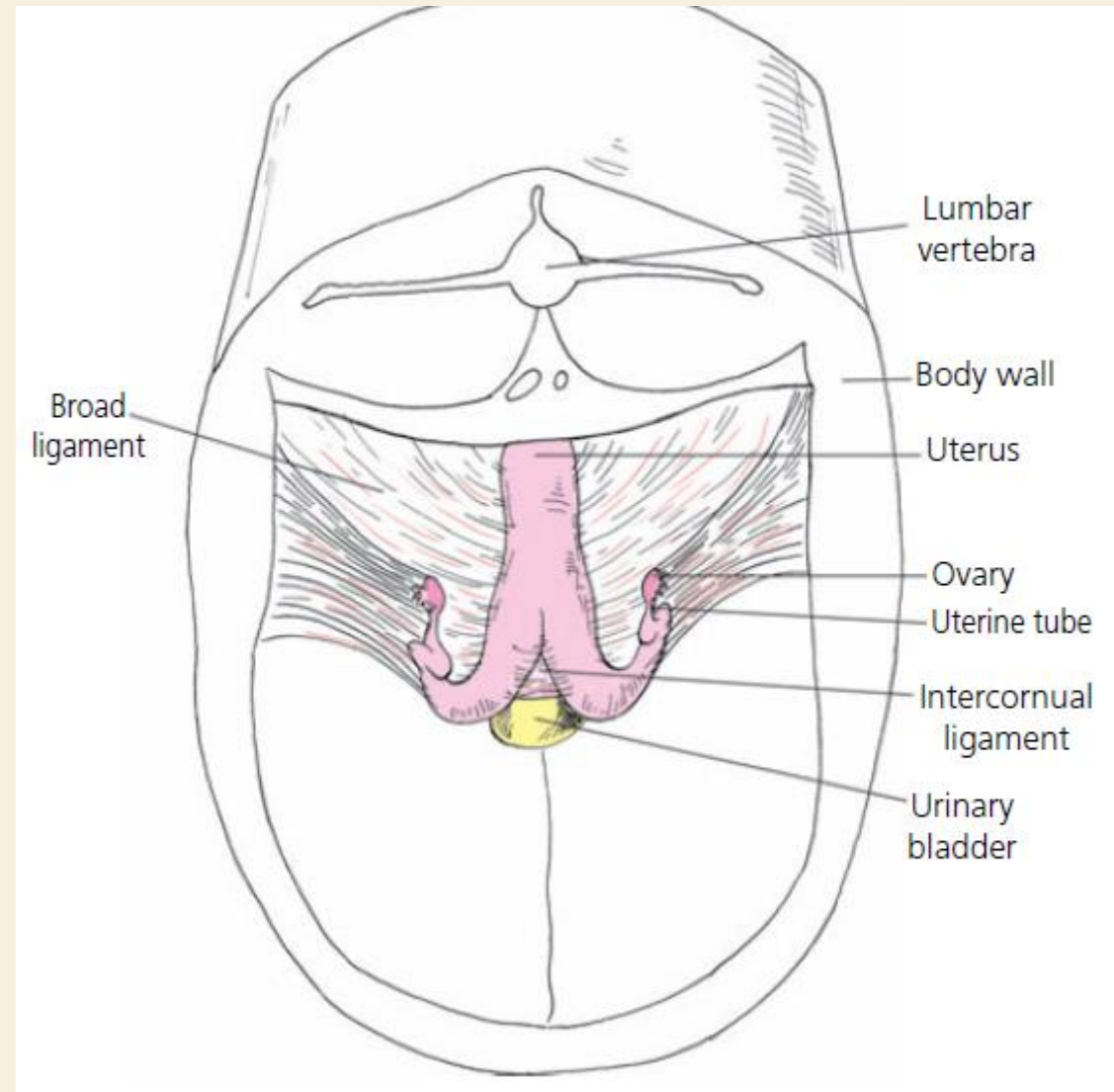
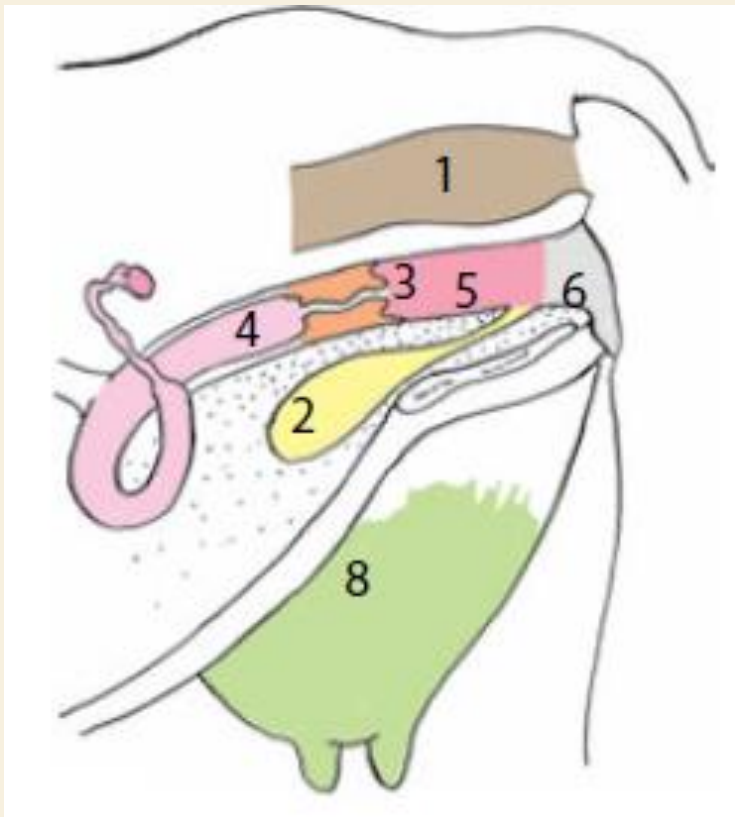
## 3. Ampulla

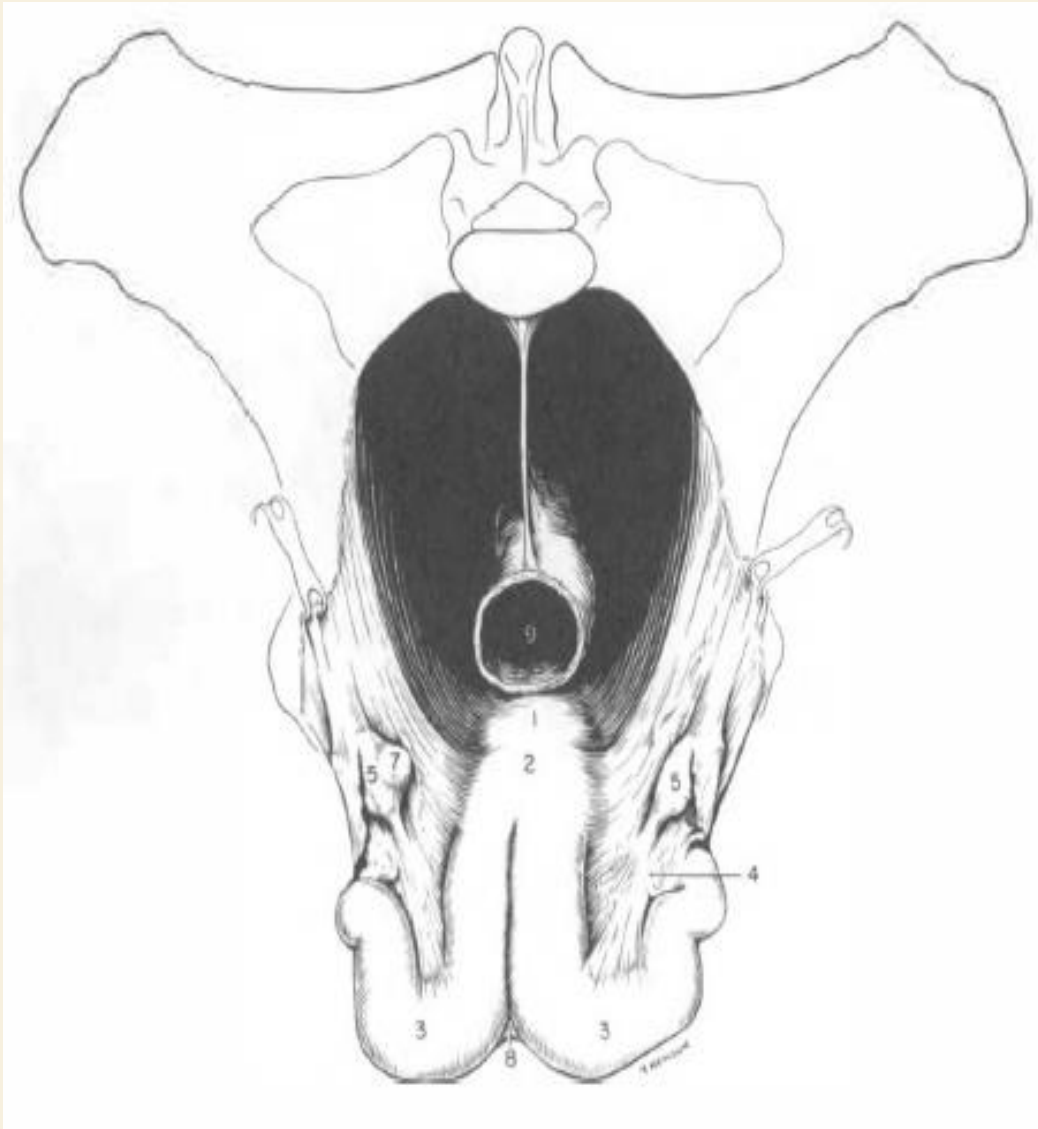
Part closest to the oviduct, where the actual fertilization occurs.

## 4. Isthmus

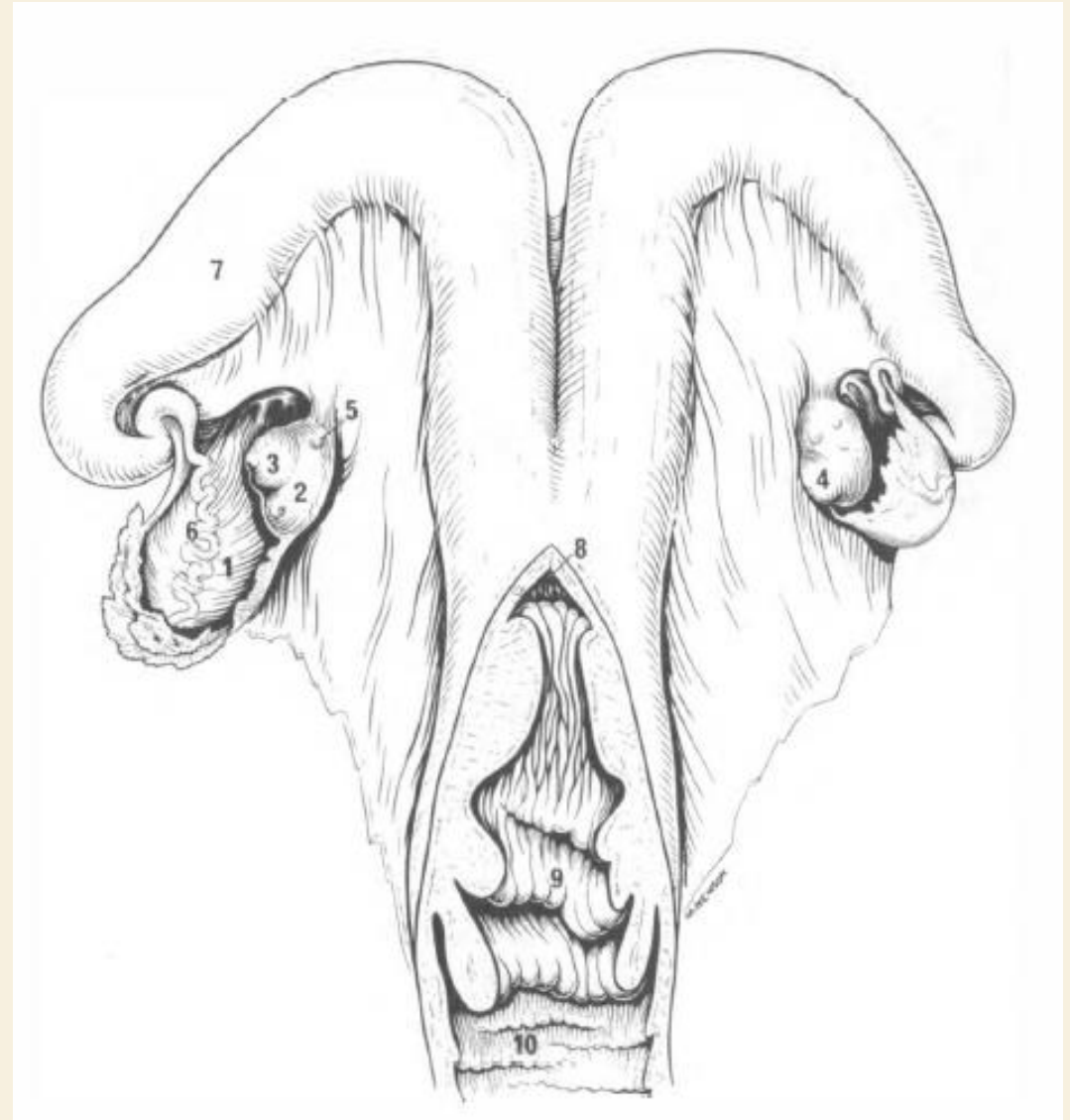
It holds spermatozoa as they mature in a process called capacitation.

# ANATOMIE DE L'APPAREIL GÉNITAL DE LA VACHE





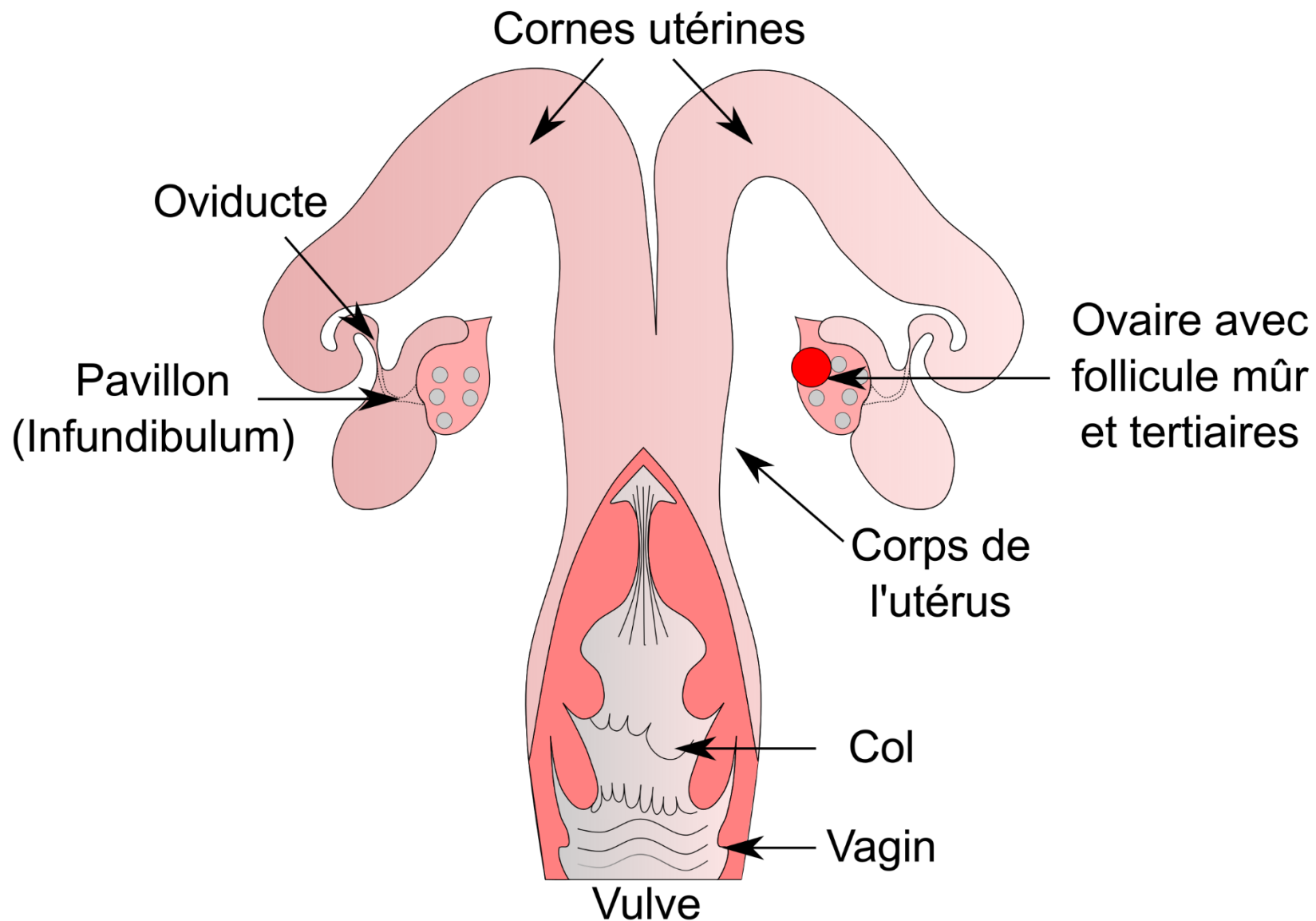
Nonpregnant uterus of the cow, cranial aspect.  
 1. Cervix, 2. Body of uterus, 3. Horn of uterus, 4. Uterine tube, 5. Ovaries, 6. Ovarian ventricle, 7. Corpus luteum, 8. Intercomual ligament, 9. Rectum.



Uterus of cow, dorsal aspect. 1. Ovarian bursa, 2. Ovary, 3. Corpus luteum, 4. Follicle, 5. Corpus albicans, 6. Uterine tube, 7. Uterine horn, 8. Uterine body, 9. Cervix, 10. Vagina.



# APPAREIL REPRODUCTEUR DE LA VACHE



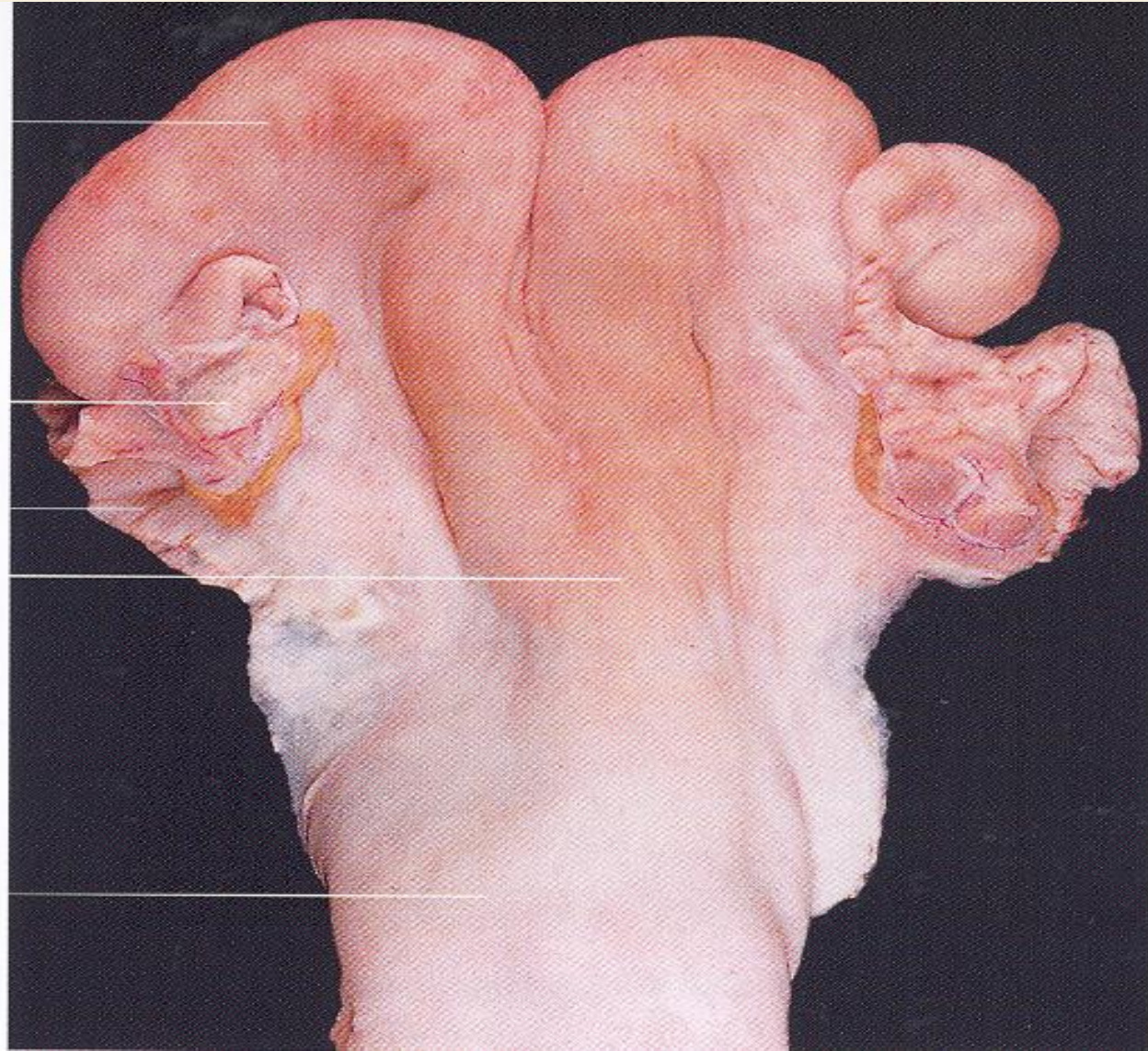
Uterus horn

Ovary

Salpinx

Body of the  
uterus

Cervix







Oviductes  
(30 cm)

Ovaires  
(3-4cm)

Cornes utérines  
(40 cm)

Corps utérin (3 cm)

Col utérin (10 cm)

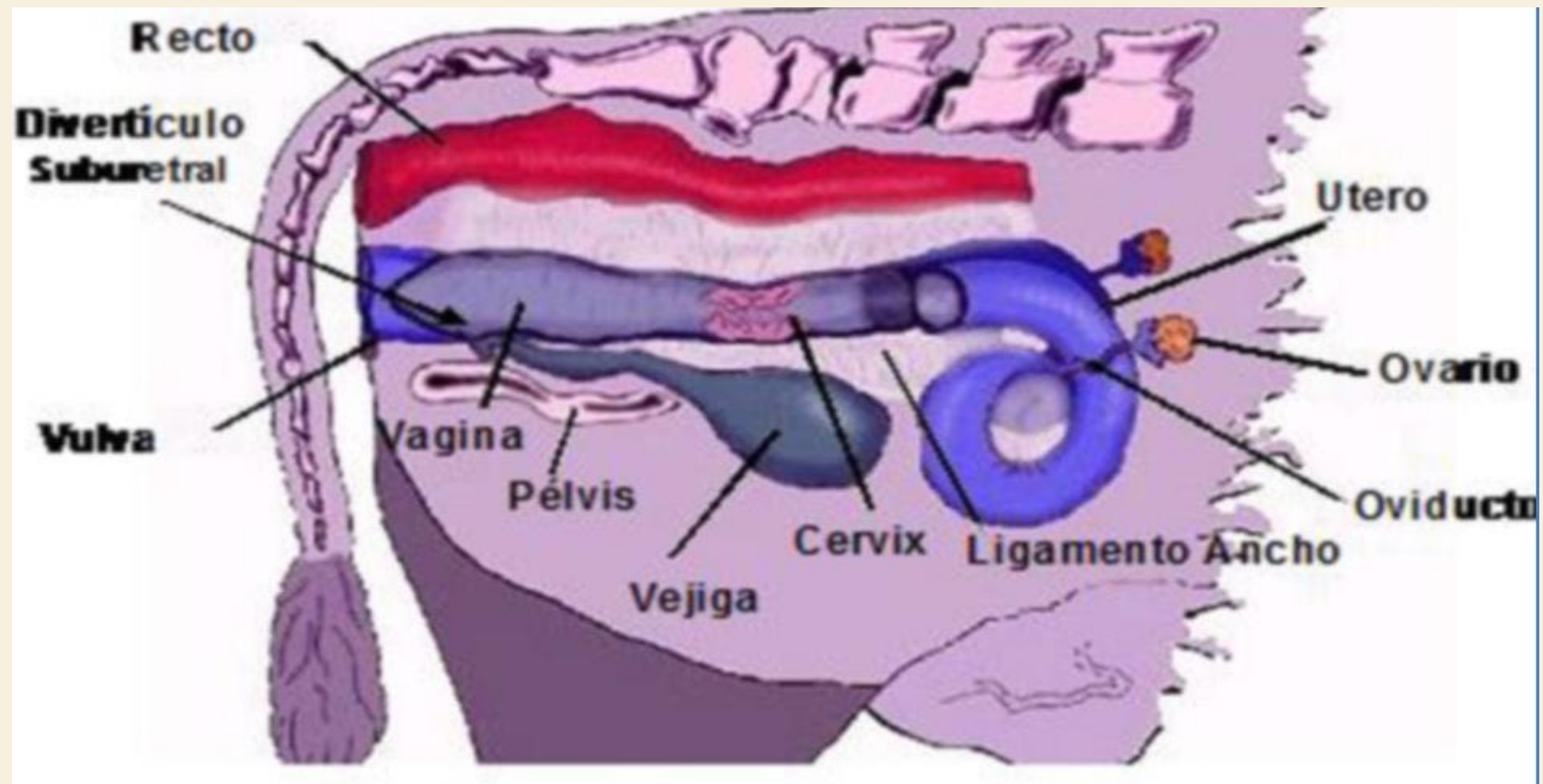
Une bonne palpation doit  
être systématique  
et complète  
**Magic number 7**

- Vestibule vulvaire (10 cm)  
- Cavité vaginale (30 cm)

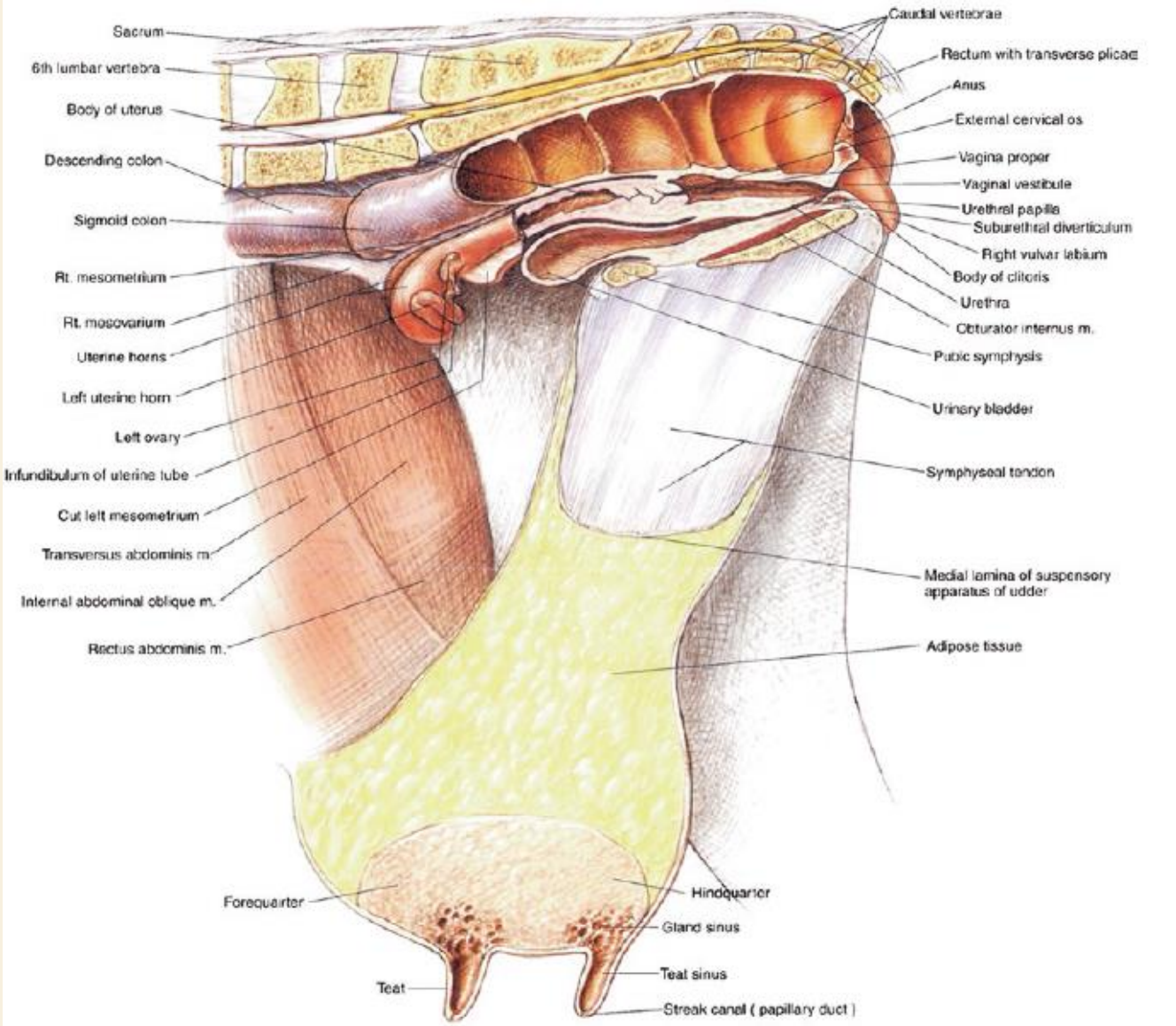




# ANATOMIE DE L'APPAREIL GÉNITAL DE LA VACHE



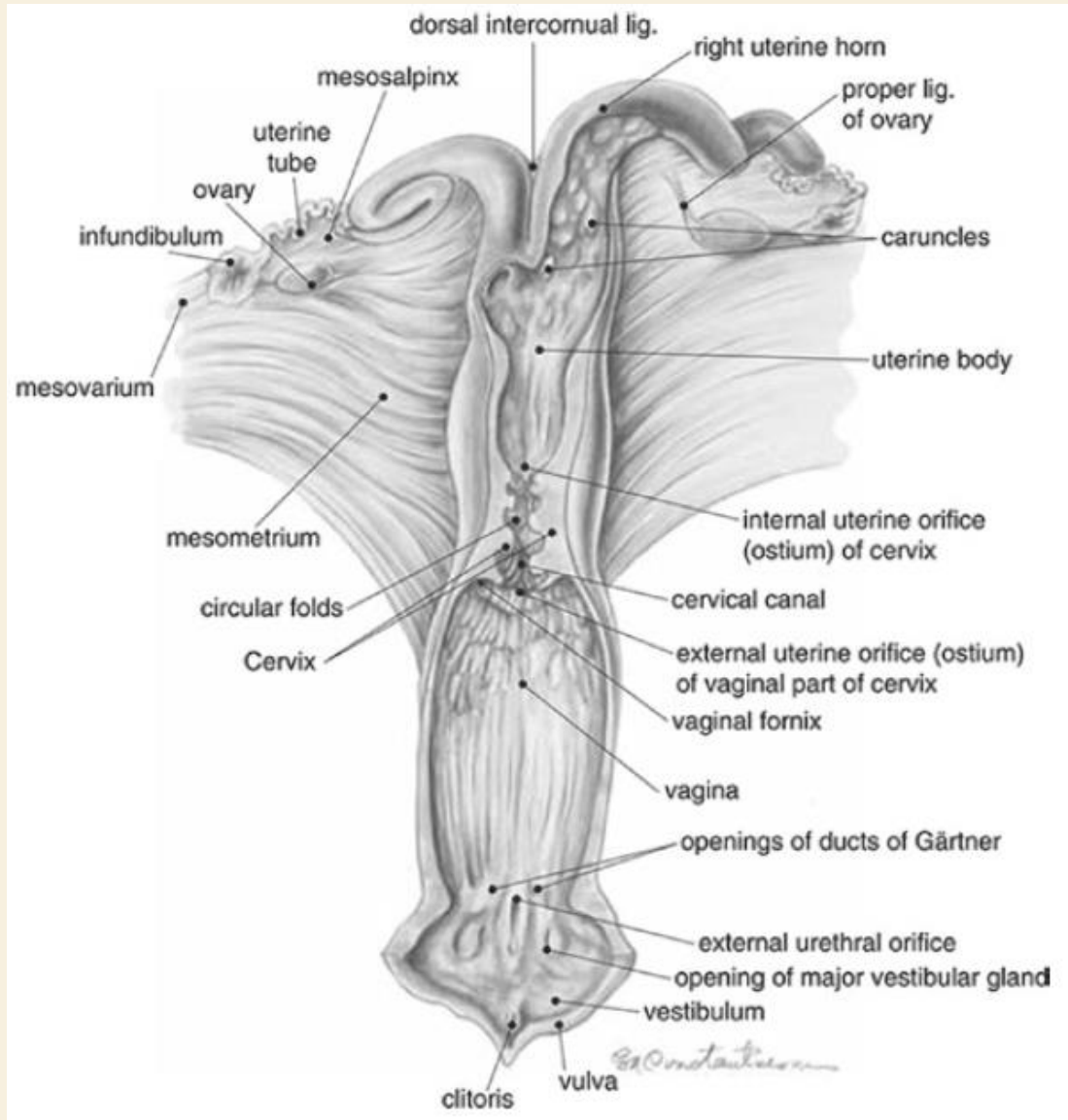
# ANATOMIE DE L'APPAREIL GÉNITAL DE LA VACHE



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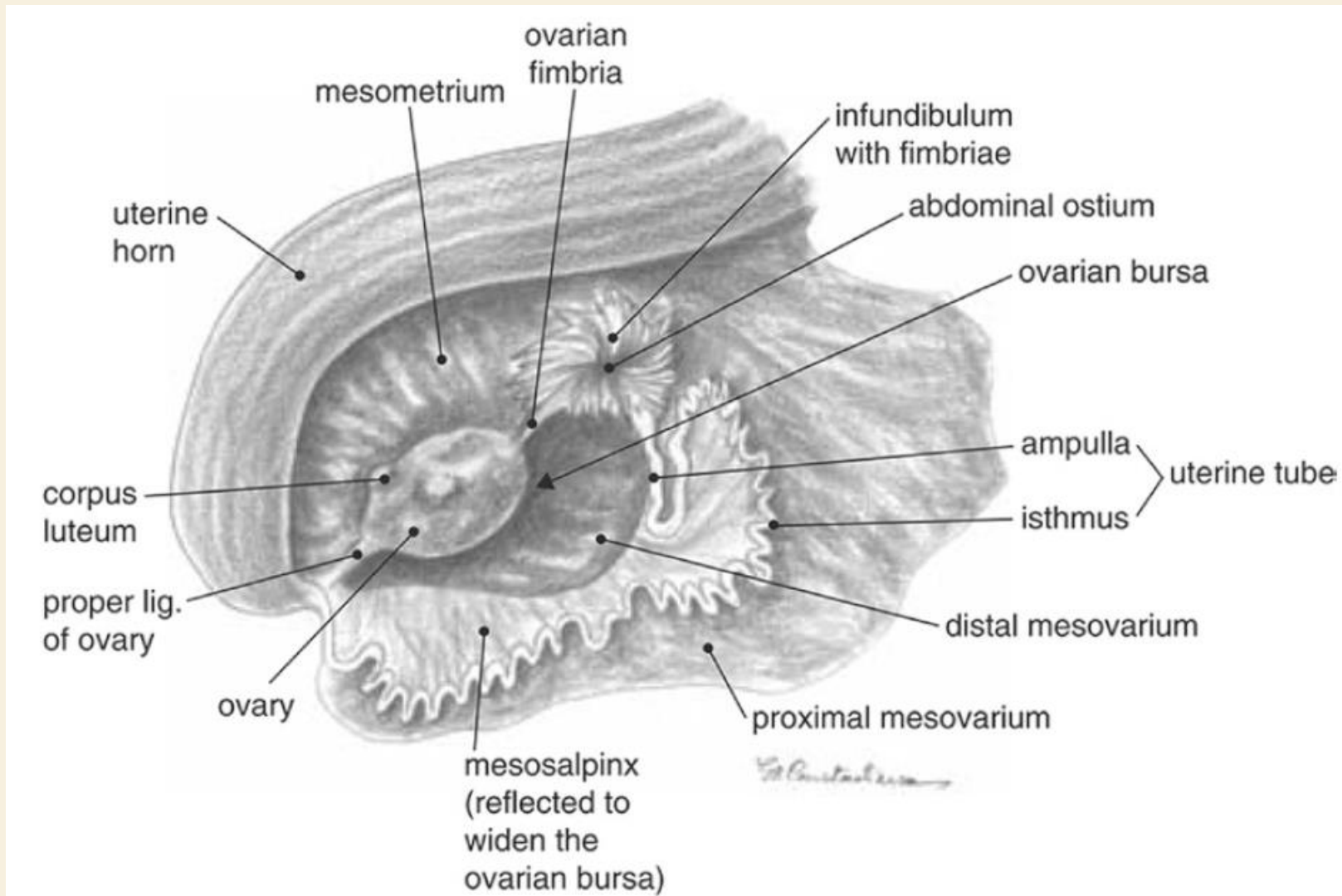


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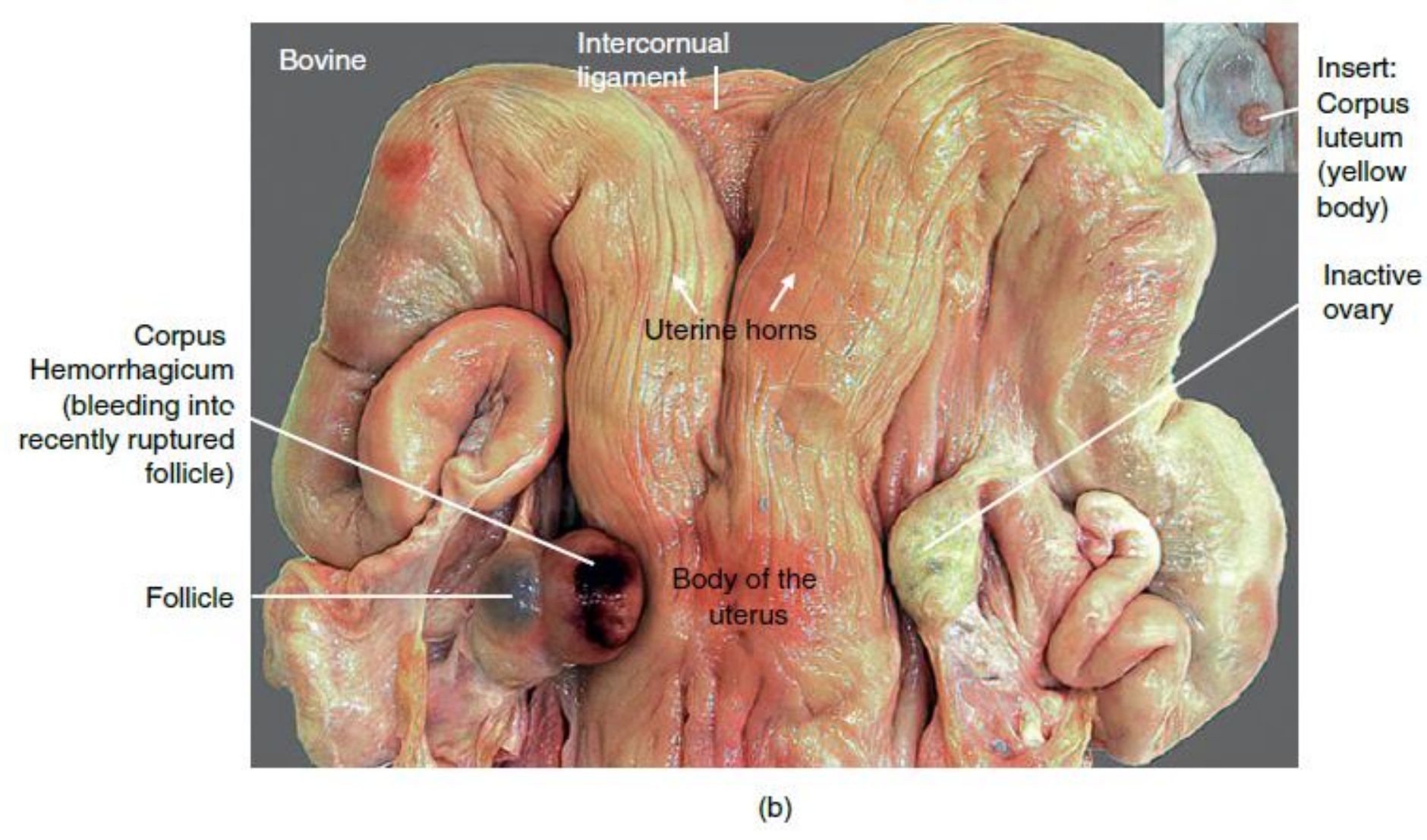


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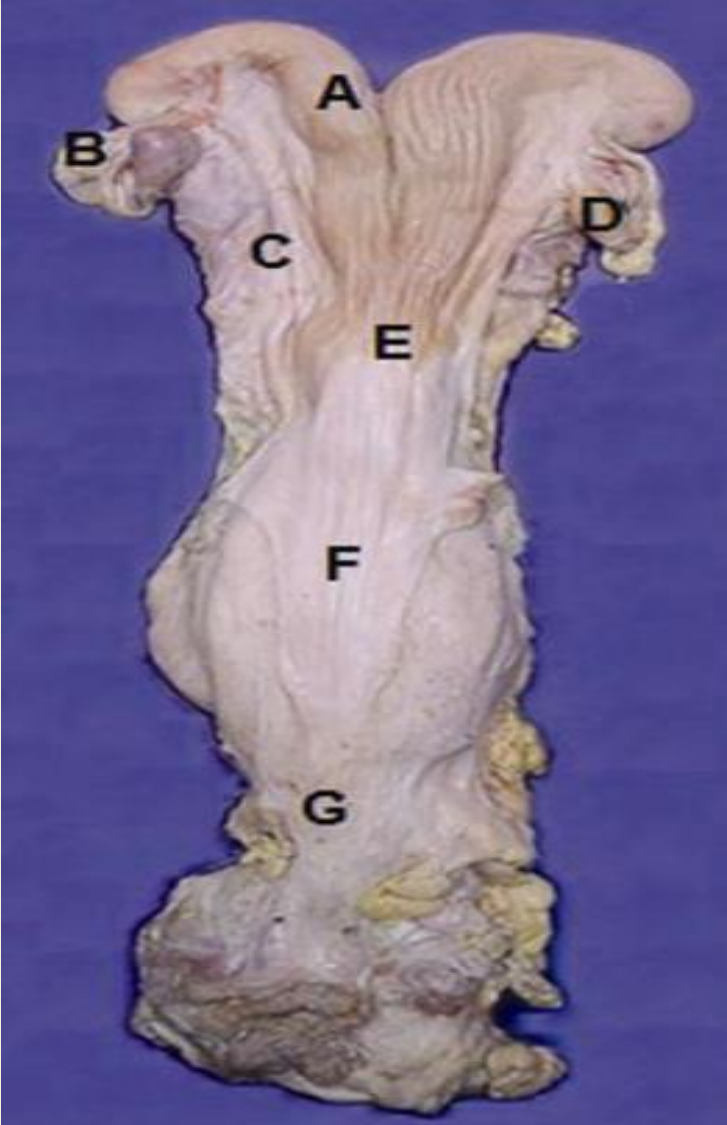
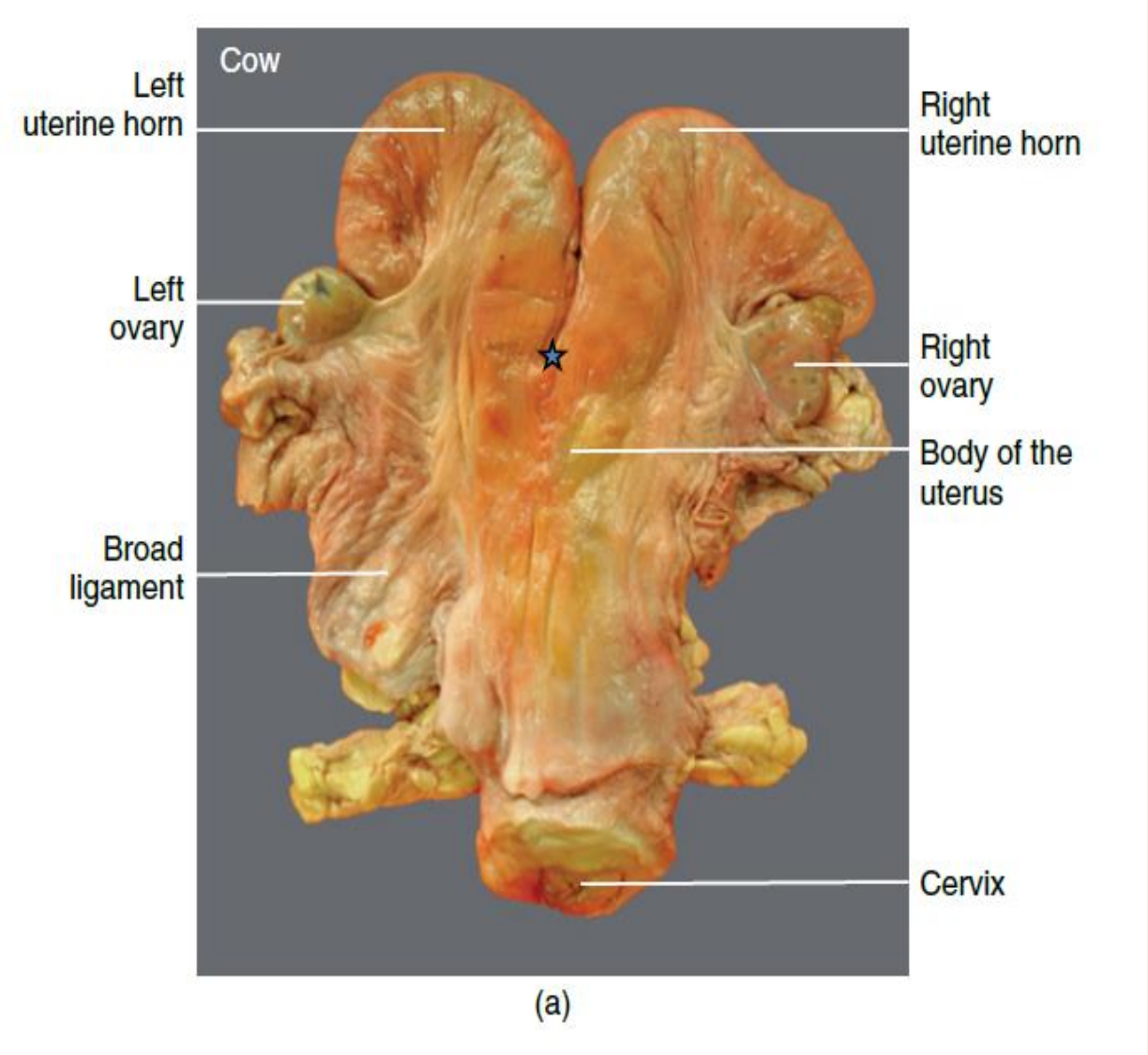


Gross anatomy of the reproductive organs. Legend: Top, overall (dorsal) view; button, ovary and oviduct morphology. (Adapted from Constantinescu [3] with permission from John Wiley and Sons)

# ANATOMIE DE L'APPAREIL GÉNITAL DE LA VACHE

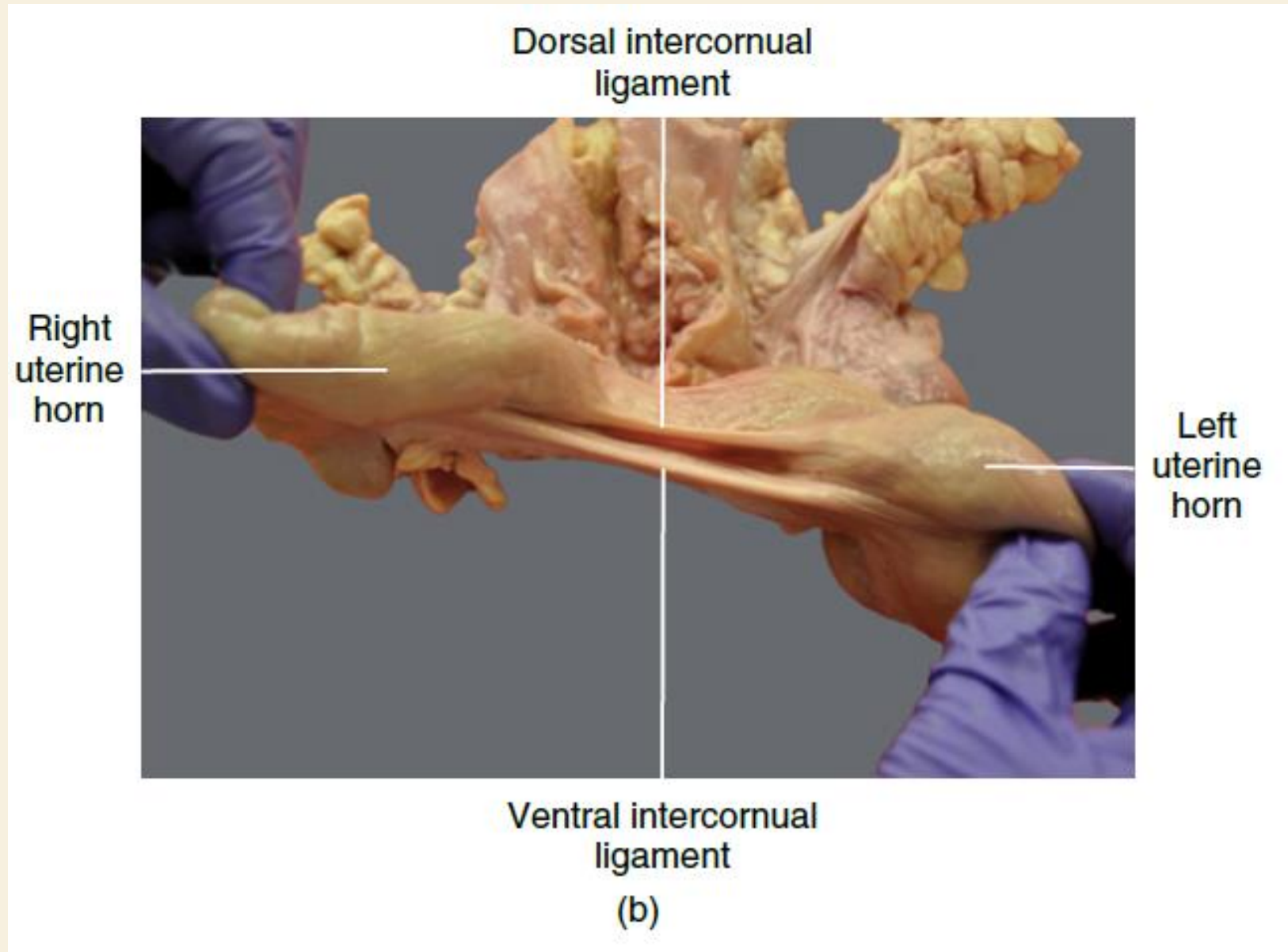


# ANATOMIE DE L'APPAREIL GÉNITAL DE LA VACHE





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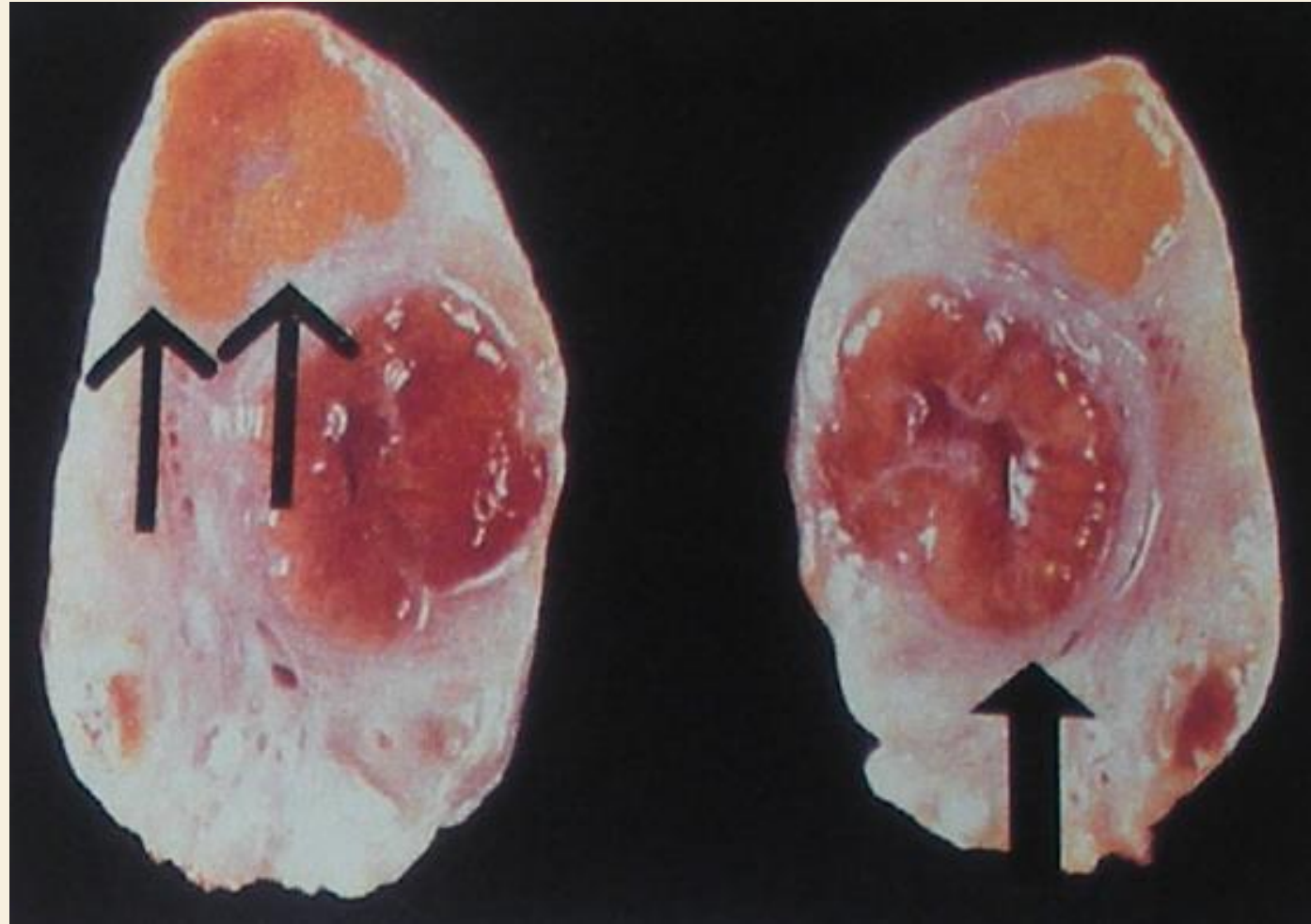


Présence d'un corps jaune hémorragique



Présence d'un follicule de 5 mm

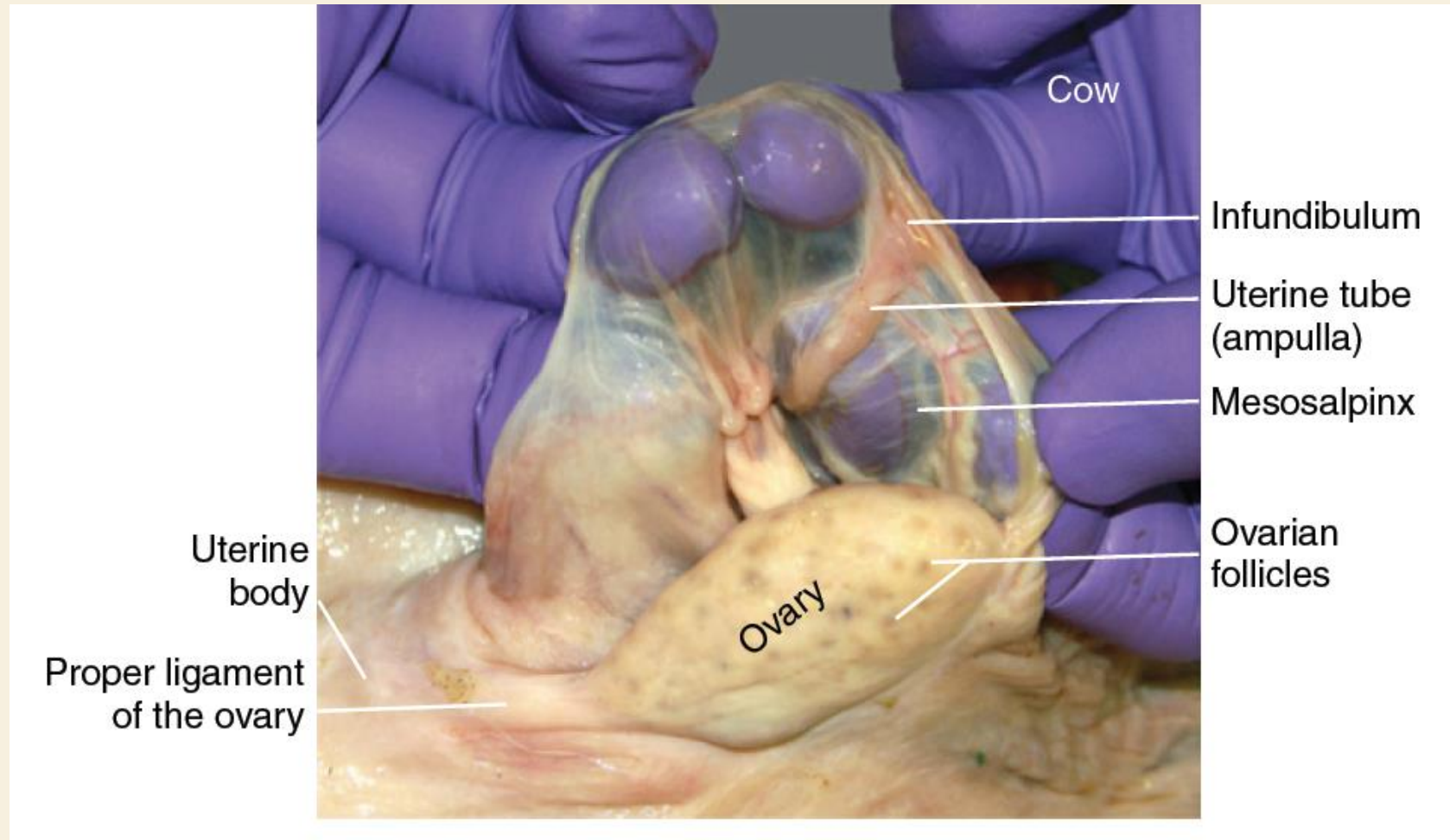
# ANATOMIE DE L'APPAREIL GÉNITAL DE LA VACHE



Ovaires de vache. Corps jaunes, Drost M, Gainesville, Florida,

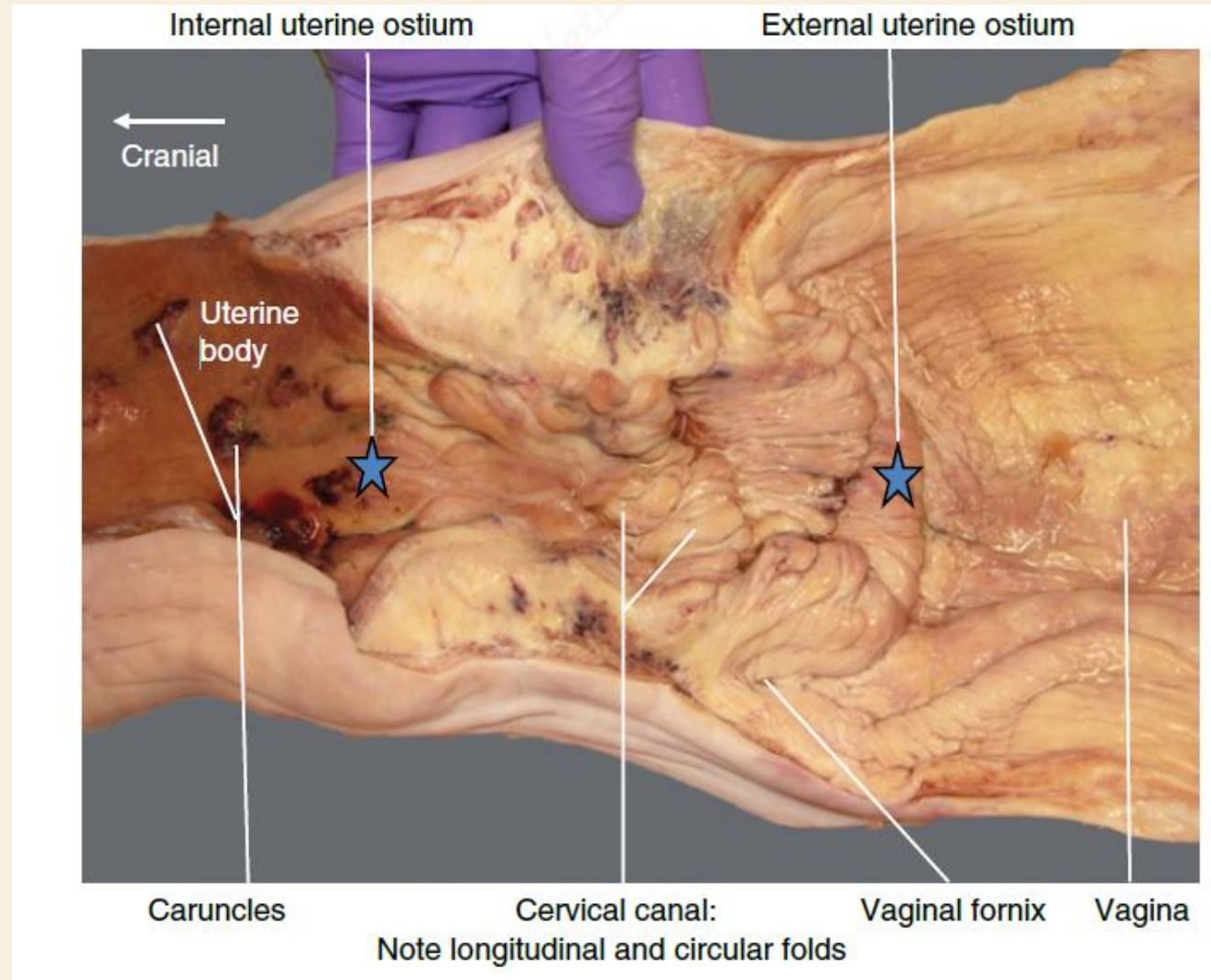


# ANATOMIE DE L'APPAREIL GÉNITAL DE LA VACHE



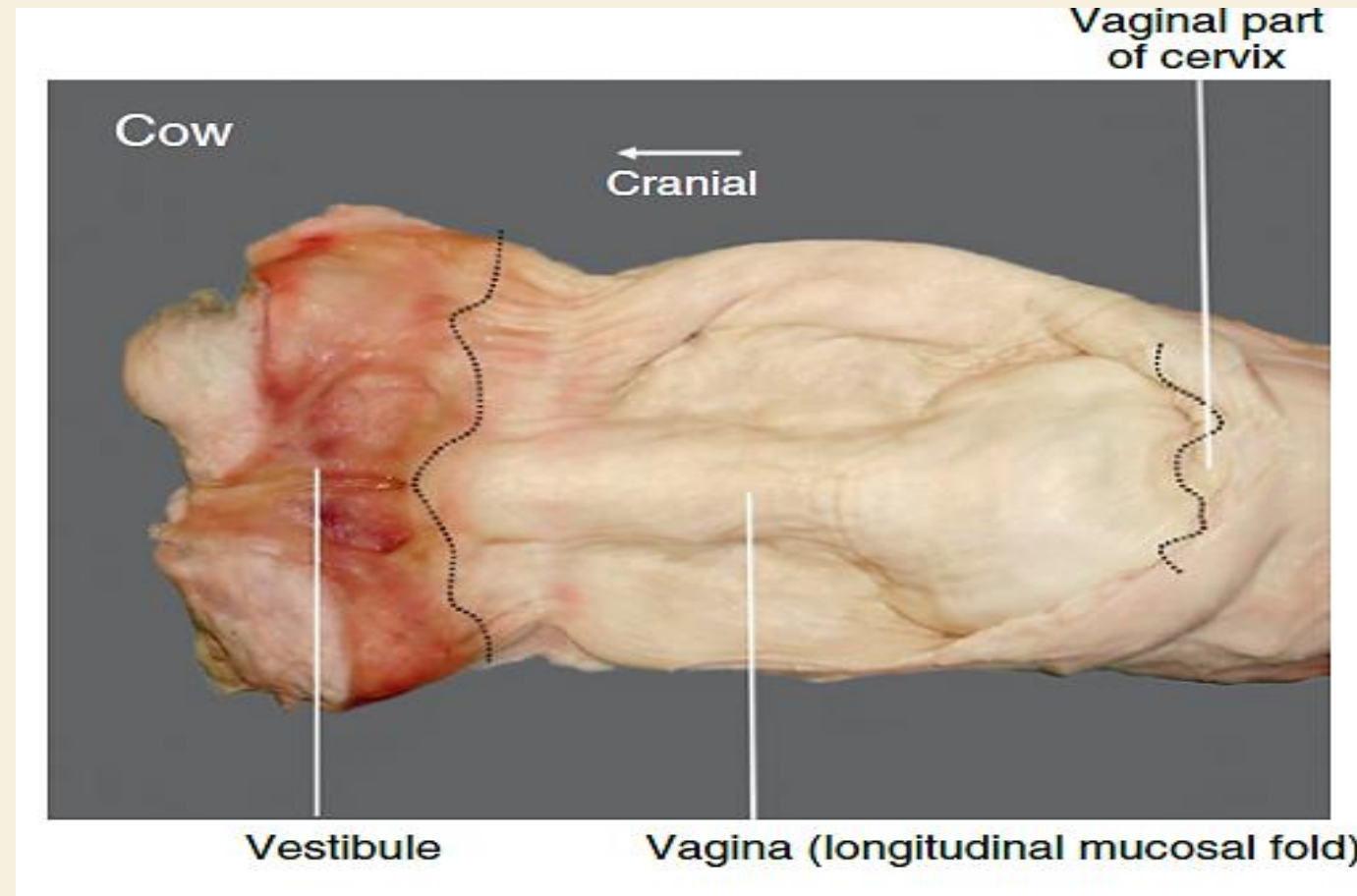
Bovine ovary (cow). Ovarian bursa opened

# ANATOMIE DE L'APPAREIL GÉNITAL DE LA VACHE



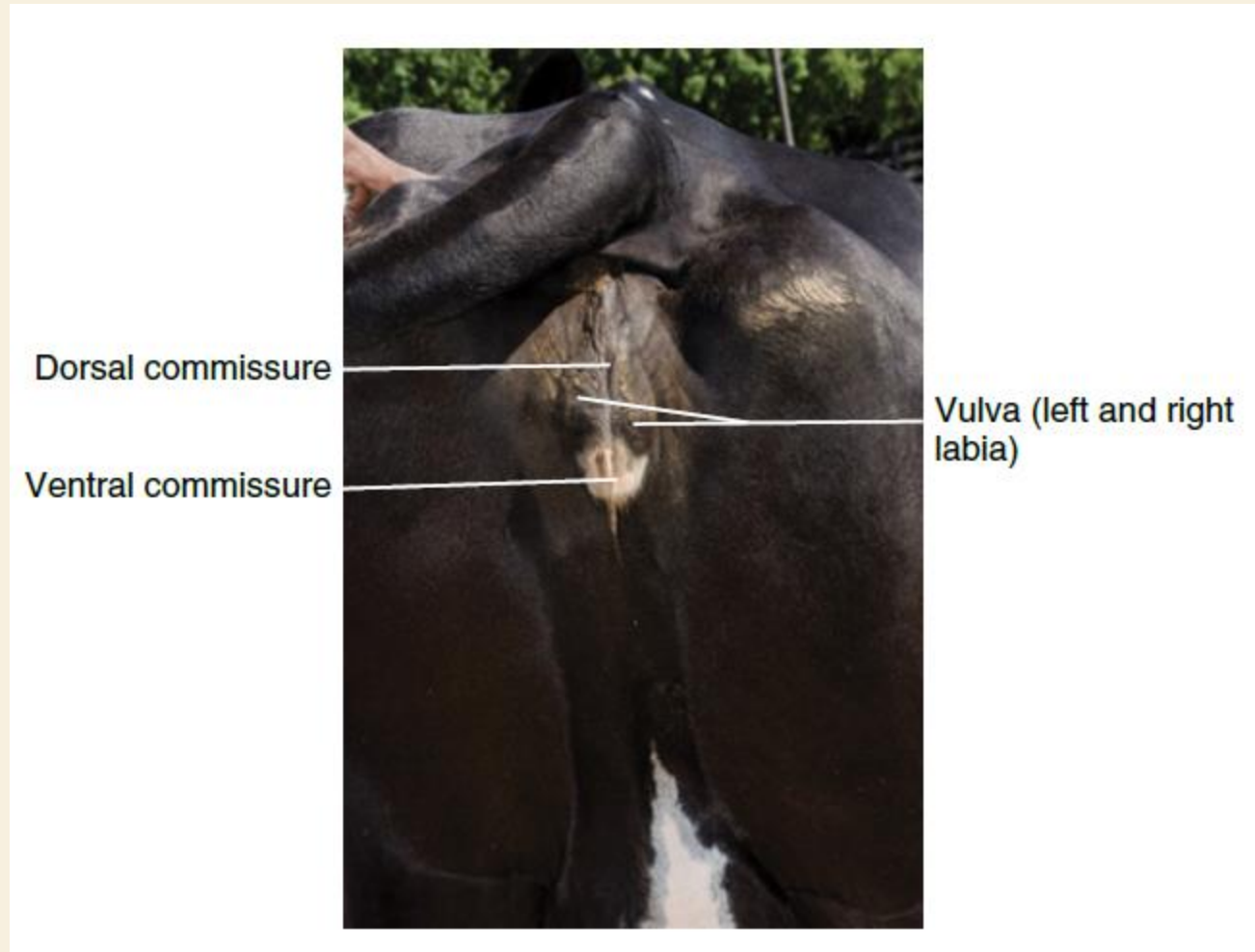
Bovine (cow) cervix opened dorsally to demonstrate the cervical canal, and the internal (toward the uterine body) and external (toward the vagina) uterine orifices.

# ANATOMIE DE L'APPAREIL GÉNITAL DE LA VACHE



Bovine (cow) reproductive tract (vagina and vestibule): dorsal view. The tract is opened ventrally looking into the roof. Note the large dorsal longitudinal fold on the roof of the vagina. For clarification of the location of the suburethral diverticulum.



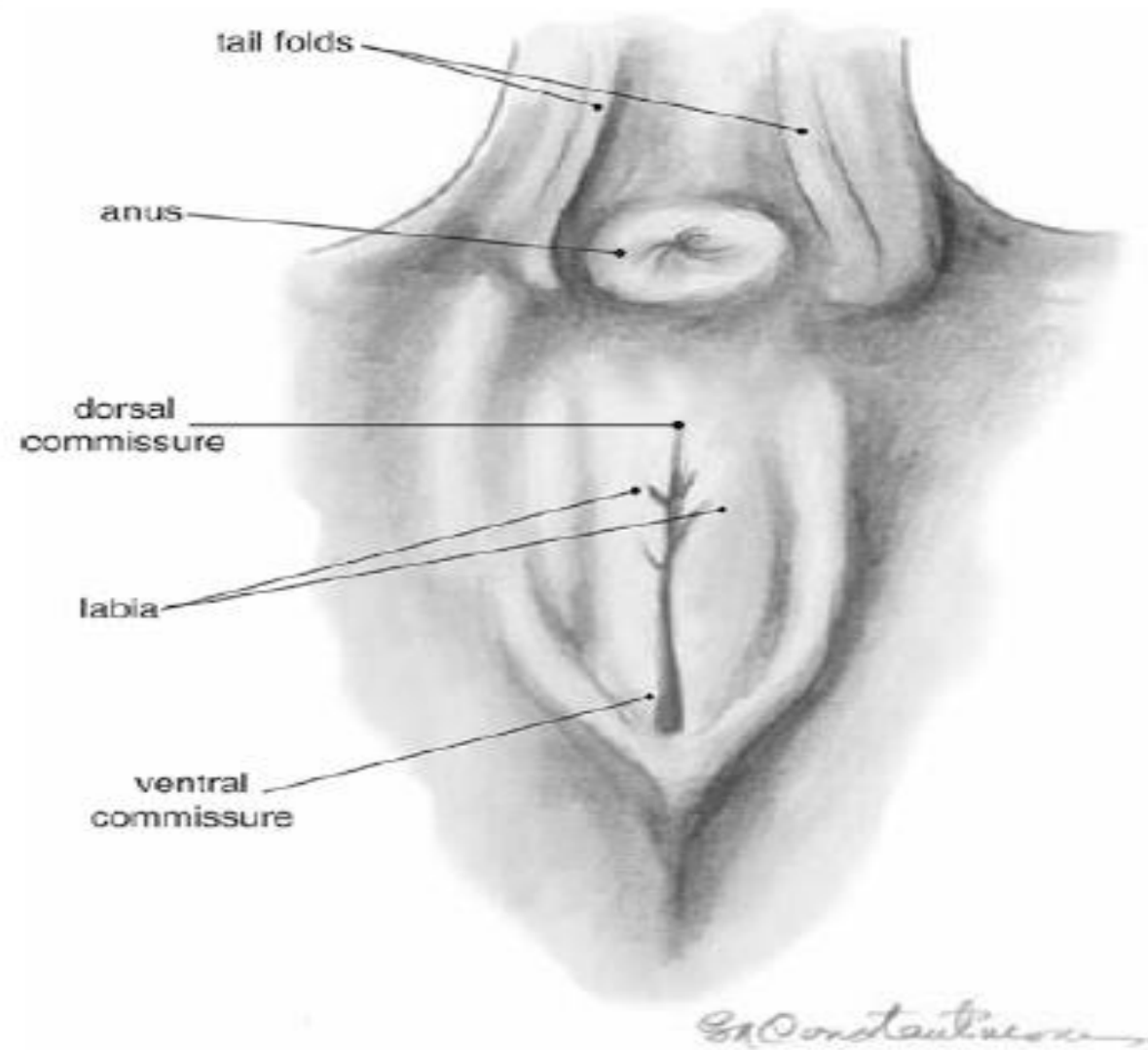


Dorsal commissure

Ventral commissure

Vulva (left and right labia)

External genitalia of the cow



**Fig. 1.1** Vulva and perineal region of the cow. (Adapted from Constantinescu [3] with permission from John Wiley and Sons)

# CONTENTION DE LA VACHE







۹۳۰۲۱



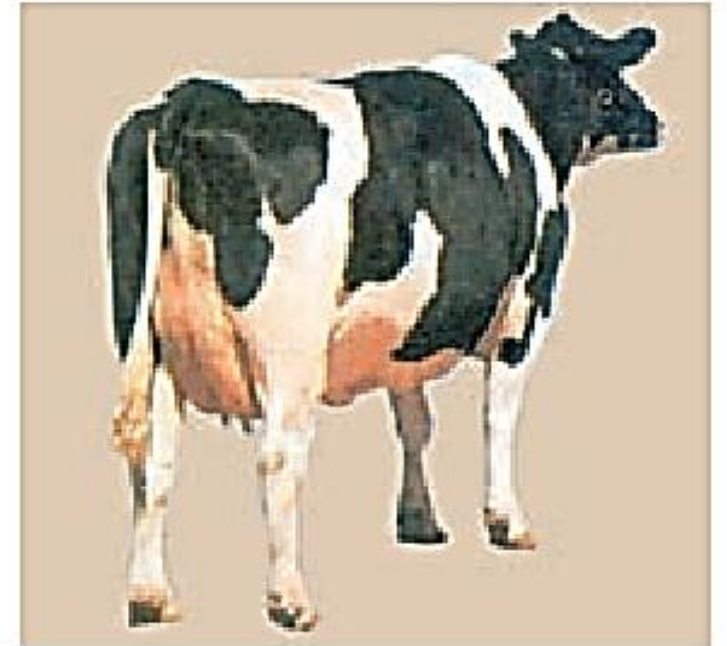
**System: 1 to 5 scale**



1  
poor



3



5  
grossly fat

Three pictures of cows scoring 1, 3 or 5 for body condition (De Jong & Hamoen, 2009)





Giorgio Solpi

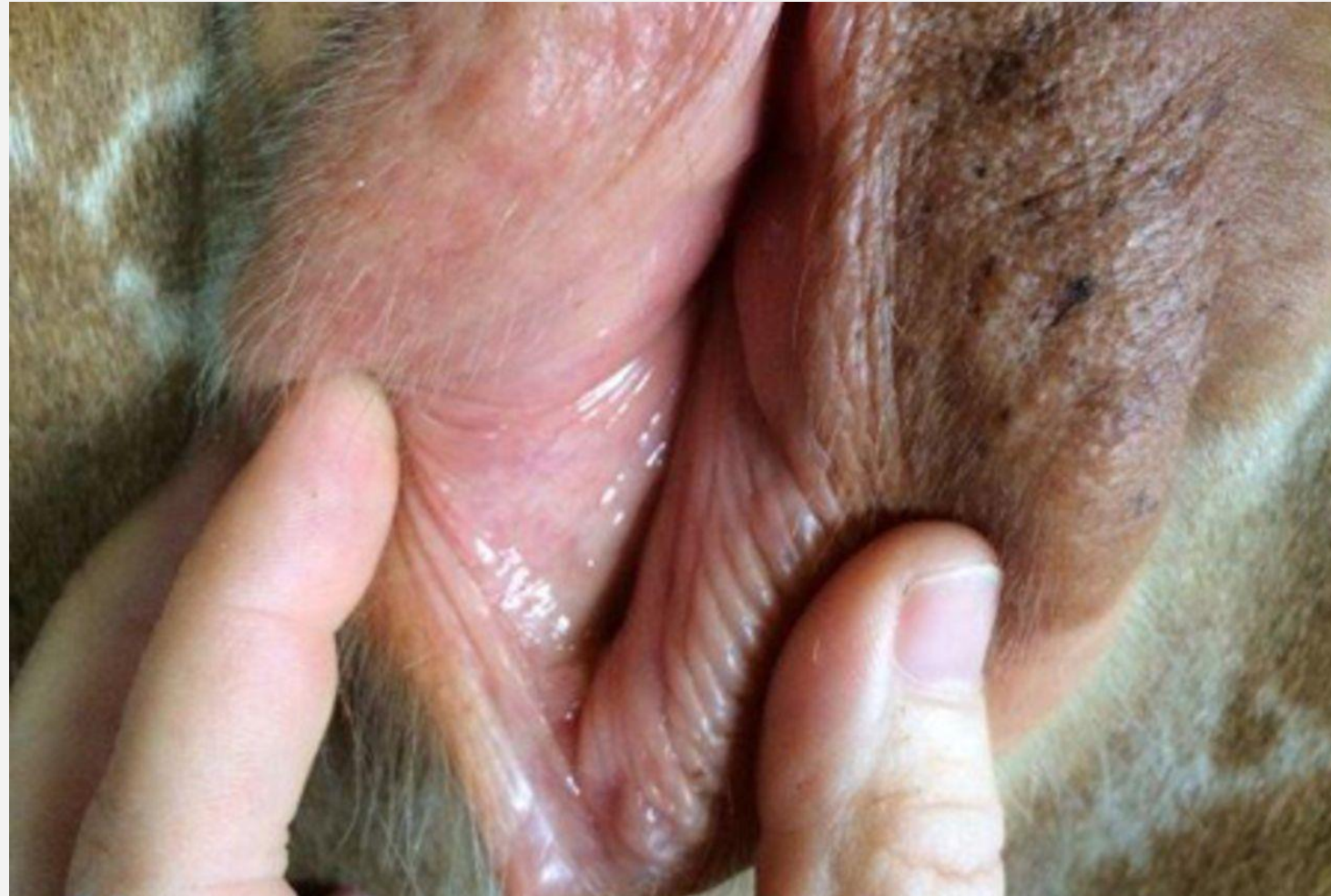




## LÉSIONS CUTANÉES

Des éraflures ou des lésions cutanées sur l'arrière-train de l'animal indiquent que l'animal a été chevauché.

# Examen de la muqueuse vulvo-vestibulaire (couleur, humidité, évent. lésions)



<https://die-fruchtbare-kuh.ch/fr/fertilite/examen-de-lanimal/lexamen-vaginal/>

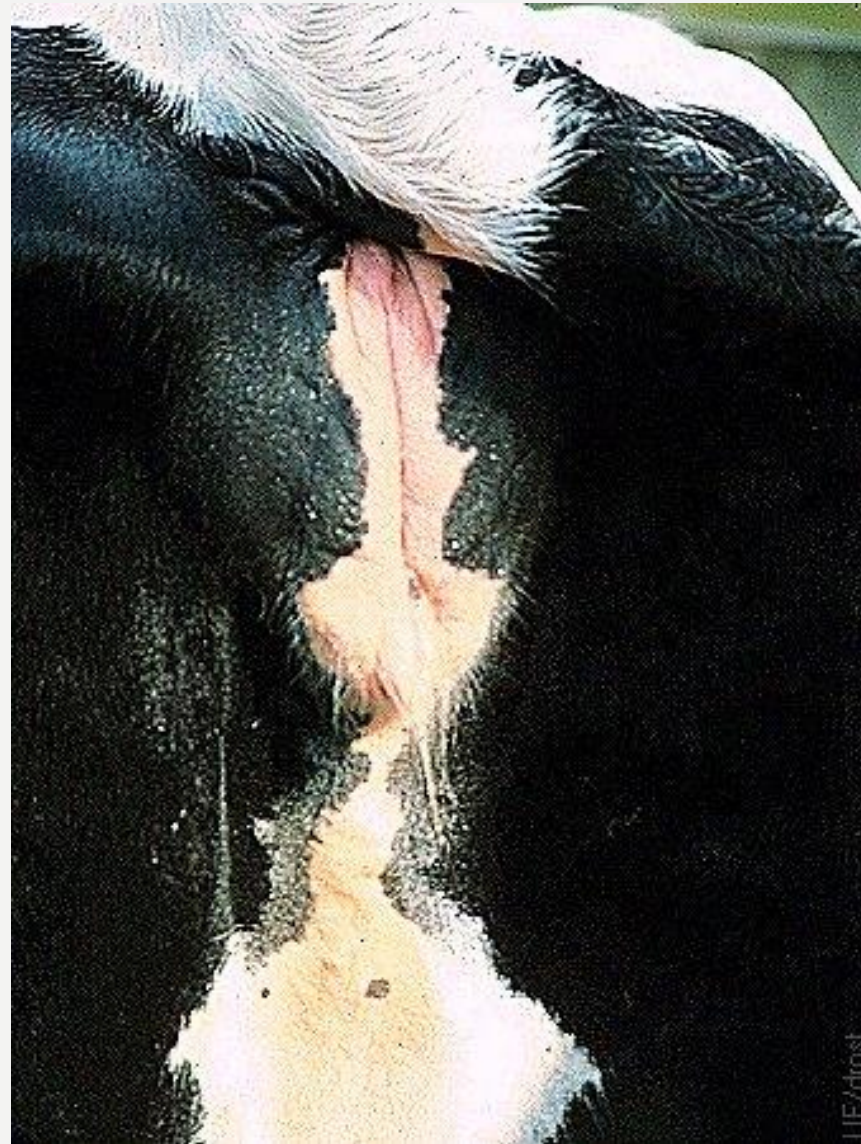


Saignement métoestral





Carcinome épidermoïde vulvaire



Vulve d'une vache en chaleurs





Vulve d'une vache avec une dégénérescence kystique





Pneumovagin



Vulvo-vaginite pustuleuse infectieuse

## Examen à distance

- Etat général, propreté...
- Attitude générale, position antalgique
- Pathologies de l'appareil locomoteur

## Examen rapproché

- Bassin et ligament sacro-sciatiques
- Queue, vulve et périnée
  - Glaïres
    - Translucides, filantes
    - Troubles, cassantes
  - Pus
- Vulve
  - Position oblique
  - Enfoncement dans le bassin
  - Intégrité des lèvres vulvaires
  - Présence de glaïres/pus

## Inspection interne vulve

- Pustules/Vésicules
- Couleur

## Palpation externe des lèvres de la vulve

- Minces
- Tuméfiées
- Déformées

## Examen à distance

- Péritonite...
- Non chevauchement...

## Examen rapproché

- Vache « cassée »: préparation à la MB
- Queue, vulve et périnée
  - glaïres
    - Chaleurs
    - Métrite
- Vulve
  - Maigreur
- Lésions, suites de mise bas
- Chaleurs/métrite/pyomètre

## Inspection interne vulve

- IPV...
- Anémie, chaleur

## Palpation externe des lèvres de la vulve

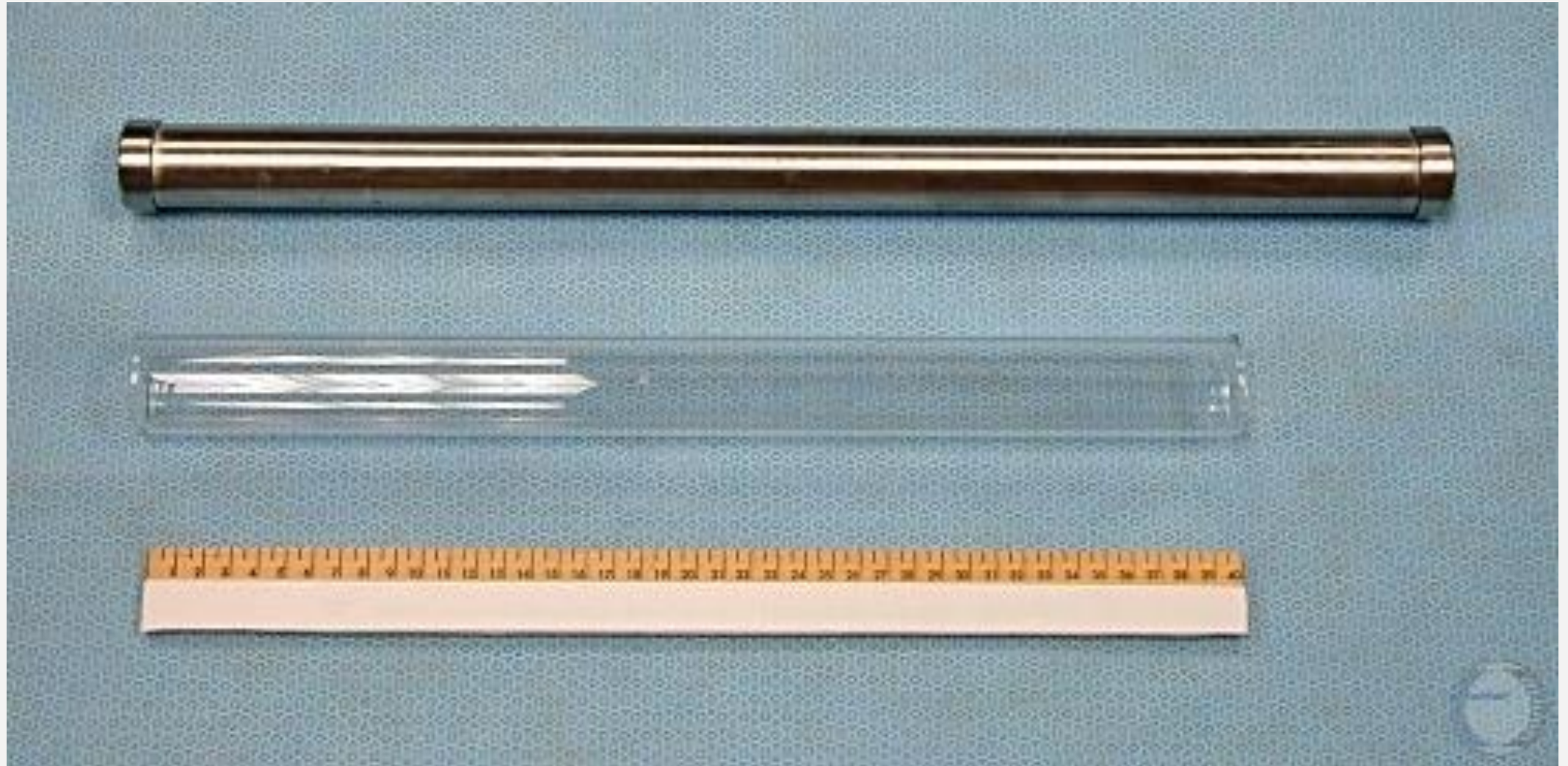
- Free martin
- Chaleurs
- Cicatrices, abcès, tumeurs



# LA VAGINOSCOPIE



# VAGINOSCOPIES







Spéculums

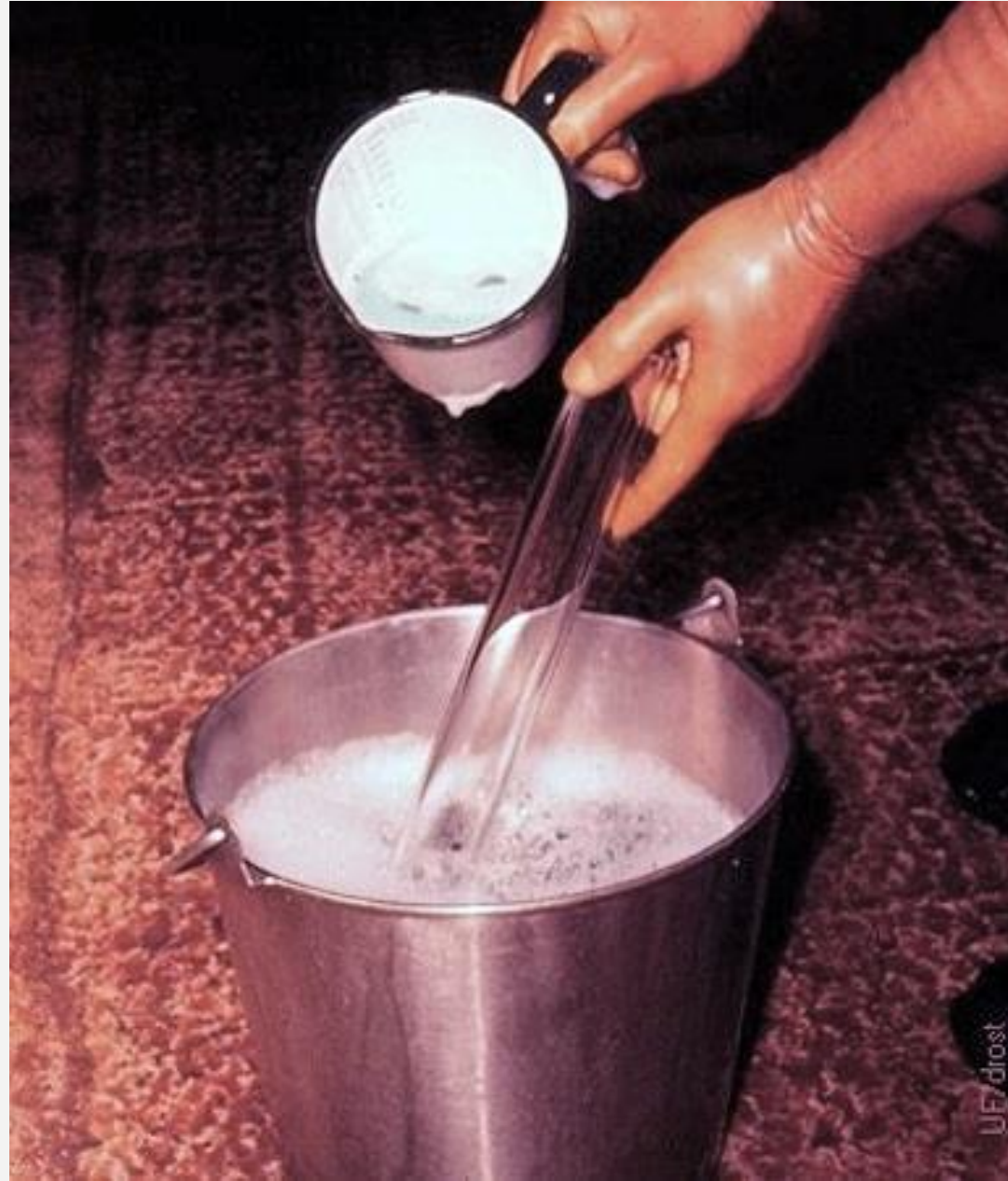


# NETTOYER LA RÉGION PÉRIGÉNITALE



# NETTOYER LA RÉGION PÉRIGÉNITALE









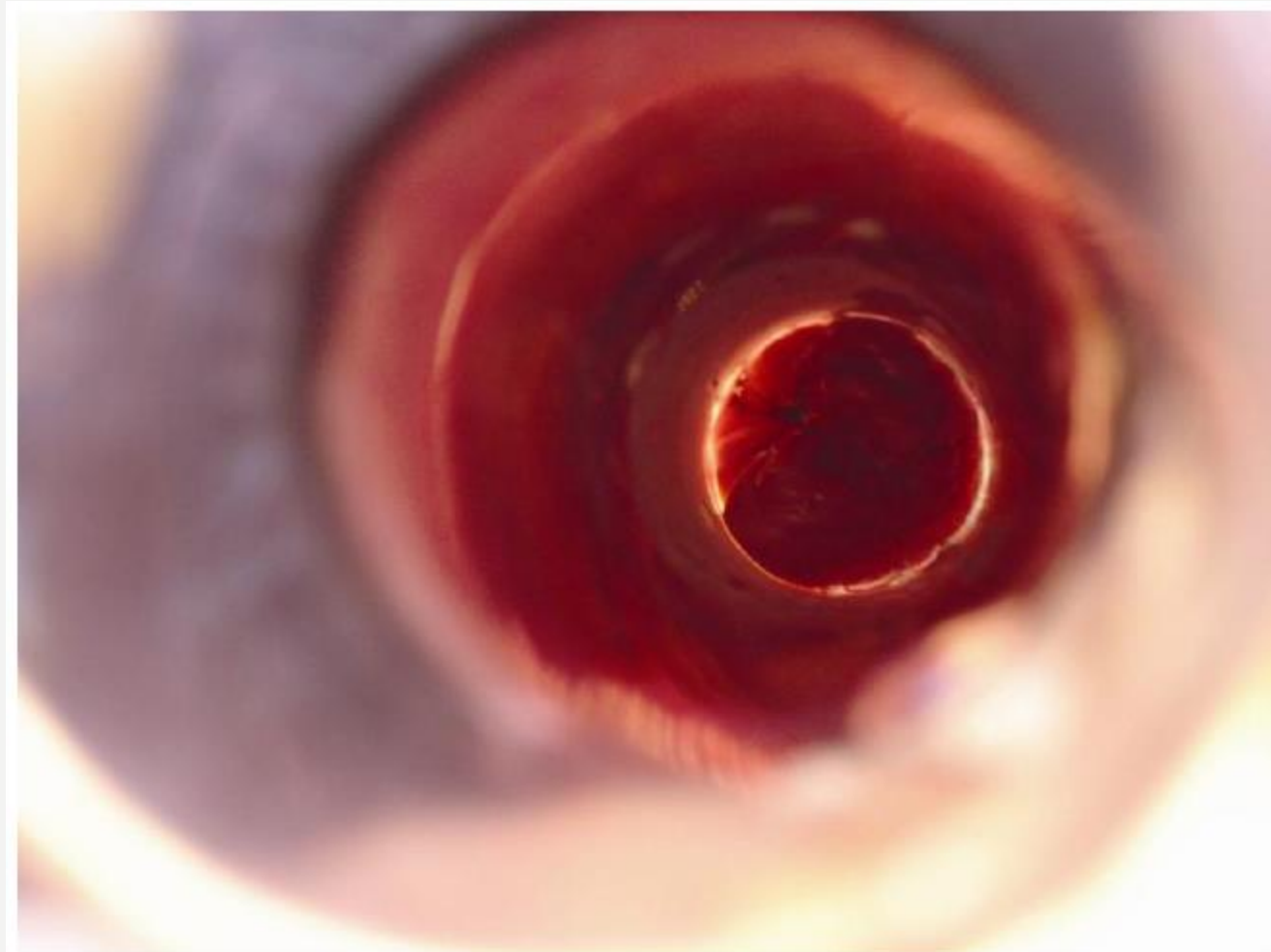
# INTRODUCTION DU SPECULUM VAGINAL











**FIGURA 35.** Vista del orificio externo del cervix

# INFORMATIONS À RECHERCHER

- Les glaires de chaleurs





# INFORMATIONS À RECHERCHER

- Des glaires mucosanguinolentes



# LOCHIES







Blood tinged mucous discharge.

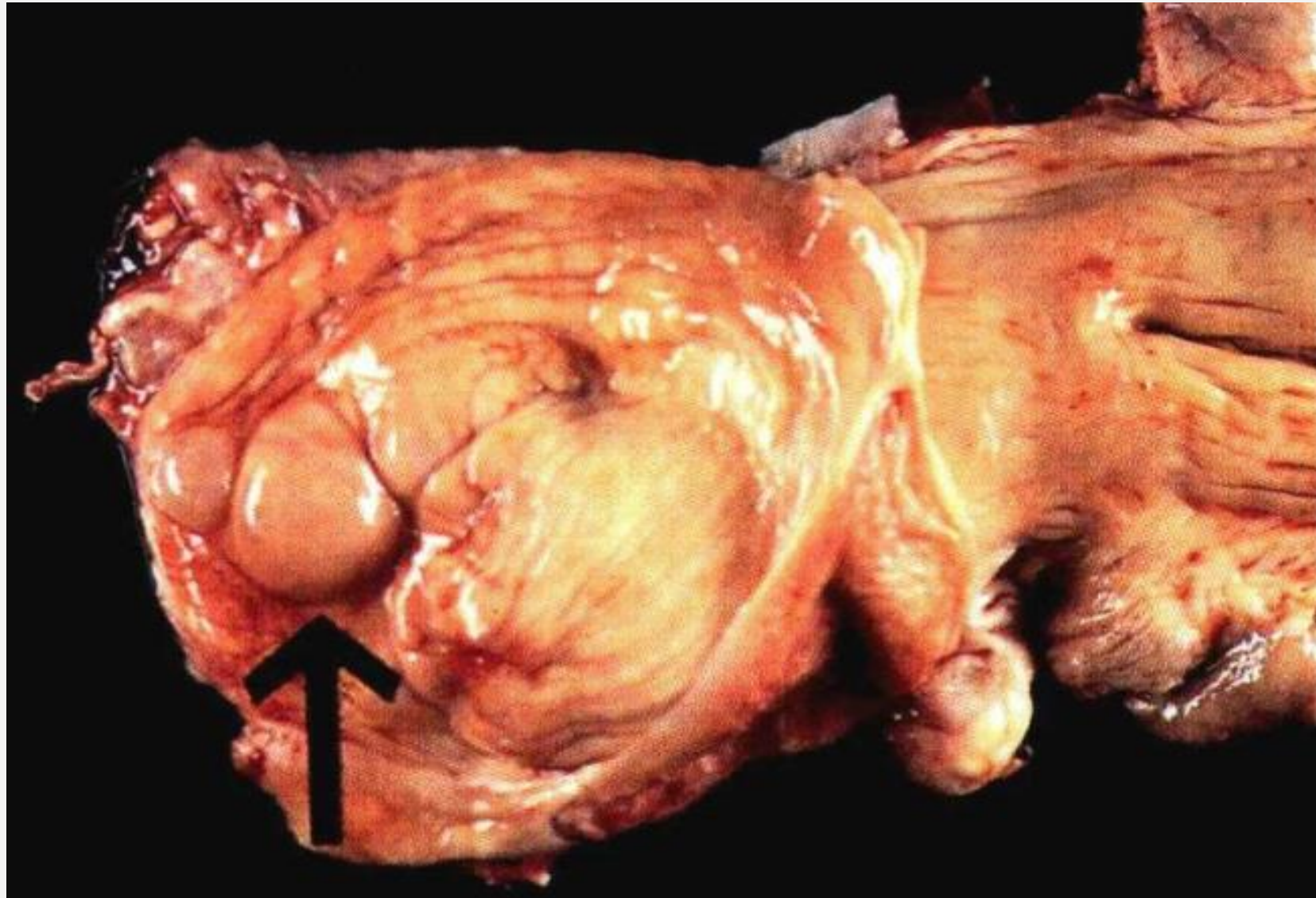
Odorless, slightly blood tinged vaginal mucus is normal during the first week post partum



# SÉCRÉTIONS ANORMALES LORS DE MÉTRITE

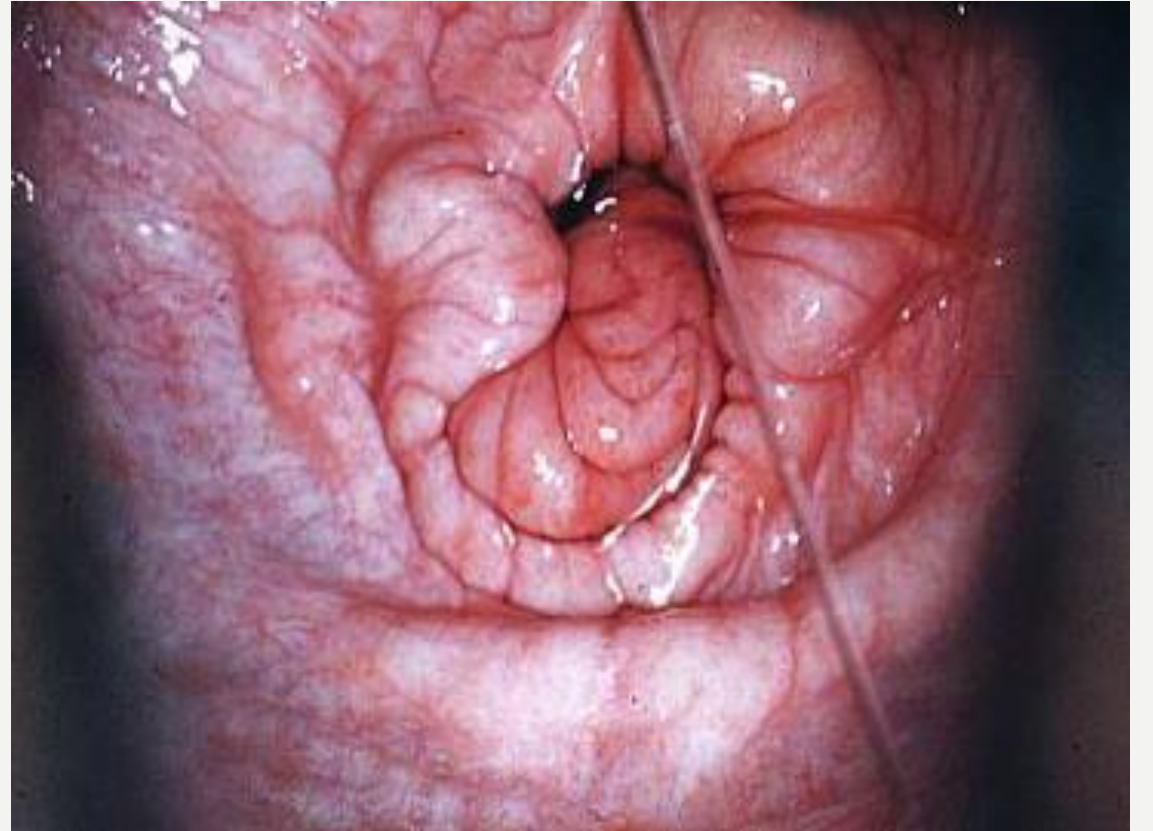
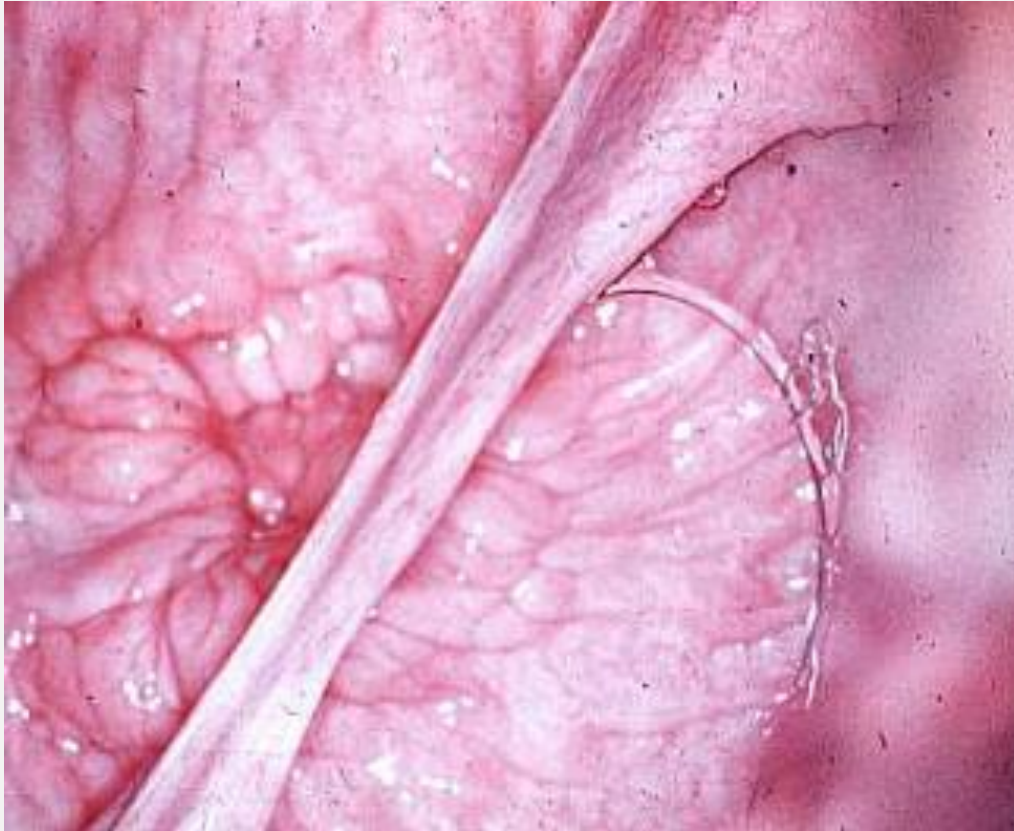


# UTÉRUS DE VACHE: KYSTES DES CANAUX DE GARTNER





# BRIDES VAGINALES





# UROVAGIN



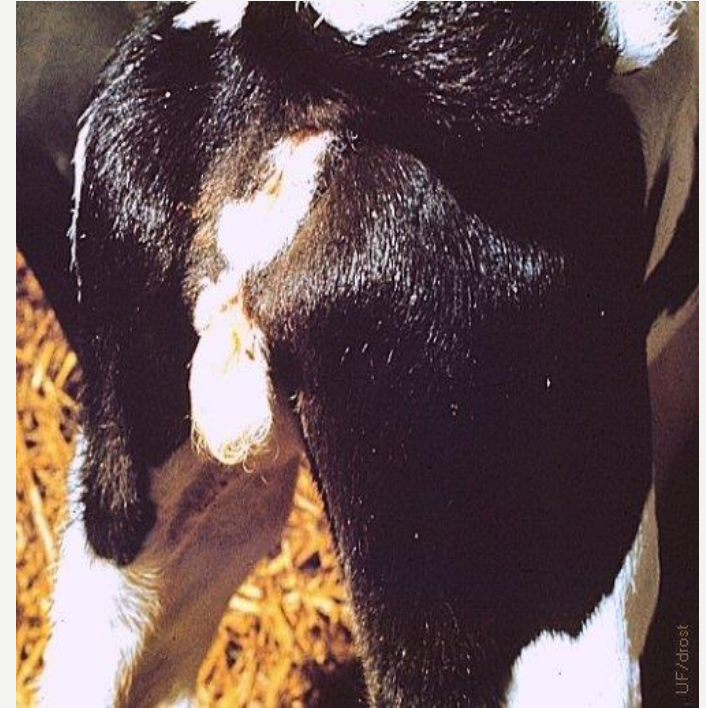
<https://www.web-agri.fr/insemination/article/776182/comment-detecter-les-metrites-ou-anomalies-de-lappareil-genital-de-ses-vaches>

# KYSTES



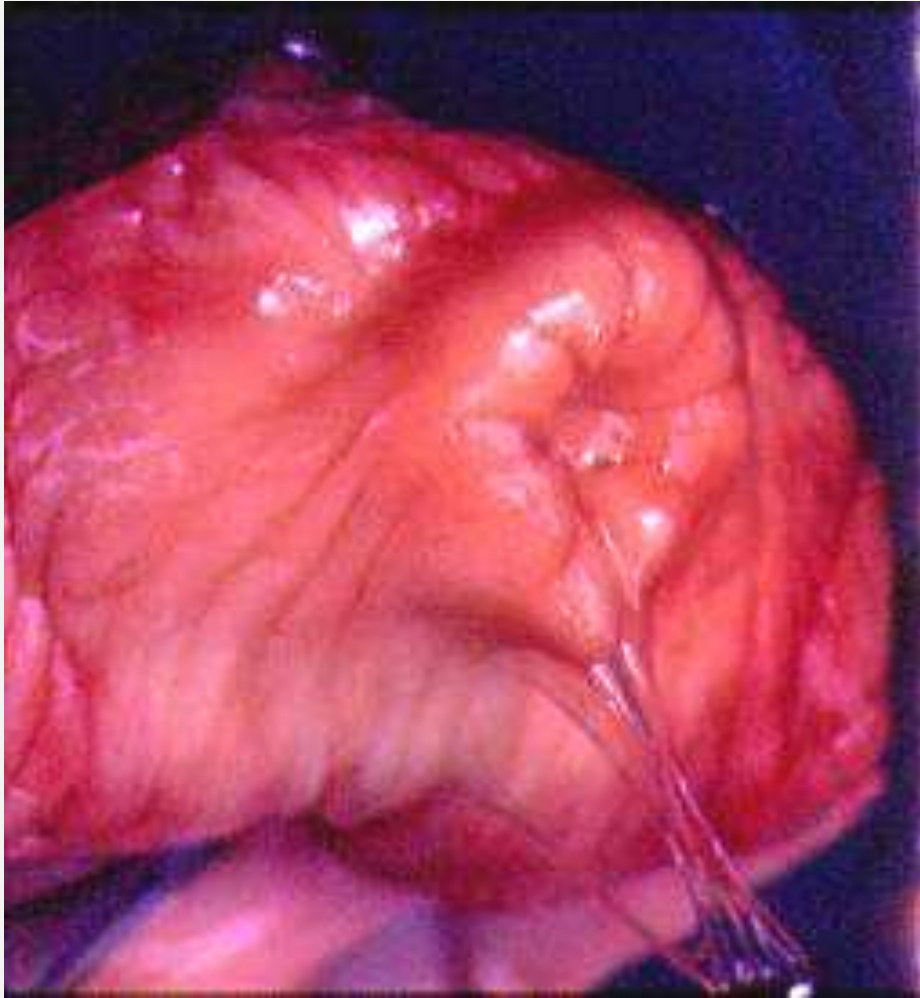
<https://www.web-agri.fr/insemination/article/776182/comment-detecter-les-metrites-ou-anomalies-de-lappareil-genital-de-ses-vaches>

# FEMELLES FREE MARTIN





# PARTIE VAGINALE DU COL



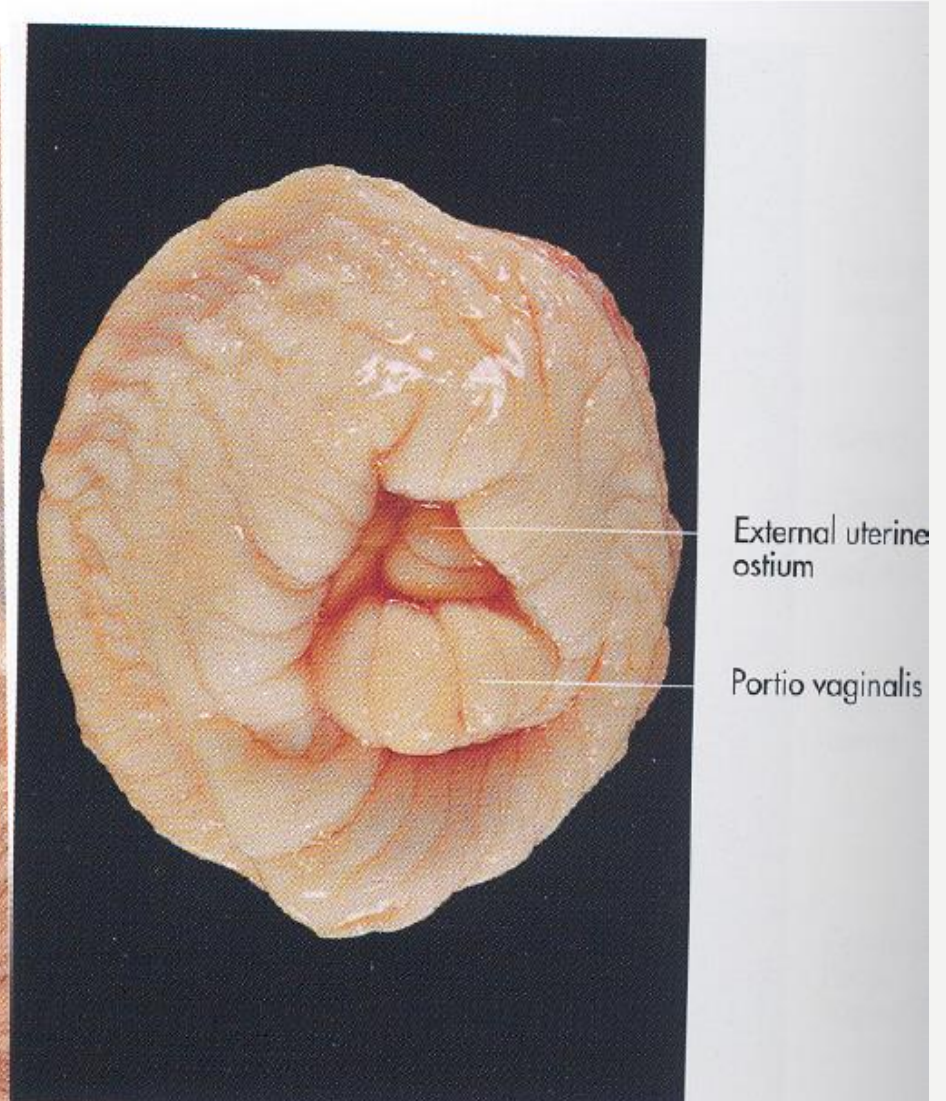
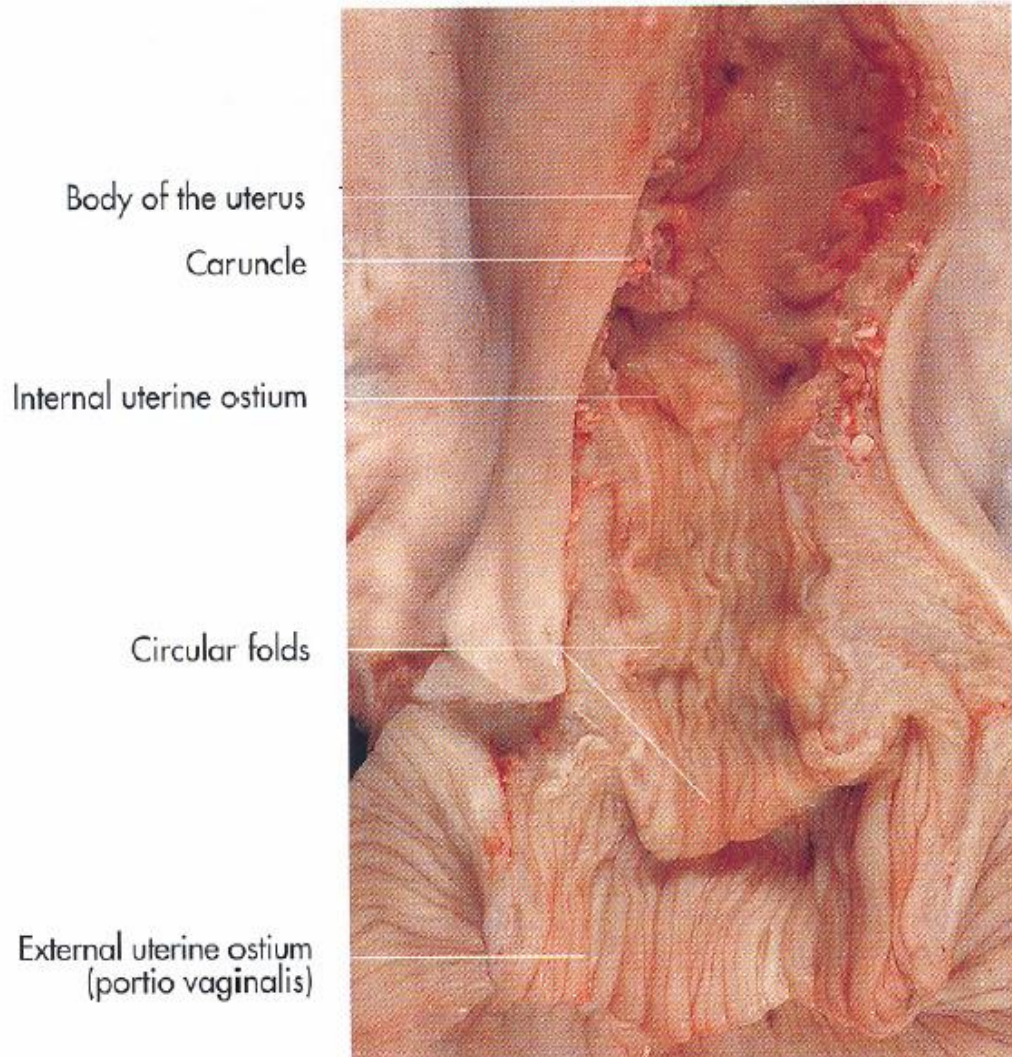
# Vue avec le spéculum de la partie postérieure du col en forme de rosette



<https://die-fruchtbare-kuh.ch/fr/fertilite/examen-de-lanimal/lexamen-vaginal/>

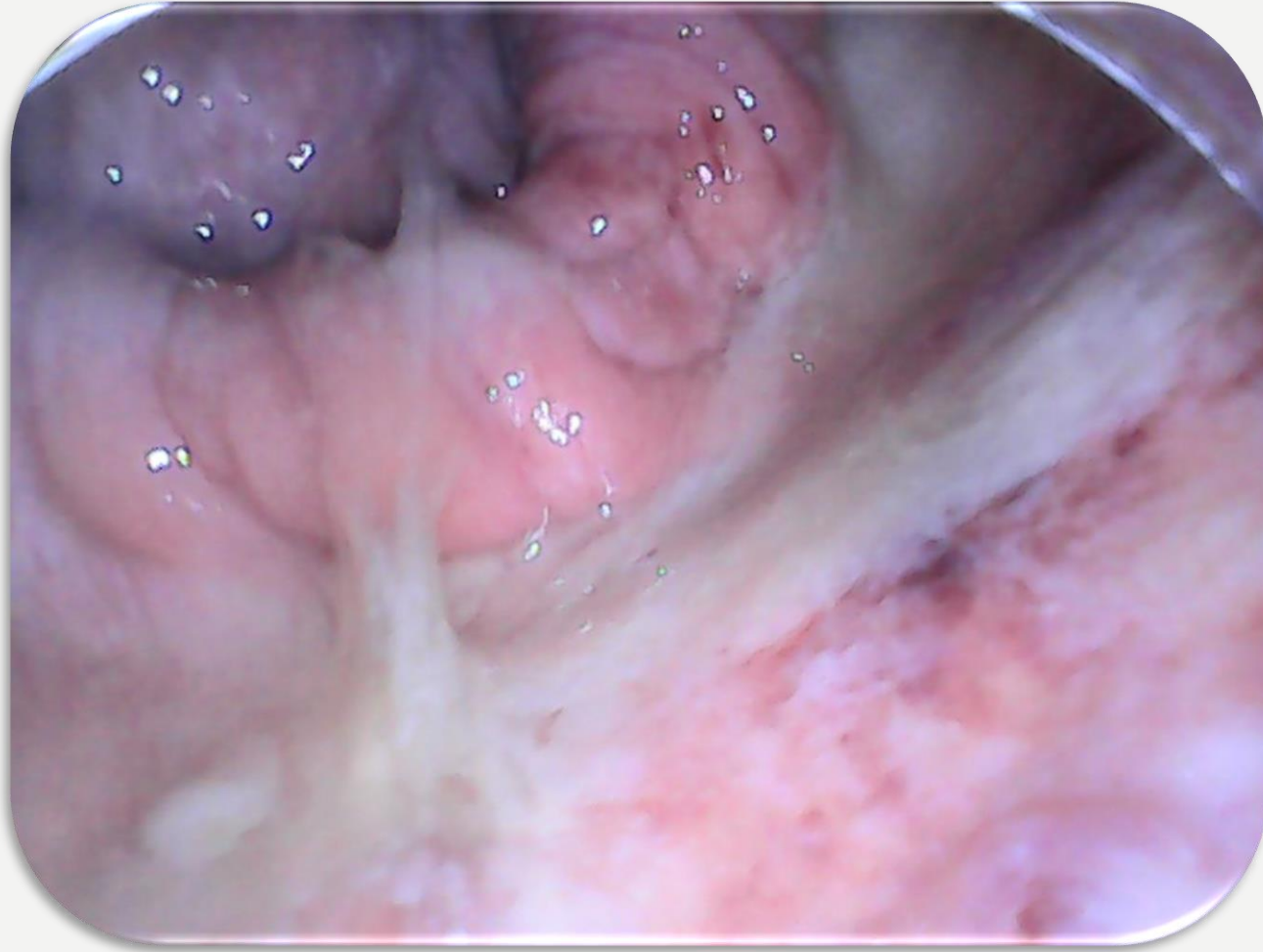


# Cow Cervix





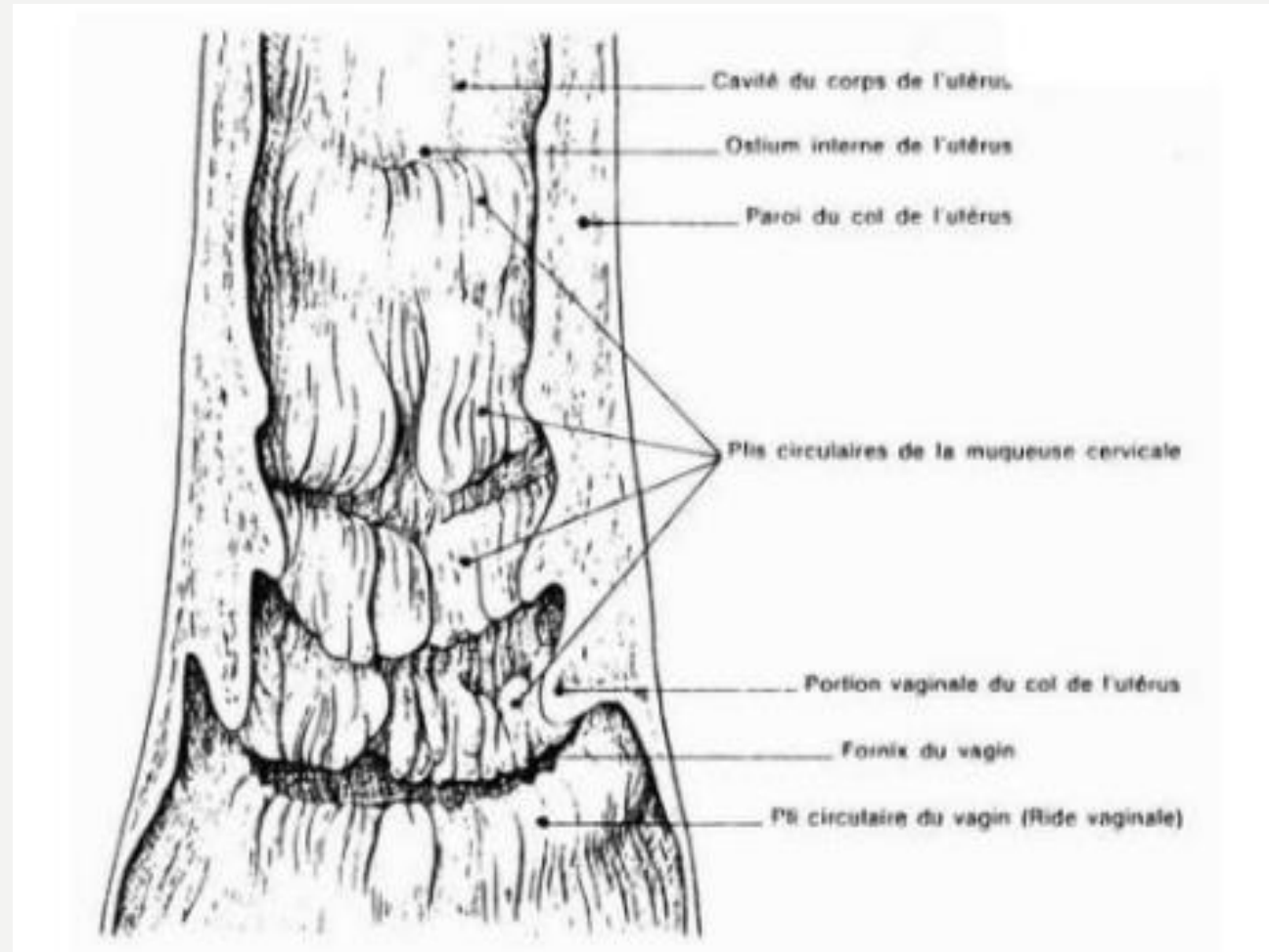
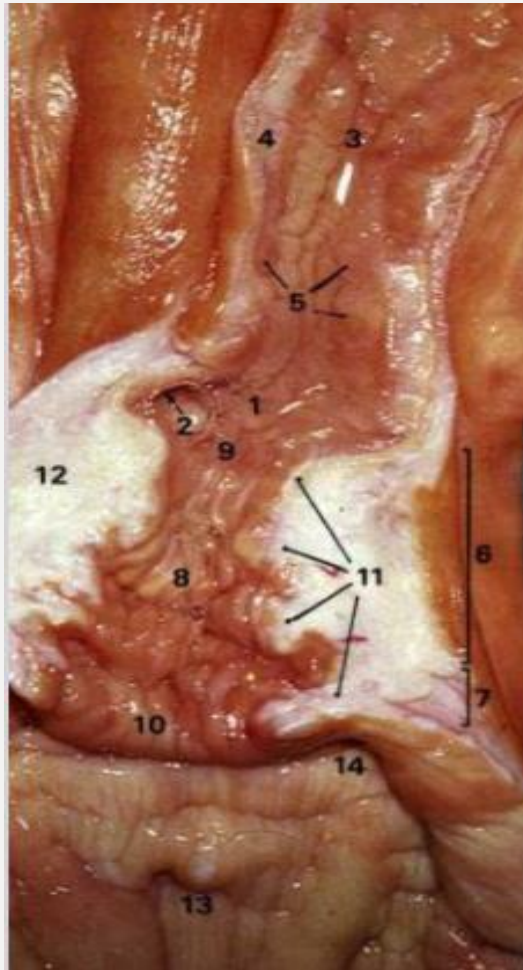
# MÉTRITE



**Écoulements cervicaux  
signalant une infection  
utérine ou cervicale**



# COL DE L'UTÉRUS DE LA VACHE (VUE DORSALE APRÈS OUVRETURE)

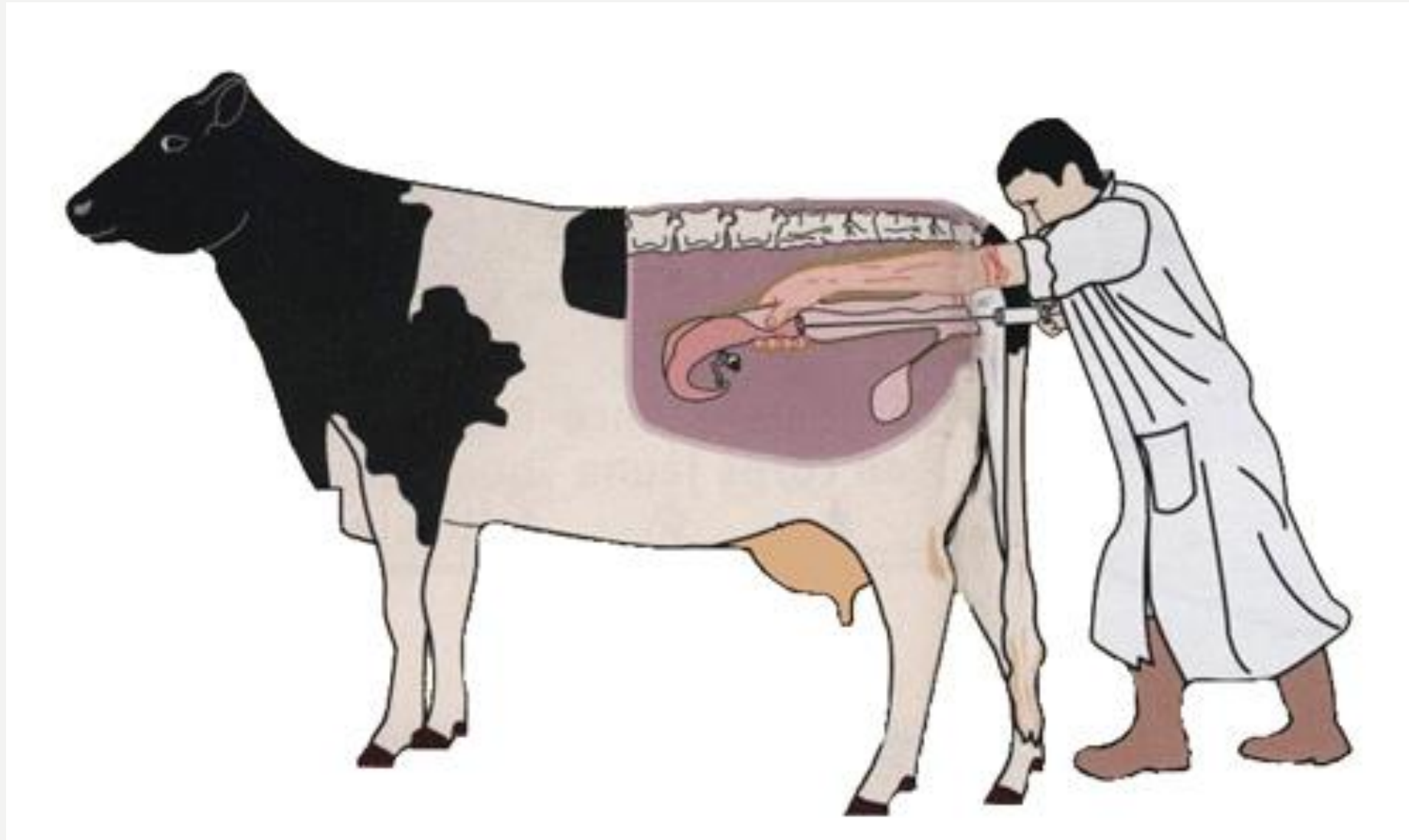


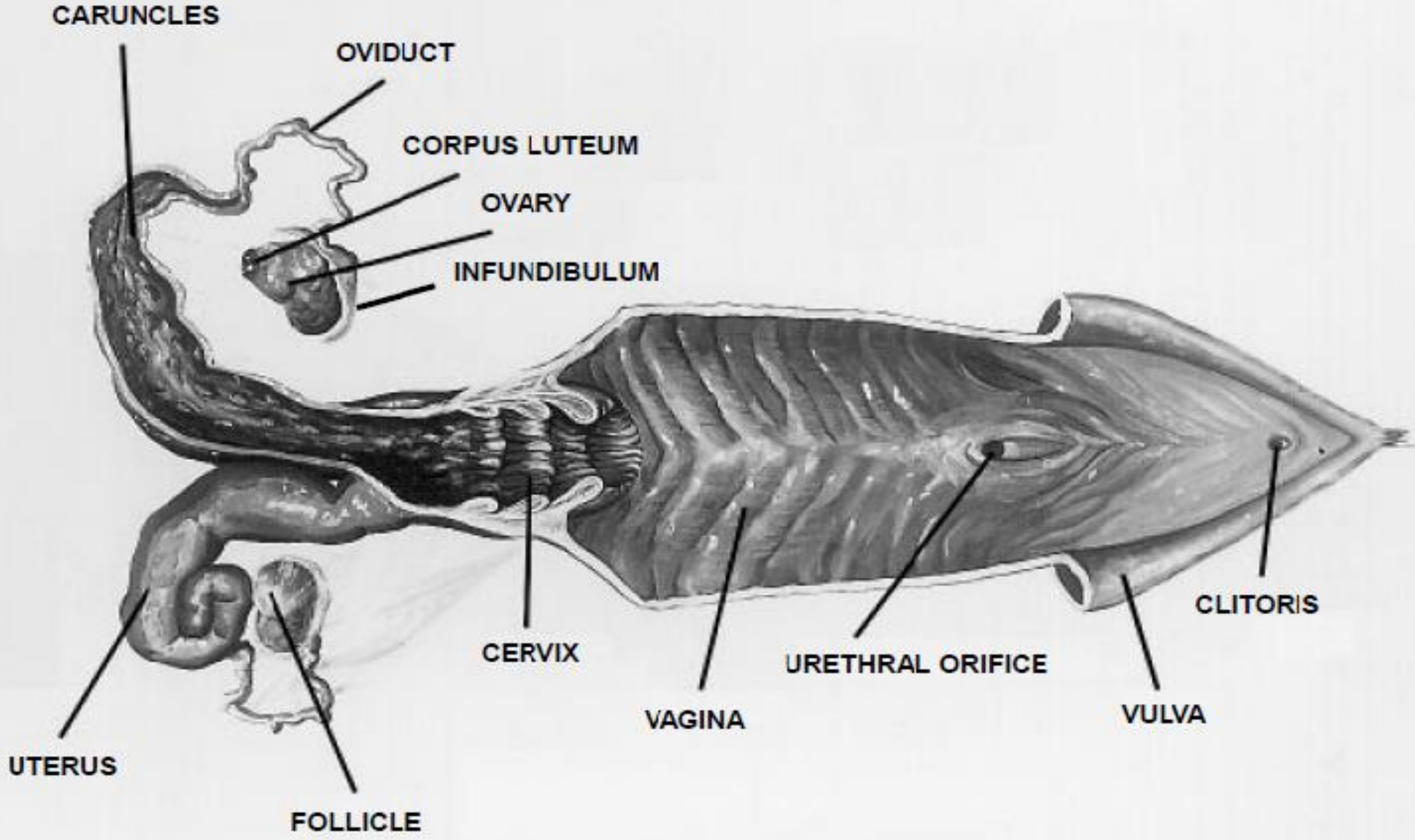


# PALPATION TRANSRECTALE



# PALPATION TRANSRECTALE

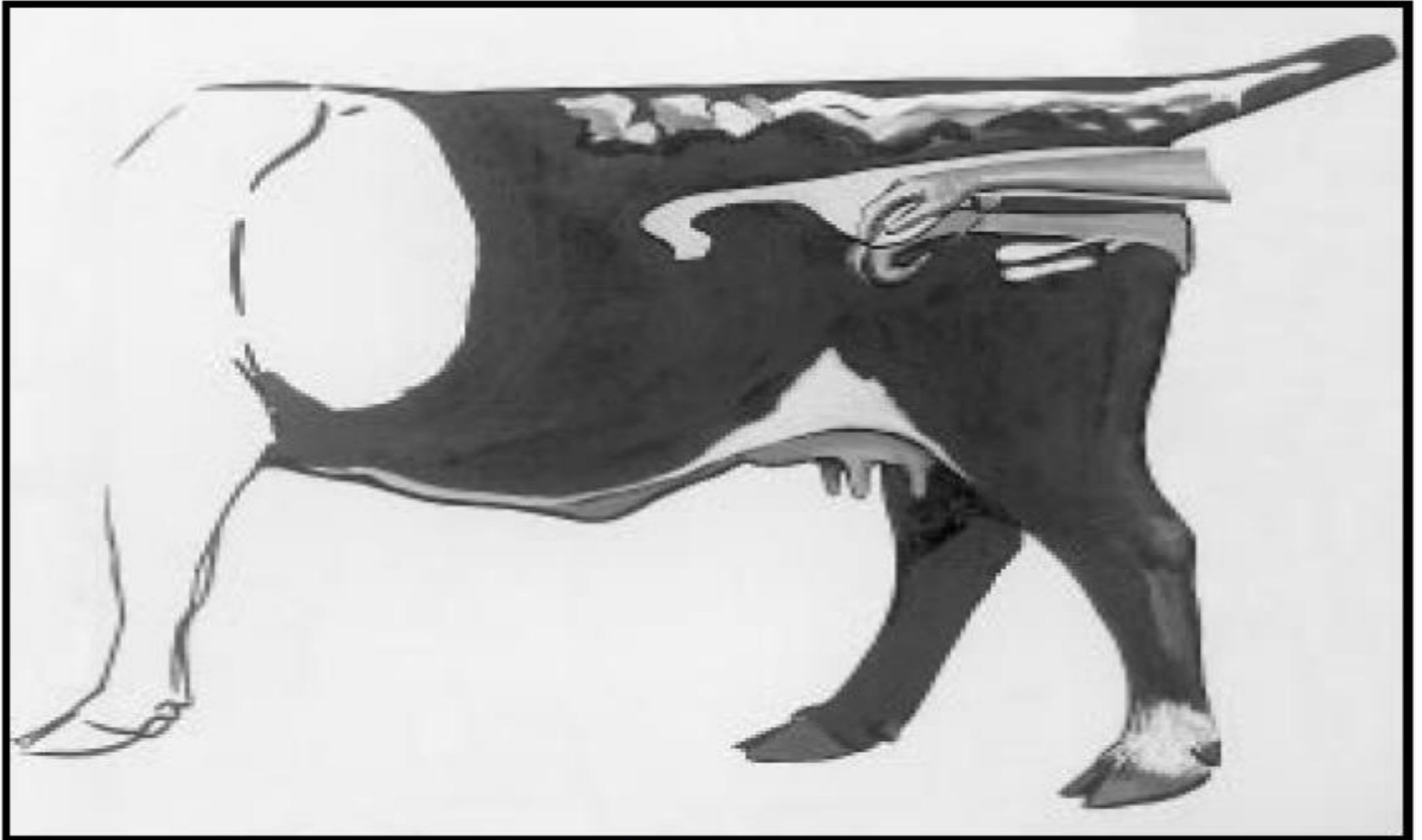








**Figure 7. Reproductive tract of mature cow on the floor of pelvis.**

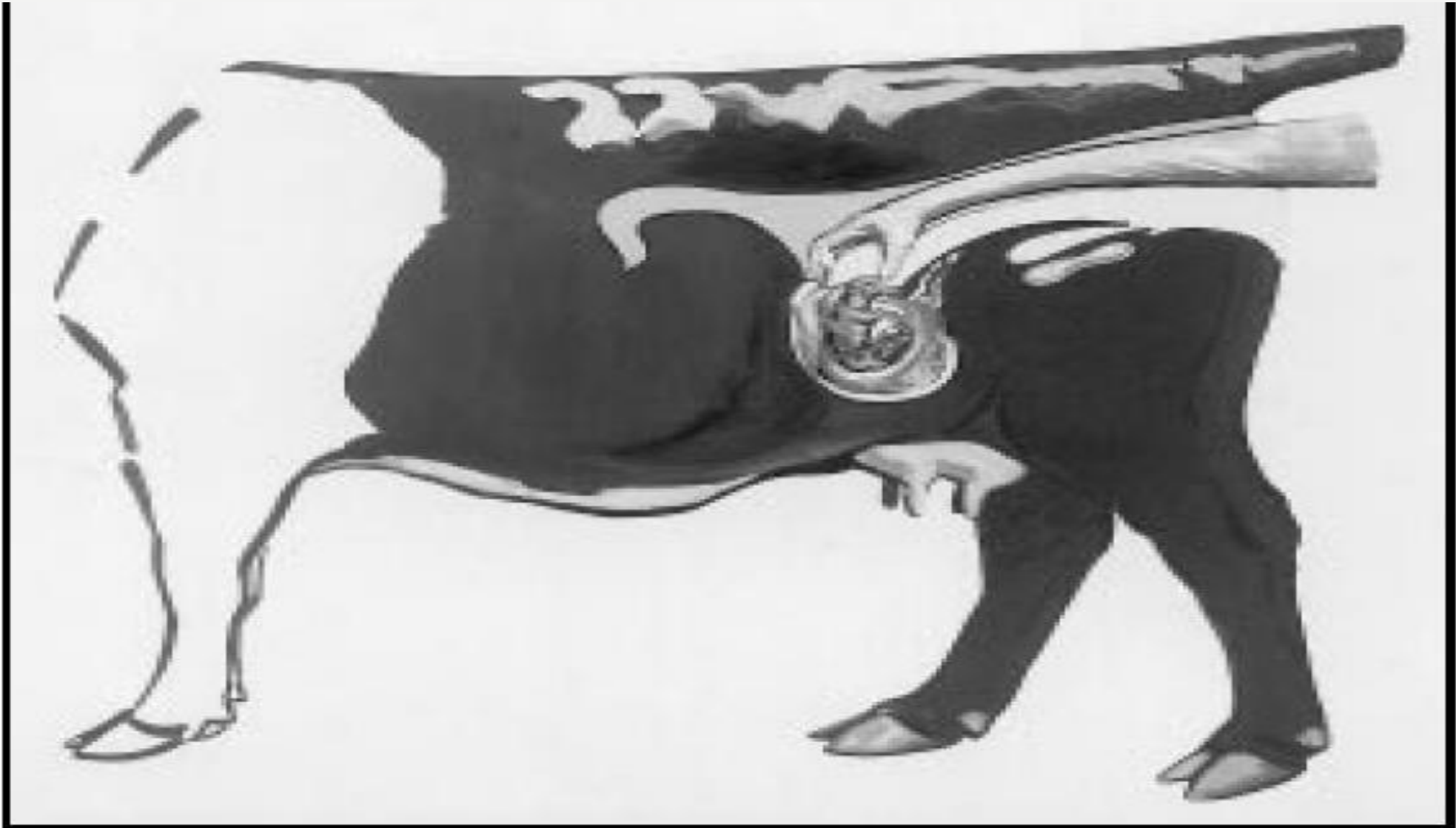


**Figure 9. Position of hand in early pregnancy.**



**Figure 10. 60-day pregnancy. Uterus may hang over pelvic brim.**



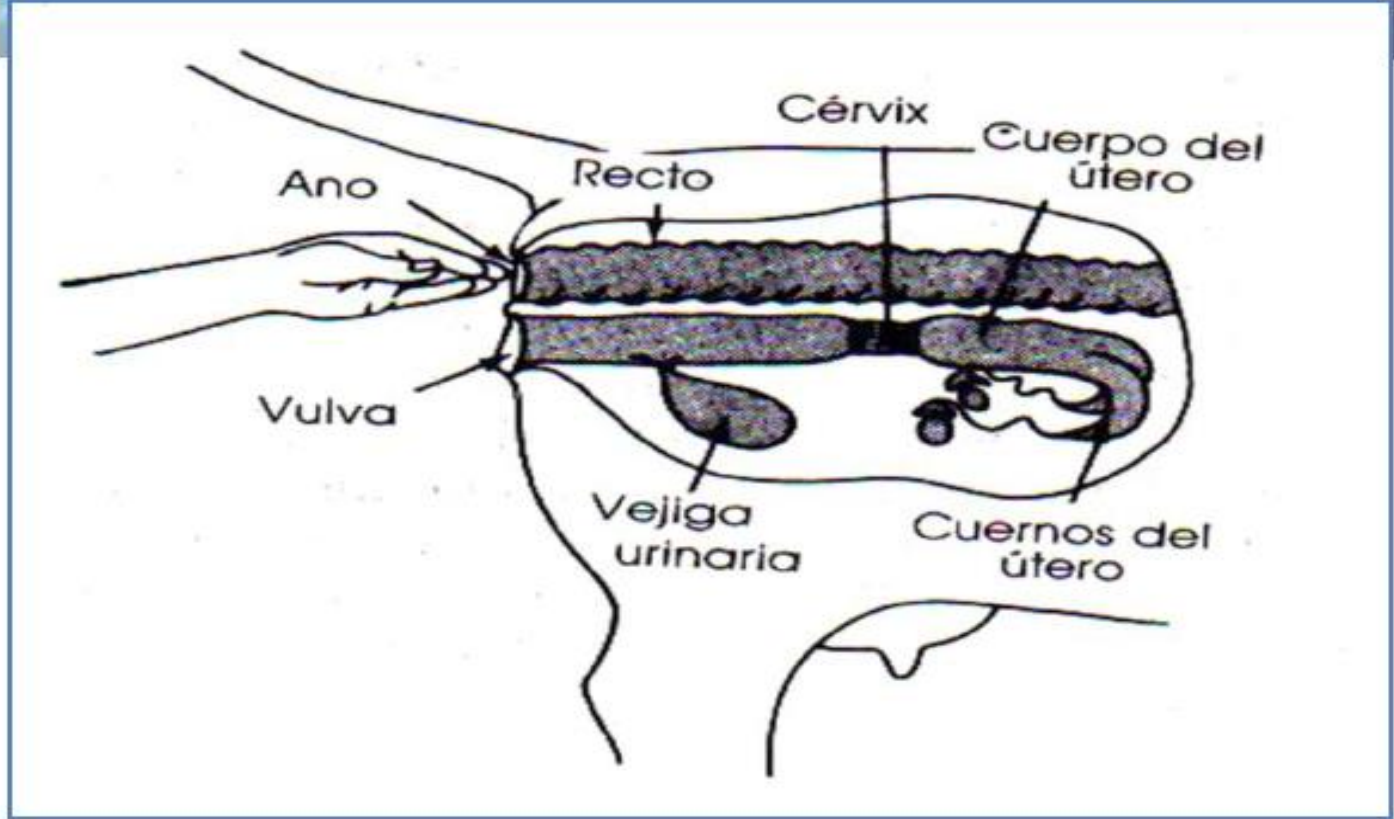


**Figure 11. Position of 90-day fetus. The fetus is now about 6<sup>1</sup>/<sub>2</sub> inches long and has displaced itself over the pelvic brim and down into the abdominal cavity.**













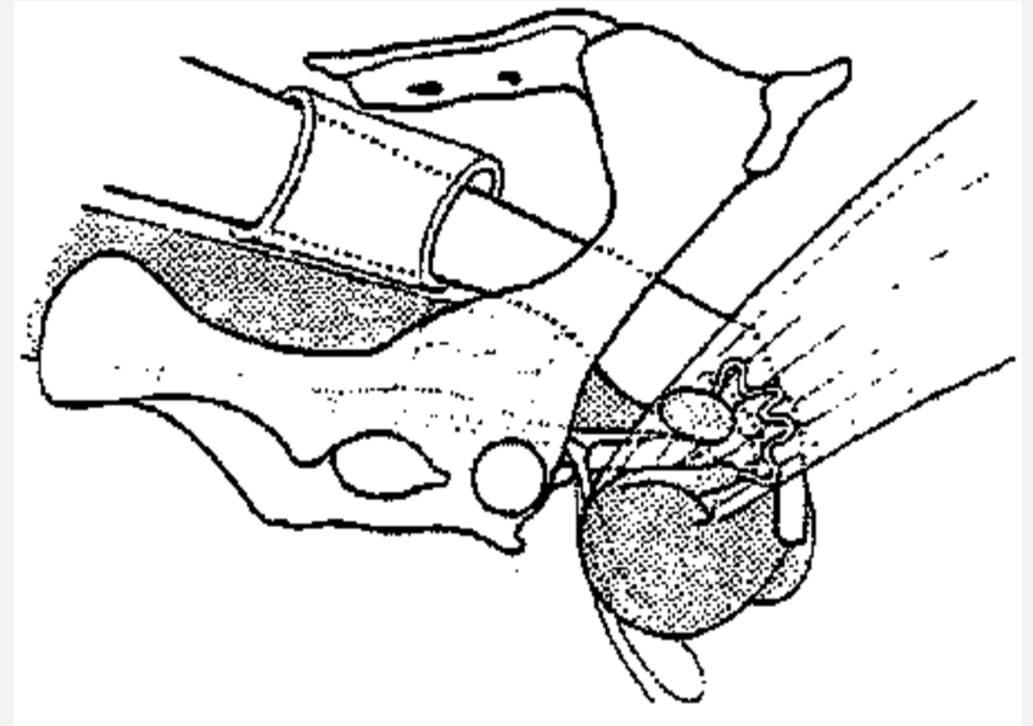


# REPÈRES



Le bord osseux du bassin est un point de repère...

# REPÈRES



Repère: col de l'utérus

# POSITION DE L'UTÉRUS DANS LA CAVITÉ PELVIENNE

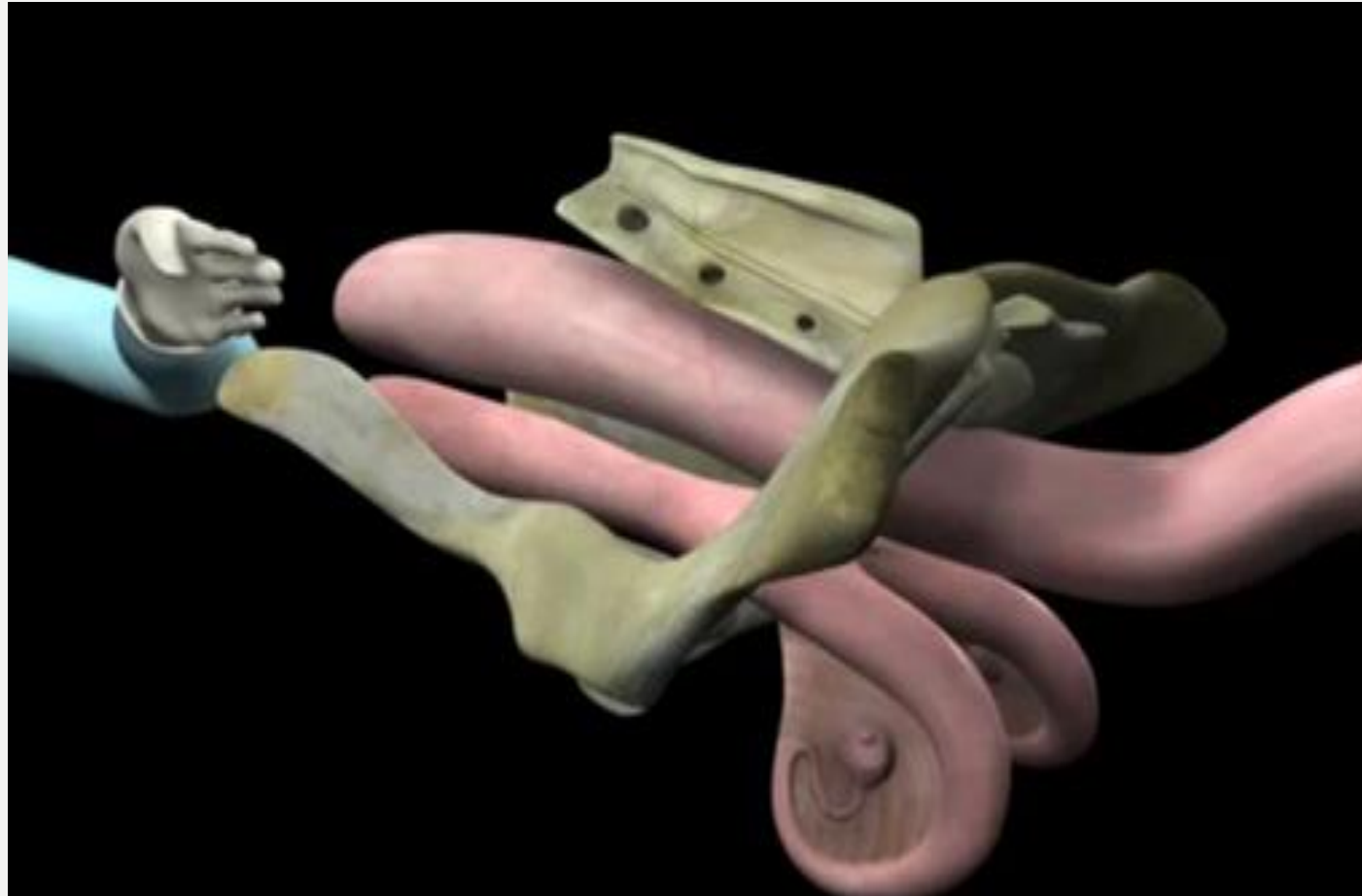




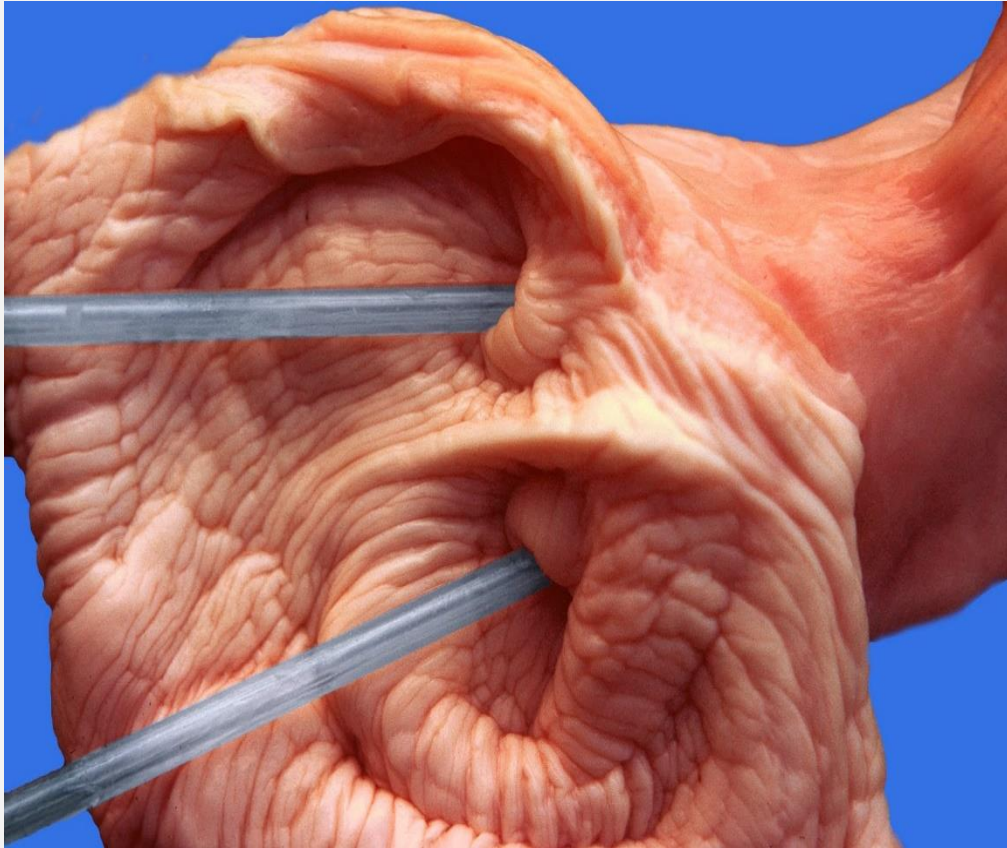


Fig 10





# DOUBLE COL UTÉRIN DE VACHE





# **PALPATION TRANSRECTALE: BIFURCATION UTÉRINE**



# PALPATION TRANSRECTALE: CORNES UTÉRINES







RO & LO: Left and right ovary  
RUH and LUH: Left and right uterine horn  
DICL: Dorsal intercornual ligament  
VICL: Ventral intercornual ligament  
UA: Uterine artery (left)  
M: Mesometrium



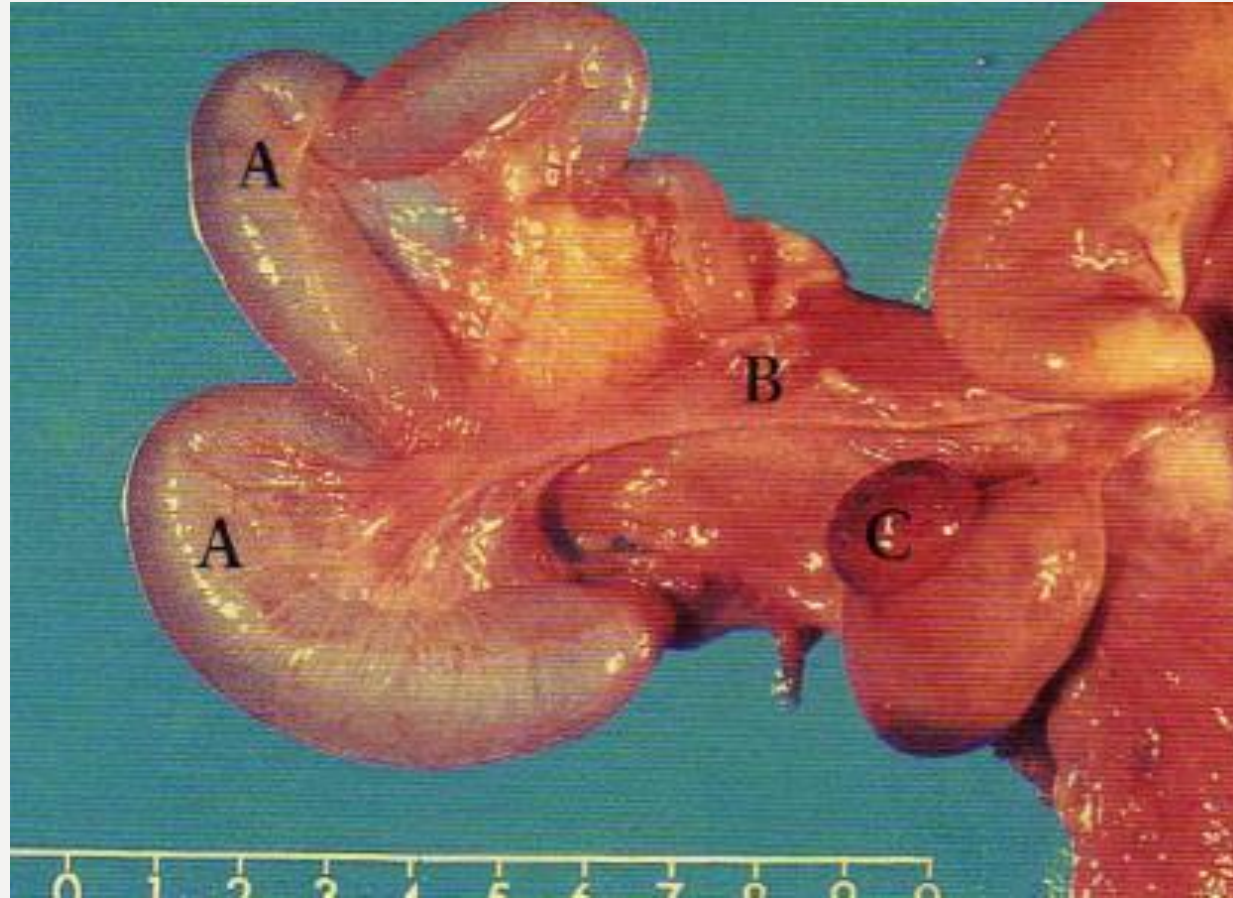
# UTÉRUS UNICORNE BOVIN



# PALPATION TRANSRECTALE: OVIDUCTE



# HYDROSALPINX



Oviducte énormément distendu par un liquide (A) à la suite d'une obstruction. Un petit segment du canal normal (B) est visible sur la bourse ainsi qu'un corps jaune de 6 à 8 jours sur l'ovaire (C)  
(Blowey et Weaver, 2003)



# PALPATION TRANSRECTALE: OVAIRES



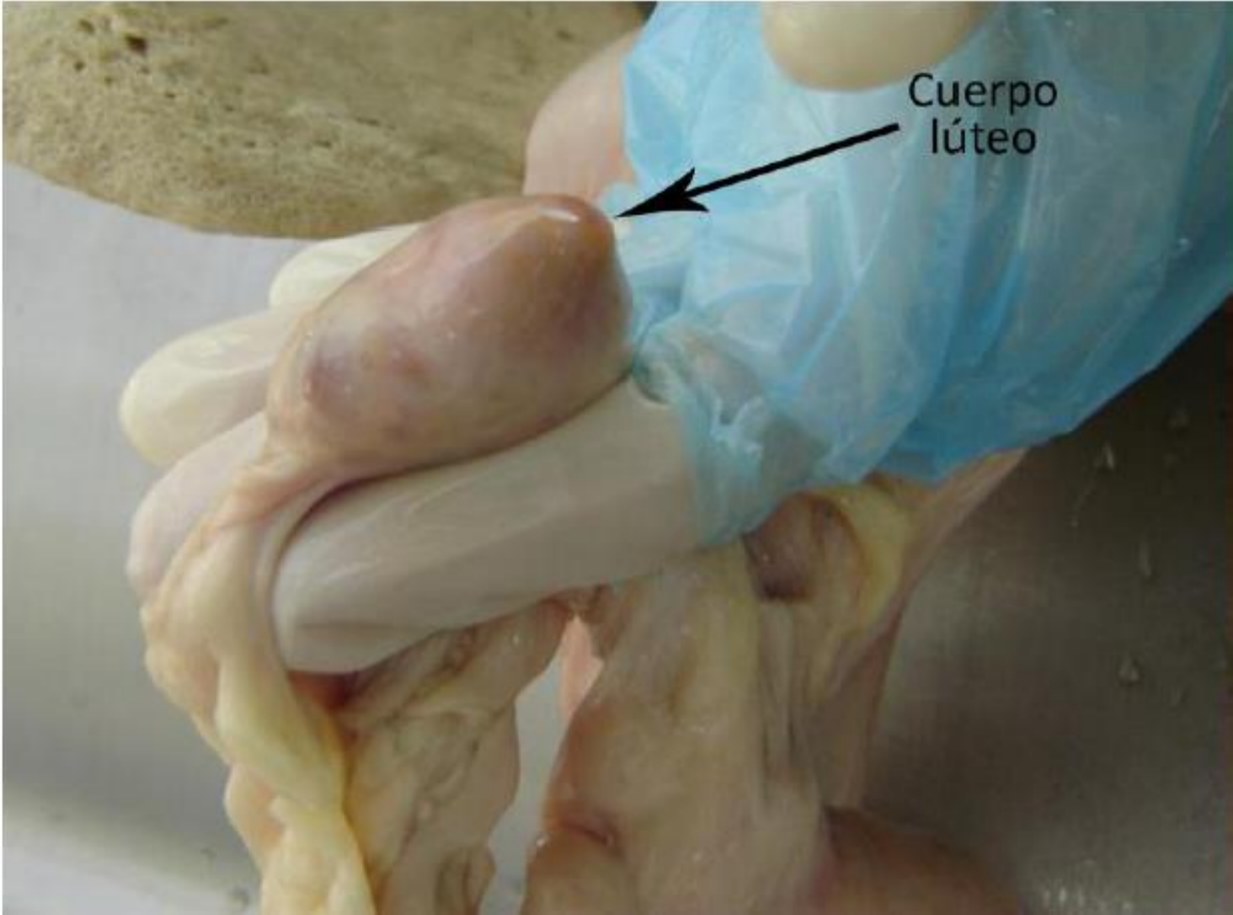
# PALPATION TRANSRECTALE: OVAIRES

- La taille des ovaires varie en fonction des organites présents:
  - **3 à 5 cm de longueur.**
  - **2 à 4 cm de largeur.**
  - **1 à 2 cm d'épaisseur.**



Ovaires au repos sans activité cyclique (Ceva)

# PALPATION TRANSRECTALE: OVAIRES

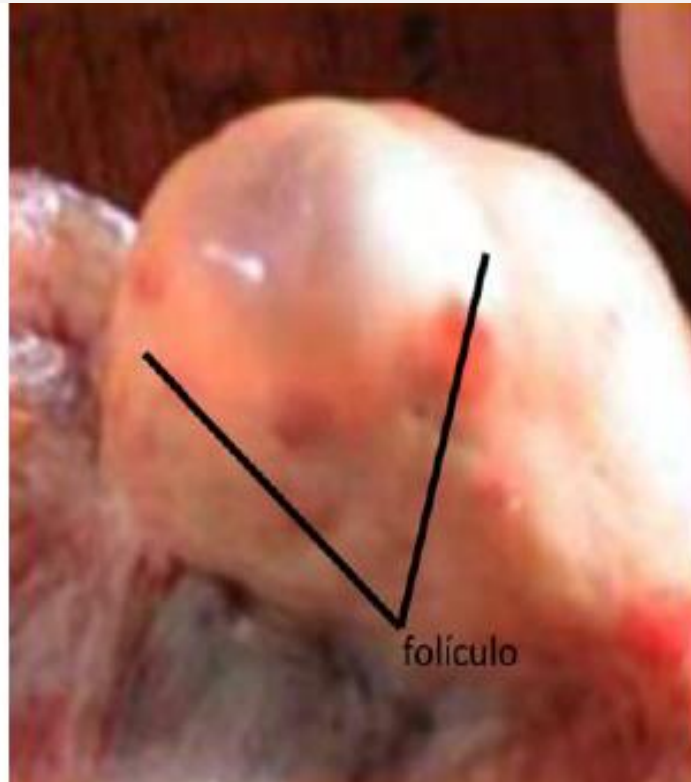
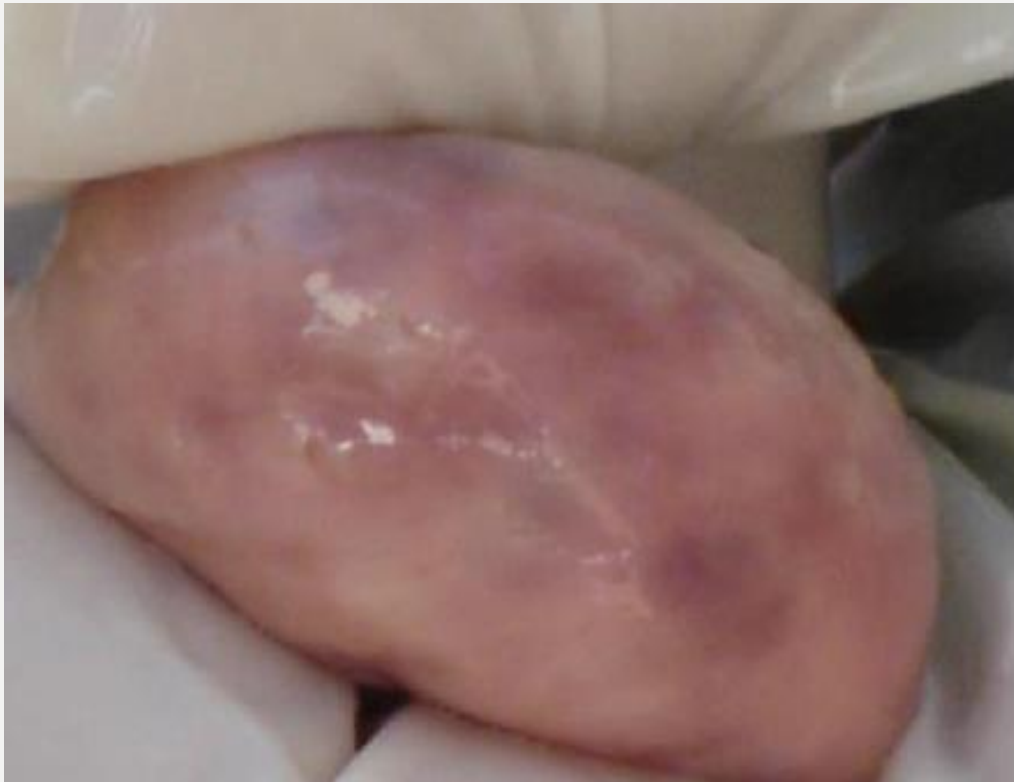




# **PALPATION TRANSRECTALE: FOLLICULES**



# FOLLICULES ET PRÉSENCE DE MUCUS



# OVAIRE DE VACHE: FOLLICULE





# OVAIRES



# OVAIRES INACTIFS



# OVAIRE INACTIF D'UNE VACHE

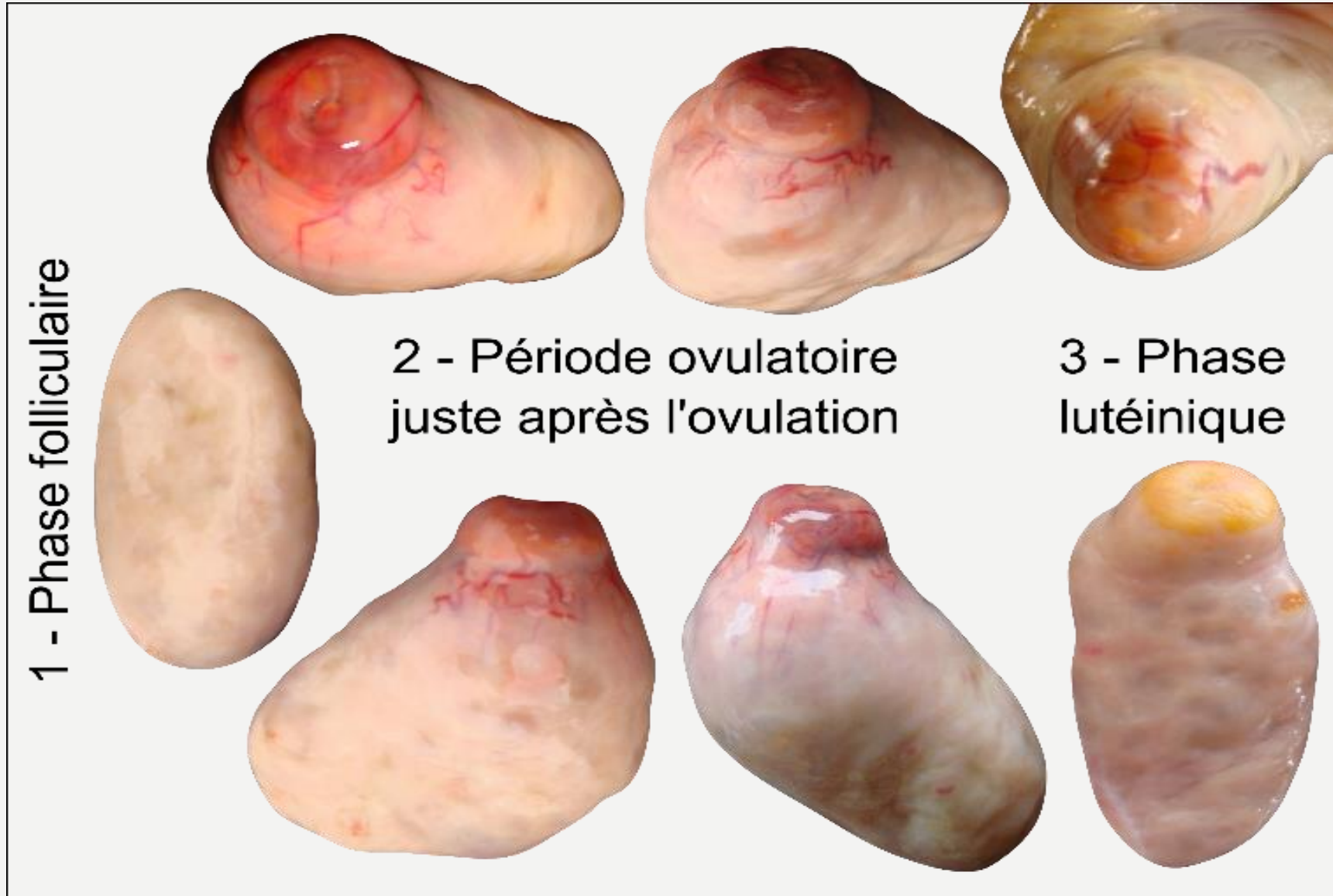




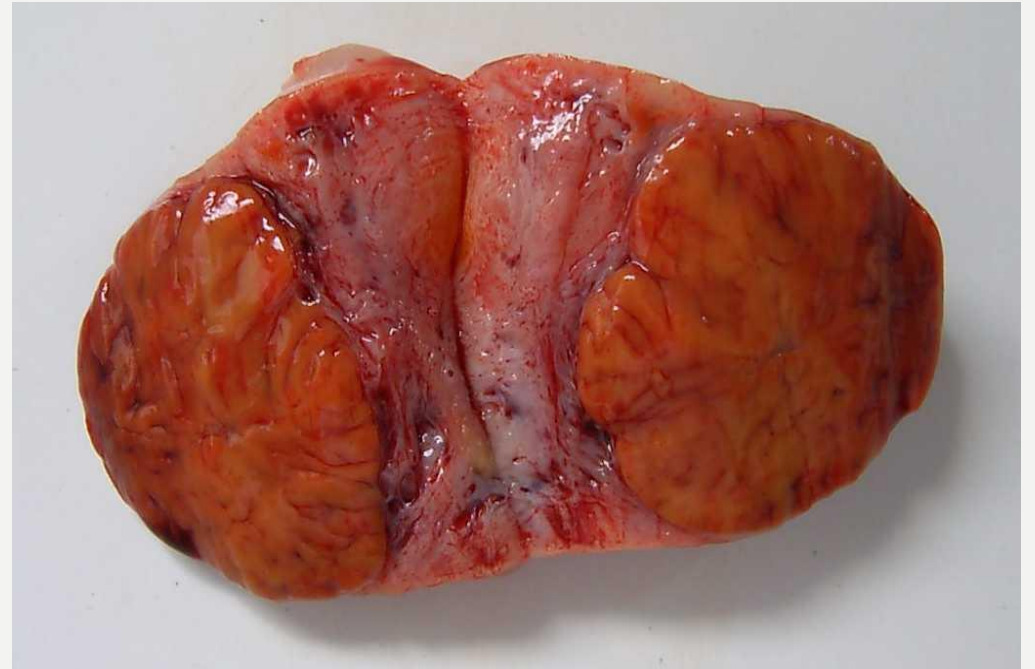
# PALPATION D'UN CORPS JAUNE



# PALPATION TRANSRECTALE: CORPS JAUNES

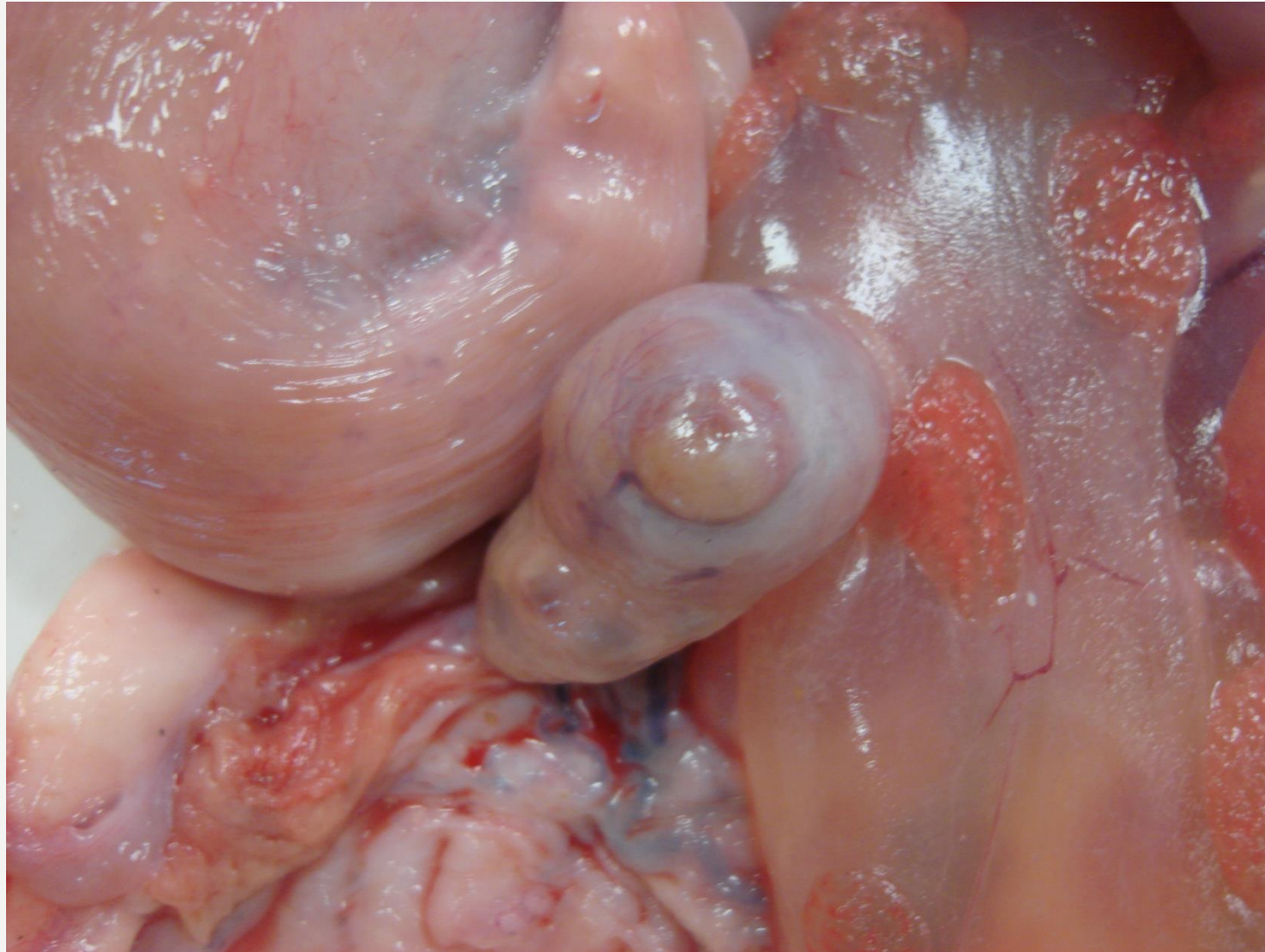


# OVAIRE DE VACHE: CORPS JAUNE

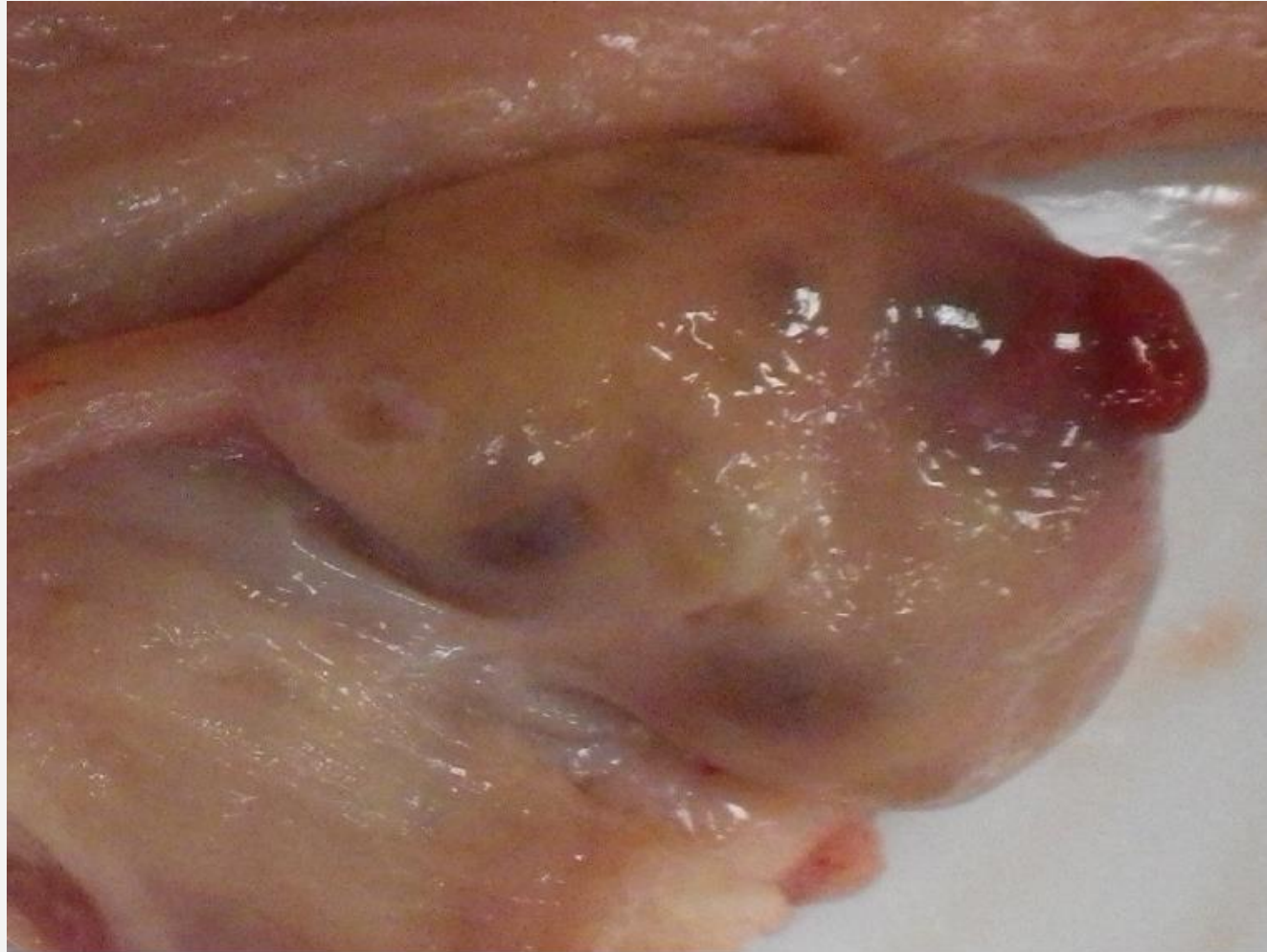




# CORPS JAUNE GRAVIDIQUE



# JEUNE CORPS JAUNE GRAVIDIQUE





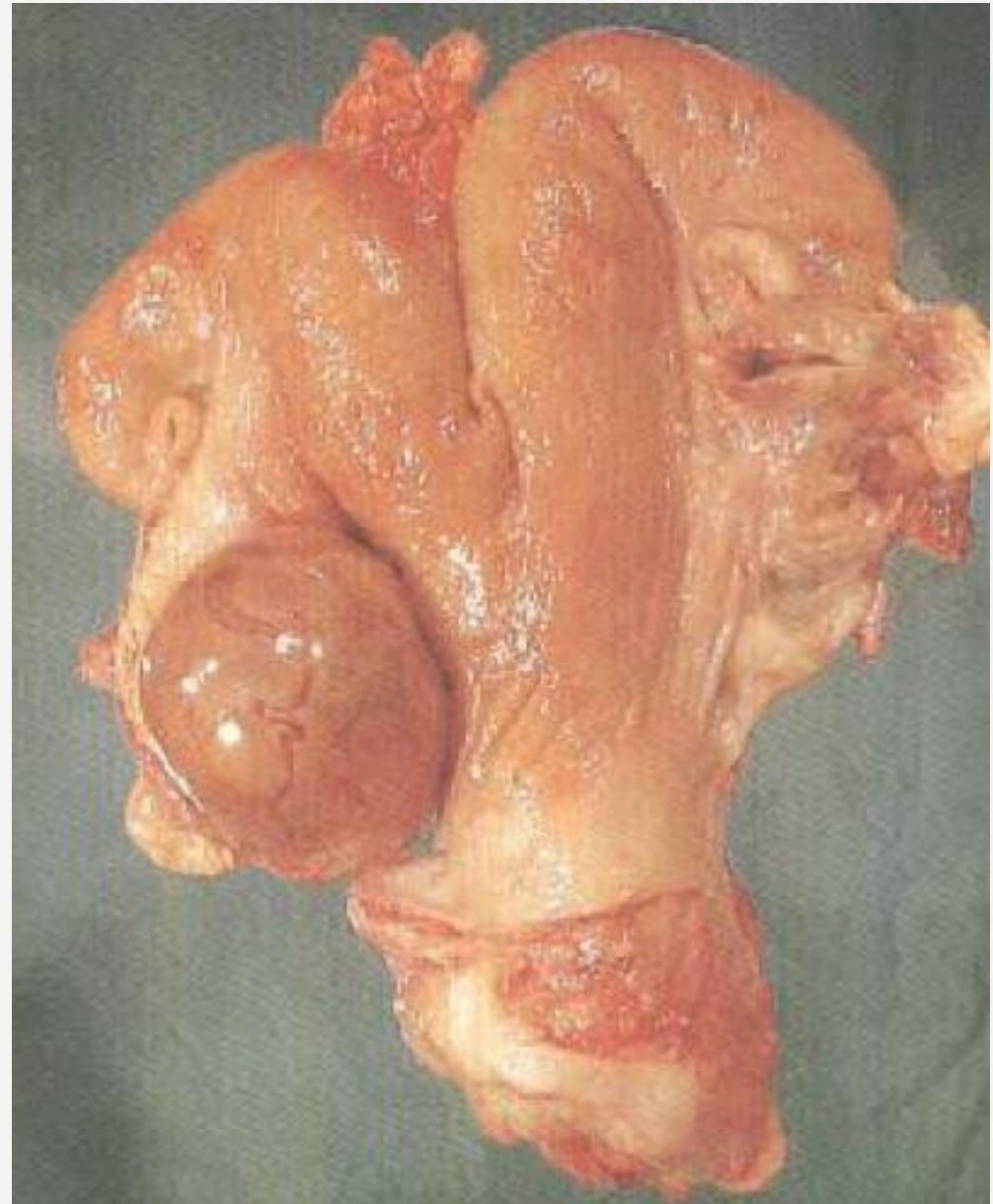
## Kyste folliculaire lutéinisé

(Ceva santé animale )



Blowey et Weaver, 1991)

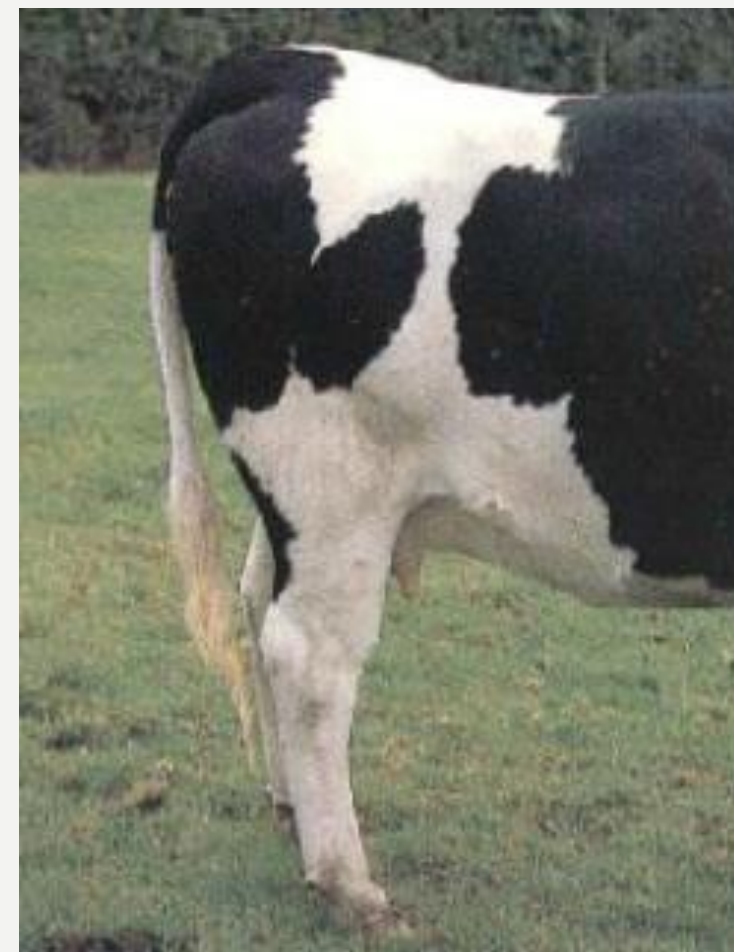
- Single, large, spherical, thick-walled cyst in the left ovary. **Luteal cysts secrete progesterone and may lead to prolonged anoestrus.**
- The right ovary contains an incised cystic corpus luteum, a structure which does not impede normal cyclical behaviour.





## Ovaire poly kystique: Kystes folliculaires

(Ceva santé animale )

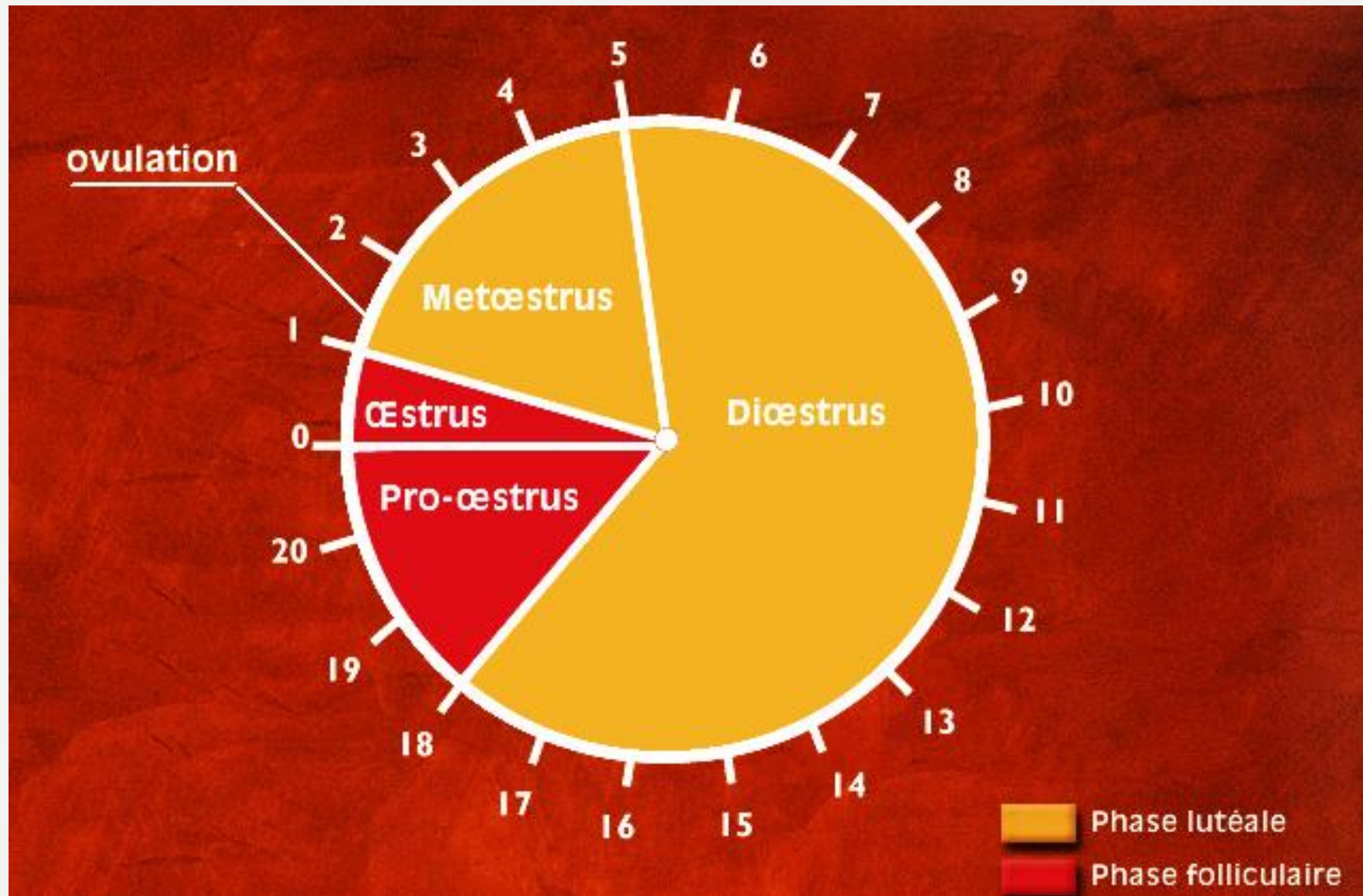


Kyste folliculaire dans l'ovaire droit

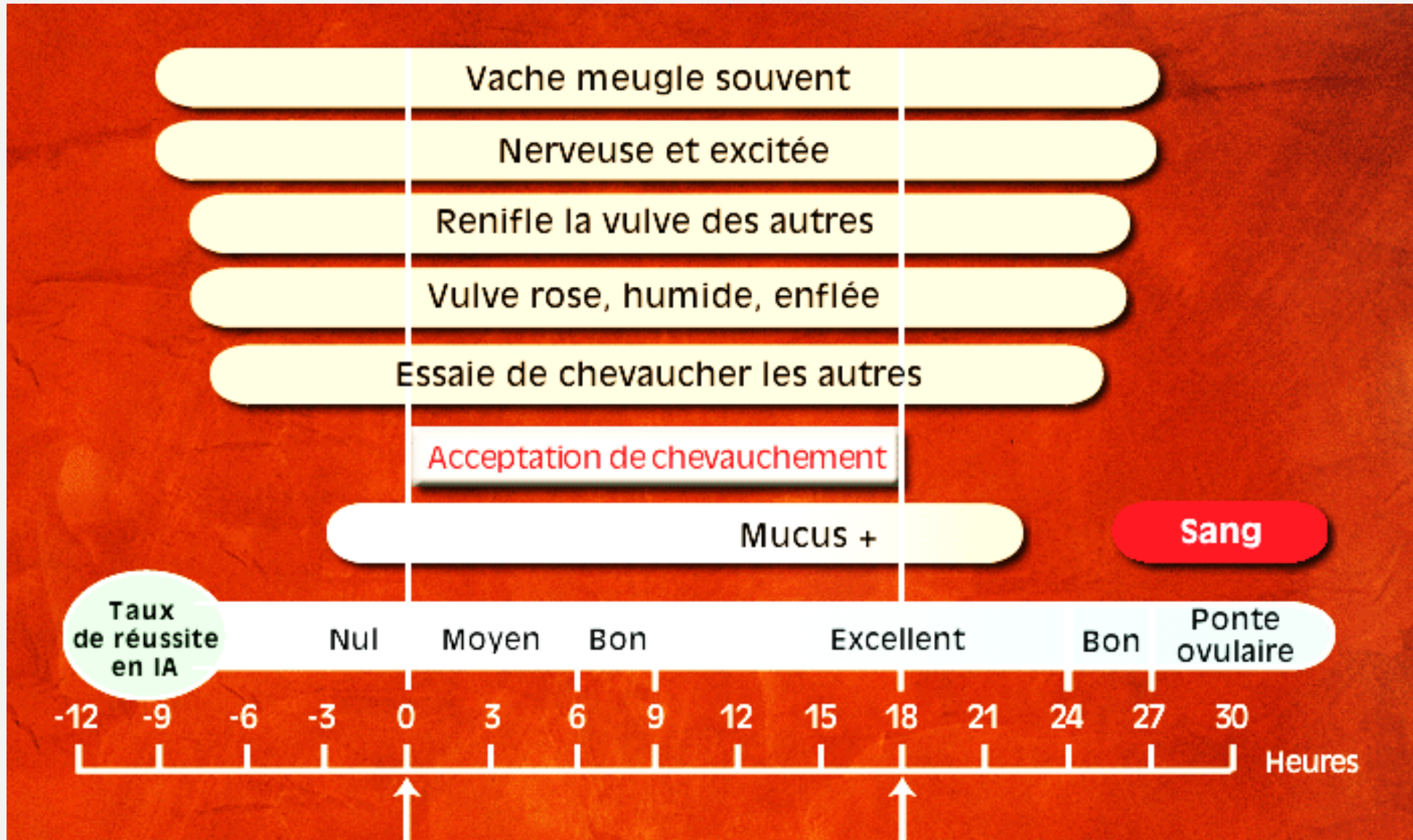




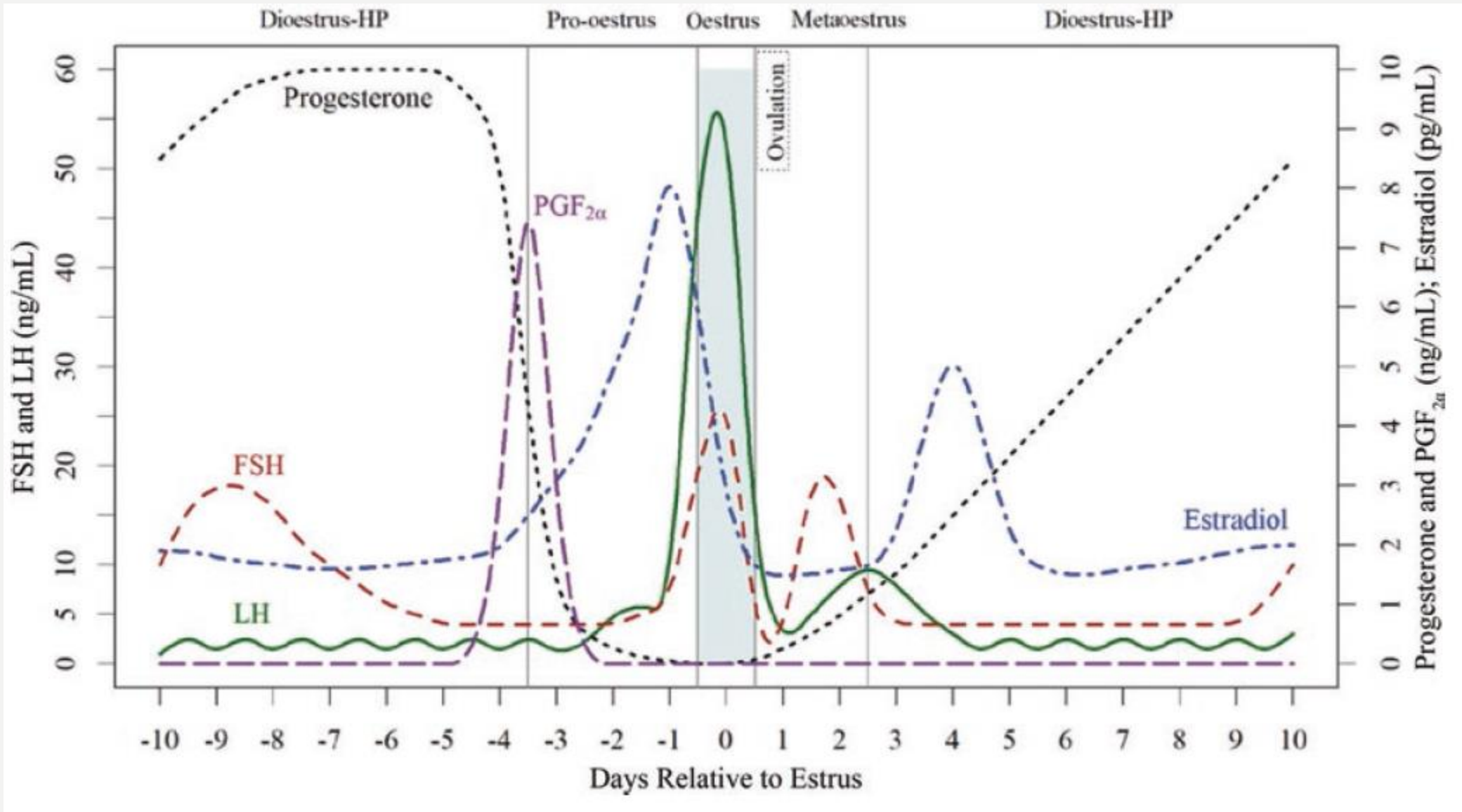
# **CYCLE ŒSTRAL DE LA VACHE**



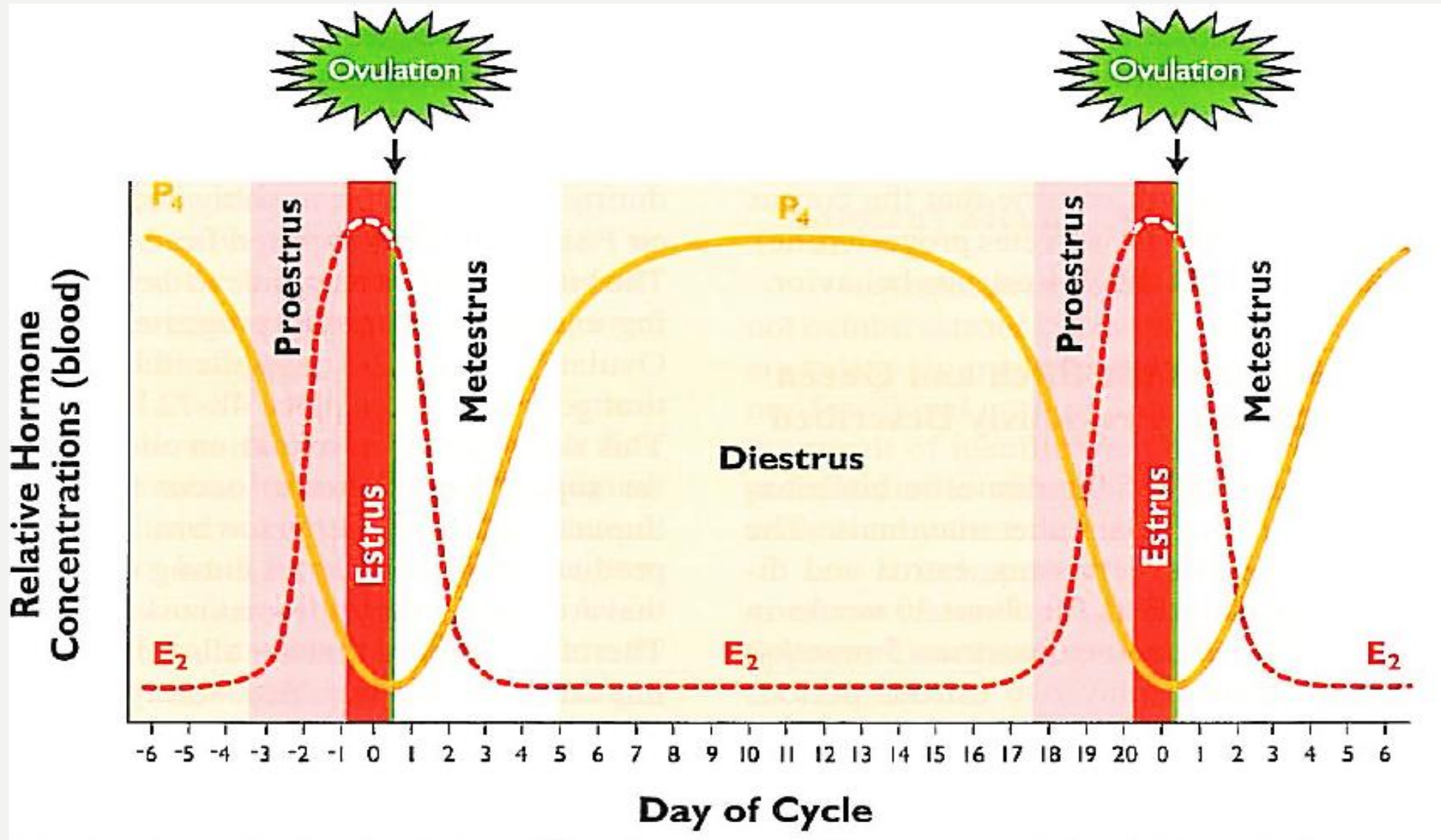
Les quatre phases du cycle œstral

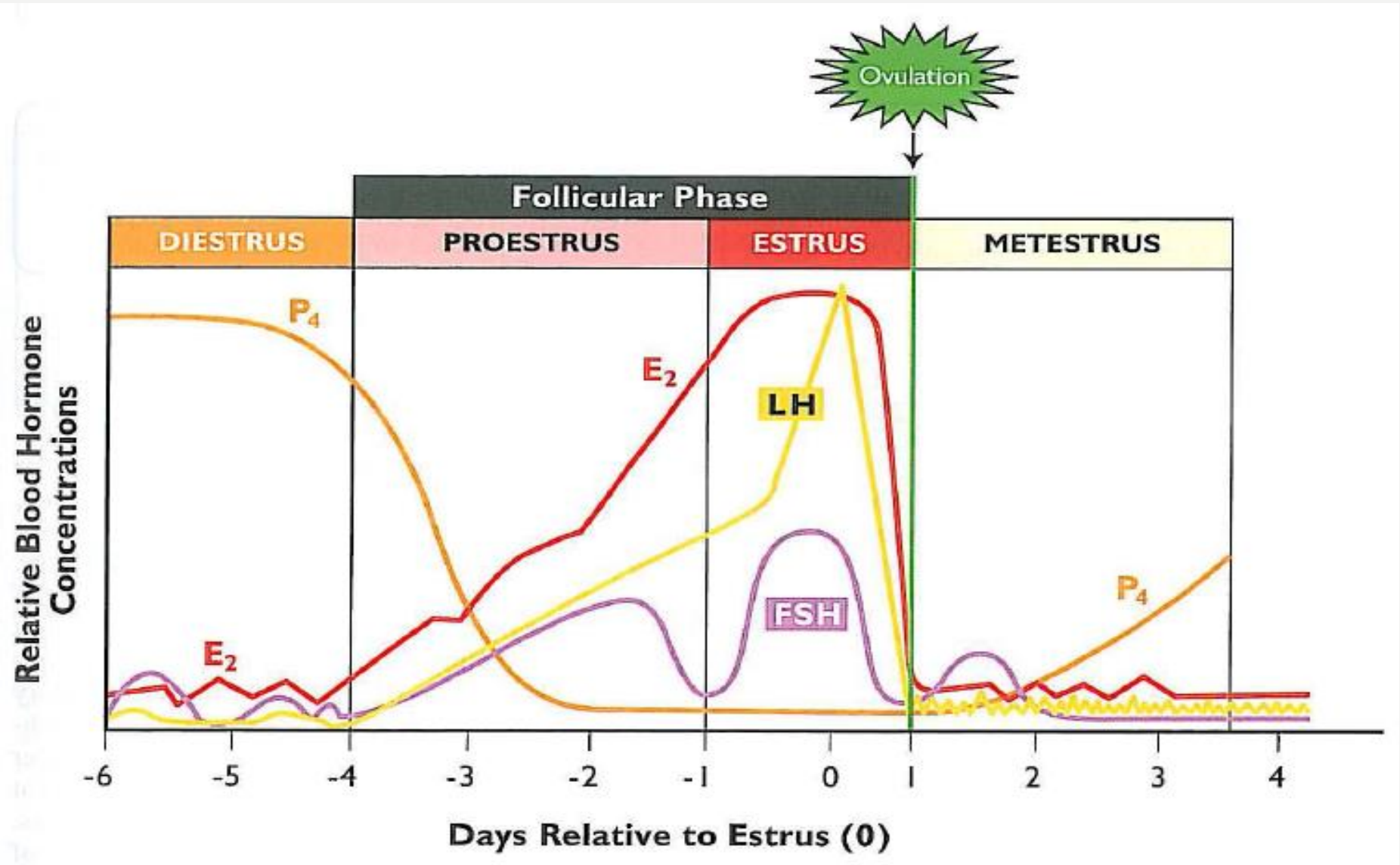




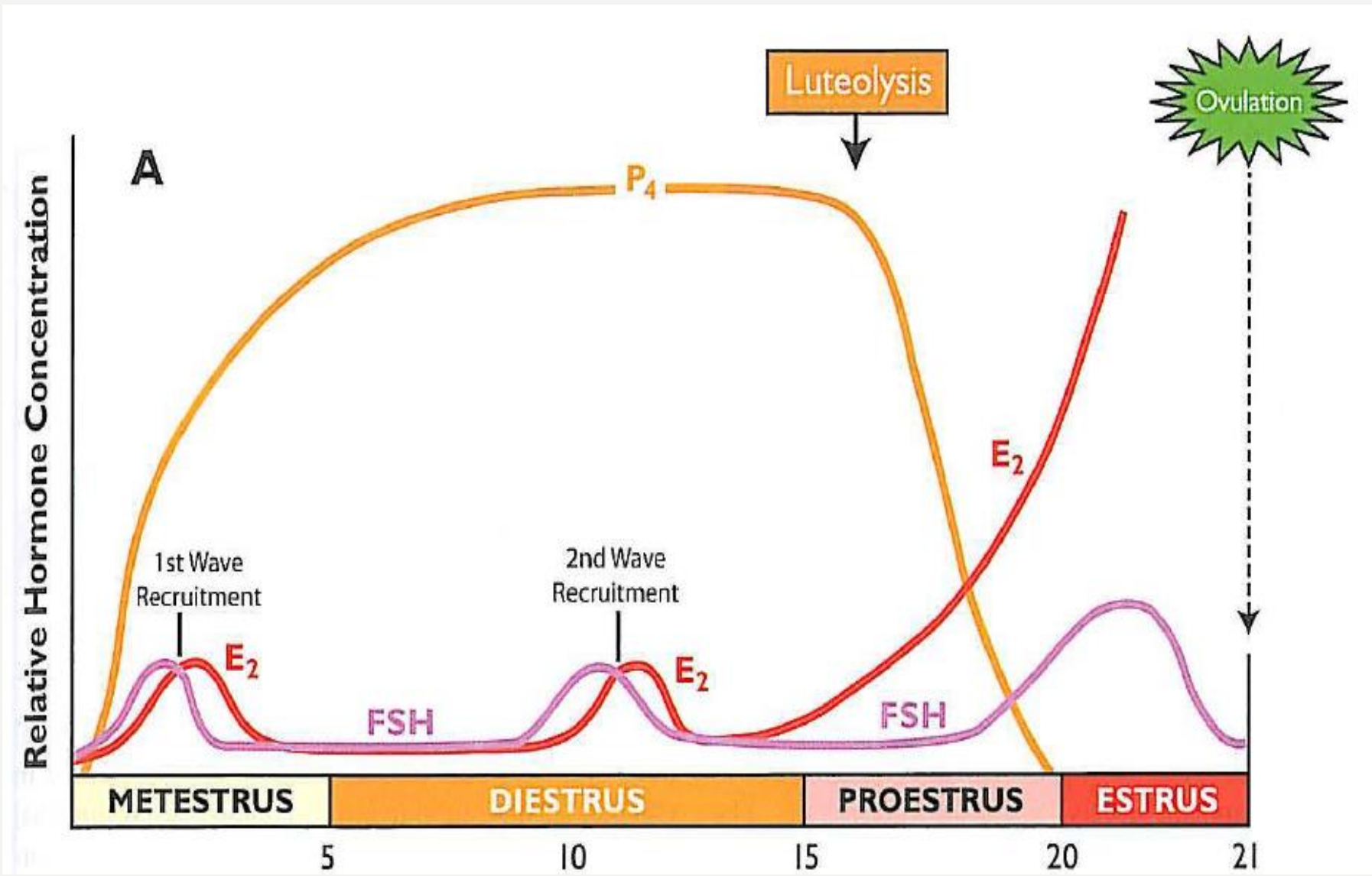


Hormonal pattern during the oestrus cycle in cattle. Legend: Dioestrus-high progesterone (dioestrus- HP) ranging from -10 to -4 d ( $n = 27,574$ ); proestrus ranging from -3 to -1 d ( $n = 12,302$ ); oestrus at d 0 ( $n = 4144$ ); metaoestrus from 1 to 2 d ( $n = 8275$ ); and dioestrus increasing progesterone (dioestrus-HP) ranging from 3 to 10 d ( $n = 33,052$ ). (Adapted from Toledo-Alvarado et al. [23] with permission from Elsevier)





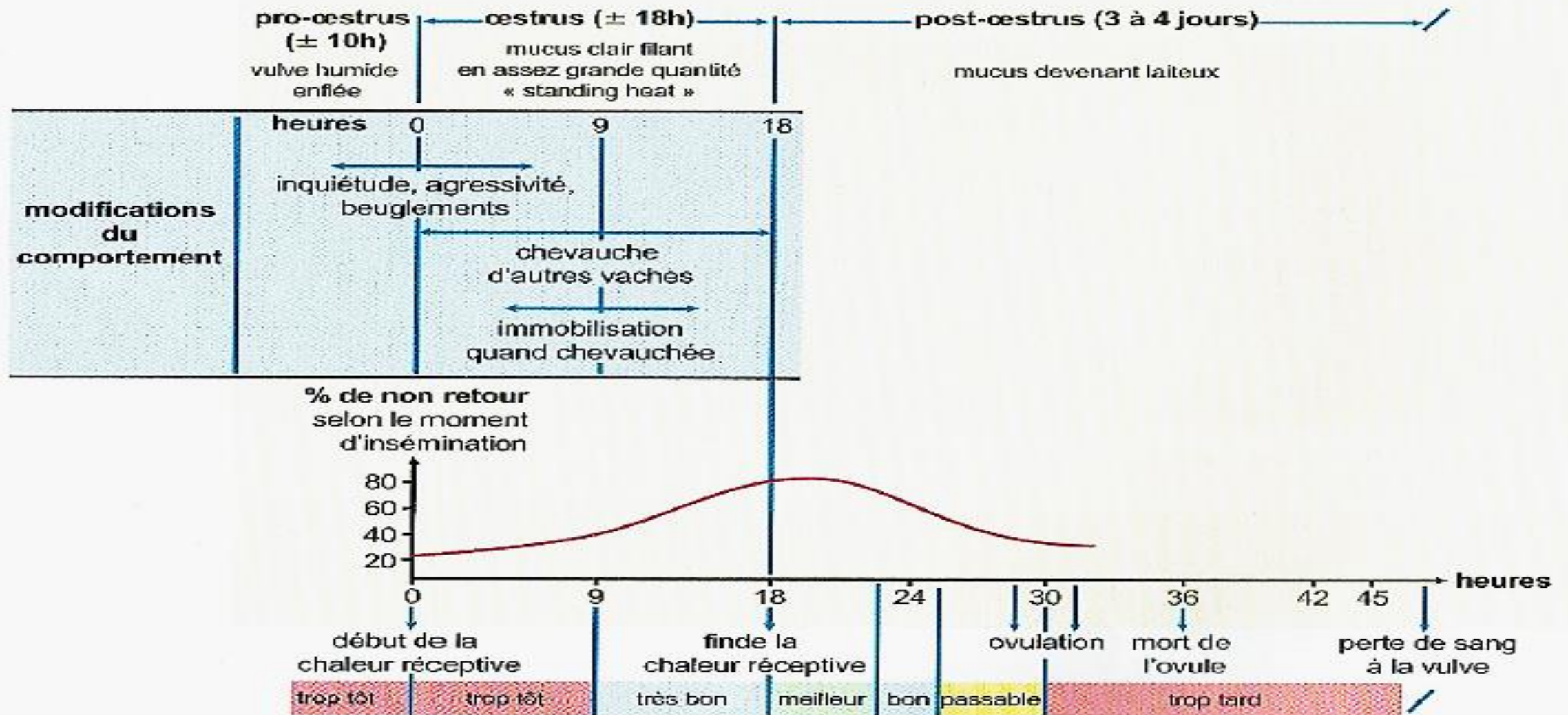






Mucus clair et filant lors des chaleurs chez la vache

# RÉPARTITION DES SIGNES DE CHALEUR DANS LE TEMPS ET CHOIX DU MEILLEUR MOMENT D'INSÉMINATION (ÉDUCAGRI ÉDITIONS, 2005)

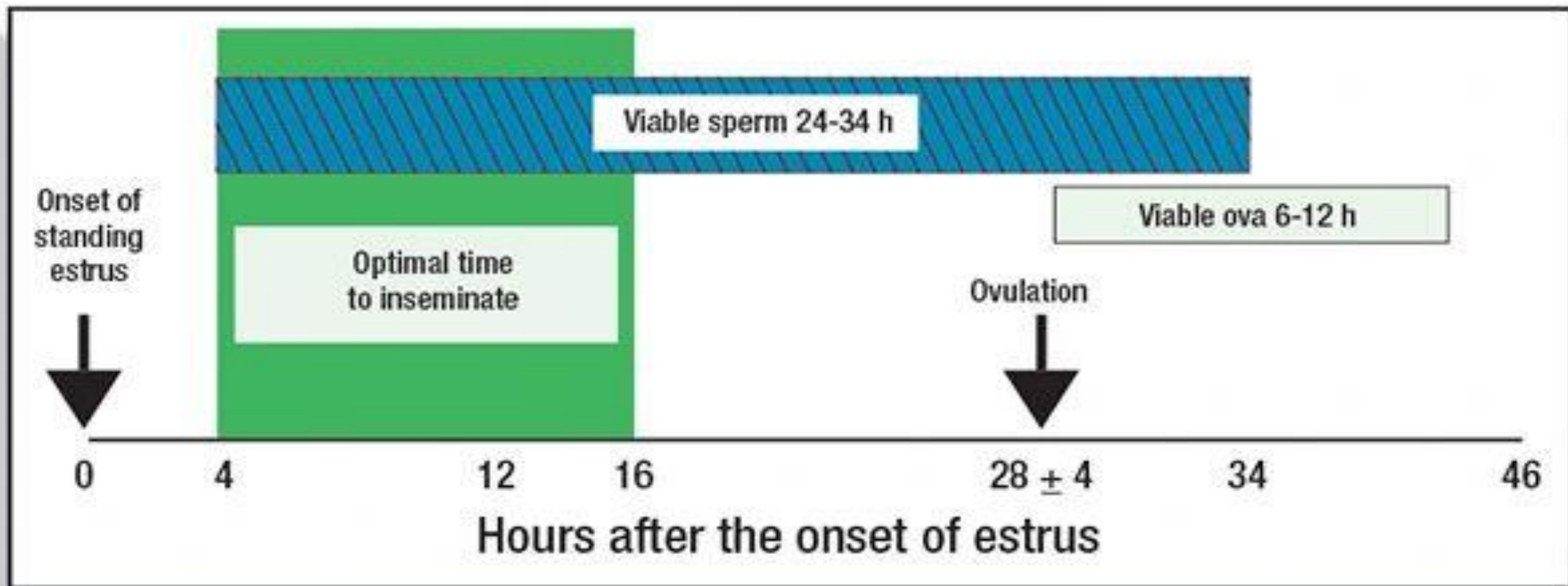






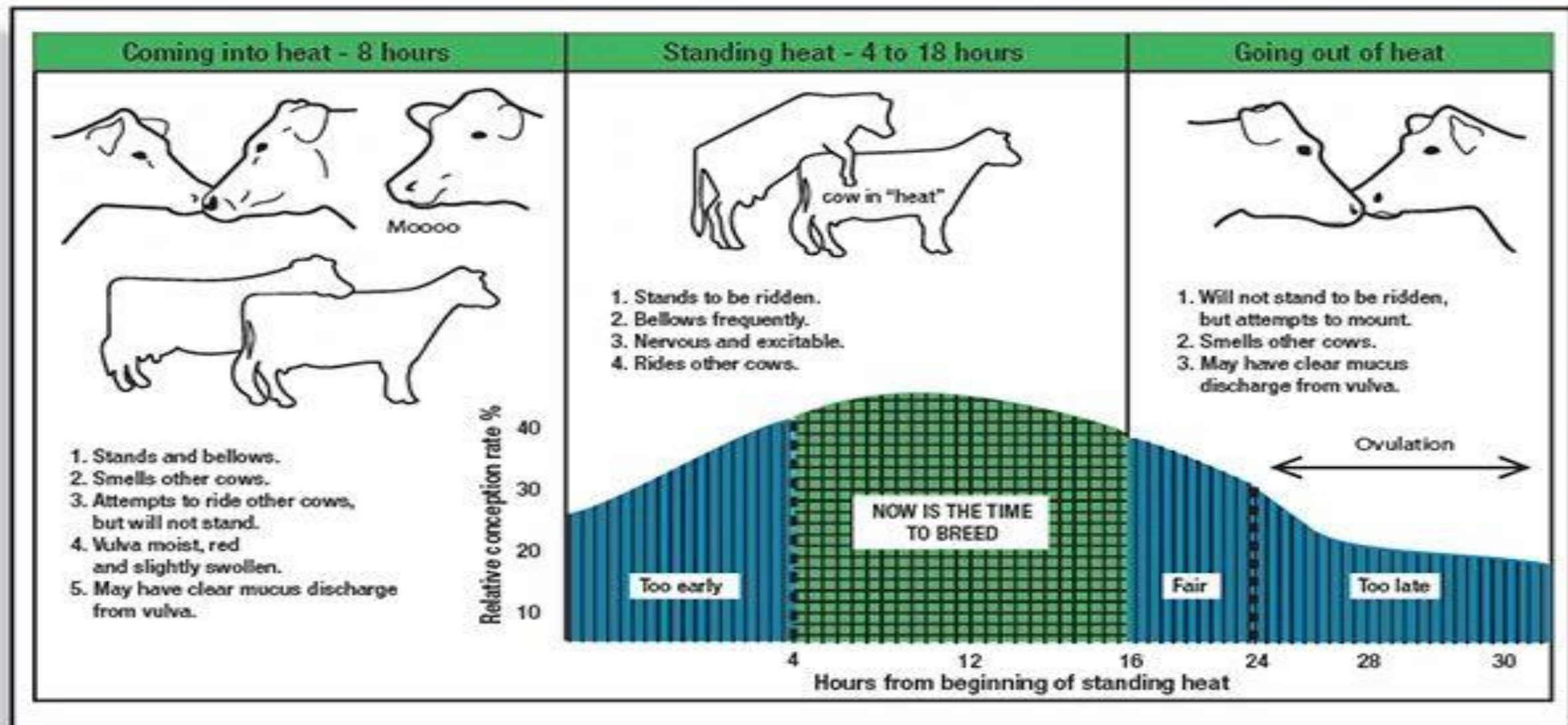
## Figure 1

### Biological events associated with timing of insemination

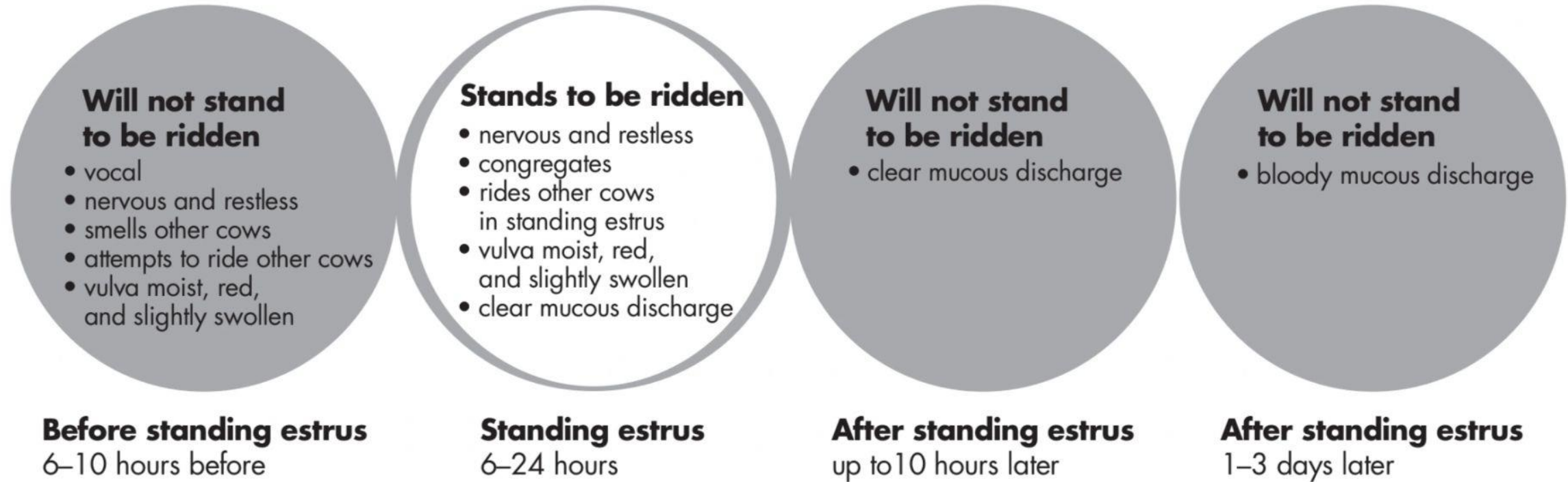


# Figure 2

## Behavioral signs related to estrus with relative conception rates for insemination from the beginning of standing heat



**Figure 2.** Signs to look for before, during, and after standing estrus.







# LA GESTATION

# PROGESTATION CHEZ LA VACHE

Déroulement de la progestation chez la vache (durée en jours depuis le jour de la fécondation)

STADE MORULA	BLASTOCYSTE	ENTRÉE DANS L'UTÉRUS	IMPLANTATION
5 jours	8 – 9 jours	4 – 5 jours	30 jours

# Identification du stade du cycle œstral

Tableau 2. Caractéristiques des organites ovariens et de l'utérus à la palpation et des sécrétions génitales selon les stades du cycle œstral chez la vache.

		Proœstrus	Œstrus	Métœstrus	Dicœstrus
Follicule		10 à 15 mm	15 à 25 mm	Néant	10 à 15 mm
Corps jaune	type	CL2	CL1	CH ou CHC 1 à 3	CL3 / CLC3
	diamètre	10 - 20 mm	< 10 mm	10 - 20 mm	> 15 mm
	consistance	Ferme à dure	Ferme à dure	Friable, molle	Ferme
Cornes - consistance		Ferme	Tonique	Ferme	Flasque
Écoulements	quantité	Abondant	Très abondant	± Abondant	Absent
	nature	Muqueux	Muqueux	Muco-sanguinolent	
	qualité	Filant	Très filant	Filant	