

**S1 Table. Parameters used in implicit functions for description of the bovine female genital tract.** Dimensional parameters were taken from Busch et al. [48]. Educated guesses for the number of microgrooves were taken with the help of microscopic images and sketches from Mullins and Saacke [21].

Parameter	Value	Description	Source
$l_v$	25 cm	Length of the vagina	Busch et al.[48]
$r_v$	2.5 cm	Radius of the vagina	
$l_{cv}$	5 cm	Length of the cranial vagina	
$r_c$	1 cm	Radius of the cervix	
$l_c$	8 cm	Length of the cervix	Busch et al.[48]
$l_{ub}$	3 cm	Length of the uterine body	Busch et al.[48]
$r_{uh\_1}$	1.5 cm	Radius at lower end of uterine horns	
$r_{uh\_2}$	0.5 cm	Radius at the upper end of uterine horns	
$l_{uh}$	40 cm	Length of the uterine horns	Busch et al.[48]
$l_{utj}$	5 cm	Length of the UTJ	
$l_o$	25 cm	Length of oviducts	Busch et al.[48]
$r_{o\_1}$	0.05 cm	Radius at lower end of oviducts	
$r_{o\_2}$	0.1 cm	Radius upper end of oviducts	
$z_{cv}$	25 cm	z baseline of cranial vagina	calculated
$z_c$	30 cm	z baseline of cervix	calculated
$z_{ub}$	38 cm	z baseline of uterine body	calculated
$z_{uh}$	41 cm	z baseline of uterine horns	calculated
$z_{utj}$	81 cm	z baseline of UTJ	calculated
$z_o$	86 cm	z baseline of oviducts	calculated
$d_{center}$	-	Distance to z-axis	calculated (Eq S3)
$d_r$	-	Distance to compartment radius	calculated (Eq S10)
$A_{pf}$	-	Amplitude of primary folds	calculated (Eq S6)
$A_{pf}^{max}$	-	Maximal depth of primary folds.	calculated (Eq S5)
$A_{sf}$	-	Amplitude of secondary folds	calculated (Eq S7)
$A_{sf}^{max}$	0.3	Maximal depth of secondary folds.	educated guess([21])
$k_A^{sf}$	0.8	-	educated guess([21])
$k_A^{pf}$	0.5	Fraction of primary folds where secondary folds occur	educated guess([21])
$\omega_{pf}$	8	Number of primary folds	educated guess([21])
$\omega_{sf}$	32	Number of secondary folds	educated guess([21])
$z_{div}$	4	Height at which uterine horns divide	educated guess([21])
$r_{zdiv}$	-	Radius at which uterine horns divide	calculated (Eq S19)