

1 **Use of contrast-enhanced ultrasonographic examination to**  
2 **evaluate health status of mammary glands of ewes at the end of**  
3 **a lactation period**

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11 **Supplementary material 1.** B-mode ultrasonographic presentation of mammary parenchyma;  
12 image taken at the 6th month of lactation period, along the long axis of the udder; left: Imaging of  
13 mammary gland of a healthy ewe, with mildly echogenic mammary parenchyma – right: imaging  
14 of mammary gland of a ewe with nodular content therein recorded during clinical examination,  
15 with presence of encapsulated round structure with hypoechoic capsule and a hyperechoic  
16 content (images taken and processed on a MyLab® 30 ultrasonography system (ESAOTE SpA) with  
17 linear transducer, imaging frequency: 12.0 MHz - scanning depth: 50 mm).



29 **Supplementary material 2.** Quantitative results (median [min.-max.]) of B-mode and Doppler  
 30 ultrasonographic examination of the udder of ewes with or without history of mastitis

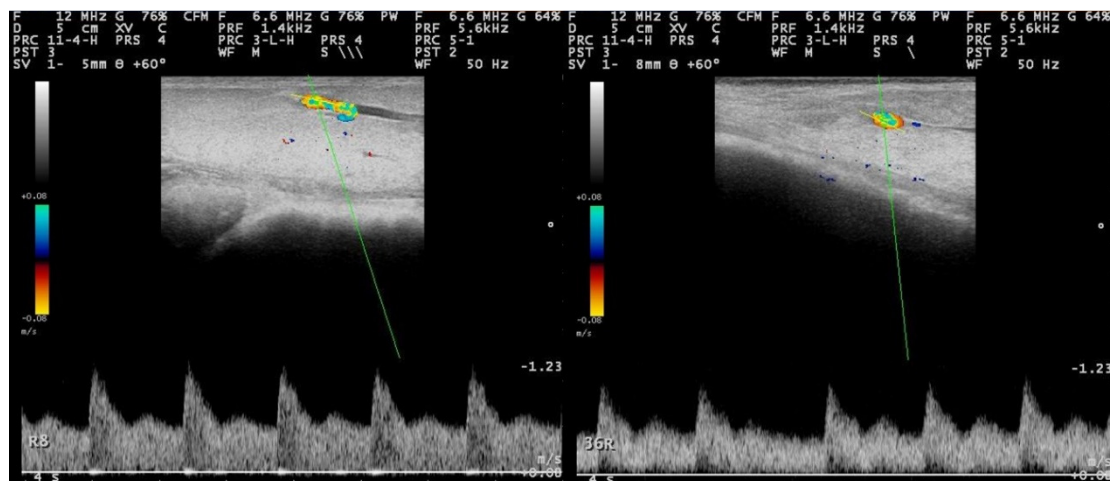
Ultrasonographic parametre	Mammary glands of healthy ewes (n=4)	Mammary glands of ewes with history of mastitis (n=3)*	P
Mammary parenchyma grey-scale	199 (194-206)	160 (158-160)	0.05
External pudendal artery diametre (cm)	0.32 (0.27-0.37)	0.37 (0.26-0.46)	NS
Resistance index	0.58 (0.55-0.60)	0.55 (0.53-0.61)	NS
Pulsatility index	0.98 (0.95-1.05)	0.97 (0.89-1.10)	NS
Systolic:diastolic velocity ratio	2.35 (2.21-2.52)	2.20 (2.13-2.55)	NS
General pressure (mm Hg)	4.99 (4.90-5.20)	4.20 (3.40-5.90)	NS
Mean pressure (mm Hg)	1.84 (1.70-1.90)	1.40 (1.10-2.20)	NS
Mean velocity (m s <sup>-1</sup> )	64.65 (63.90-65.10)	57.40 (50.70-72.40)	NS
Systolic acceleration (m s <sup>-2</sup> )	9.68 (8.31-10.71)	12.52 (10.41-12.65)	NS
Blood input (mL min <sup>-1</sup> )	219.5 (211.0-232.0)	190.0 (180.0-199.0)	0.05

31 \* results for the right gland of ewe B have not been included, as clinically evident abnormalities were recorded  
 32 therein.

33 NS: non-significant

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 36 **Supplementary material 3.** Doppler ultrasonographic presentation of the external pudendal  
 37 artery taken at the 6th month of lactation period; left: spectral waveforms in the external pudendal  
 38 artery of a healthy ewe - right: spectral waveforms in the external pudendal artery of a ewe with  
 39 history of mastitis, but with no clinical abnormalities detected during examination, with reduced  
 40 blood input into the respective mammary gland (images taken and processed on a MyLab® 30  
 41 ultrasonography system (ESAOTE SpA) with linear transducer, imaging frequency: 6.6 MHz -  
 42 scanning depth 50 mm).



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51 **Supplementary material 4.** Contrast-enhanced ultrasonographic examination in mammary  
52 gland of healthy ewes, taken at the 6th month of lactation period, along the long axis of the udder.  
53 Video taken and processed on a Vivid-I ultrasonography system (General Electric) with convex  
54 transducer, imaging frequency: 2.0/4.0 MHz - mechanical index: 0.09 - power: 22dB – scanning  
55 depth: 60 mm – contrast agent: 20 µL sulphur hexafluoride in microbubbles.

56 Video, which can be accessed at the below Dropbox link

57 [https://www.dropbox.com/s/pt0p2h5xleaerxg/Mantziaras%20et%20al.-  
58 supplementary%20material4.wmv?dl=0](https://www.dropbox.com/s/pt0p2h5xleaerxg/Mantziaras%20et%20al.-supplementary%20material4.wmv?dl=0)

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61 **Supplementary material 5.** Contrast-enhanced ultrasonographic examination in mammary  
62 gland of ewes with history of mastitis, taken at the 6th month of lactation period, along the long  
63 axis of the udder. Video taken and processed on a Vivid-I ultrasonography system (General  
64 Electric) with convex transducer, imaging frequency: 2.0/4.0 MHz - mechanical index: 0.09 -  
65 power: 22dB – scanning depth: 60 mm – contrast agent: 20 µL sulphur hexafluoride in  
66 microbubbles.

67 Video, which can be accessed at the below Dropbox link

68 [https://www.dropbox.com/s/g5xx2vwyhtrkxwg/Mantziaras%20et%20al.-  
69 supplementary%20material5.wmv?dl=0](https://www.dropbox.com/s/g5xx2vwyhtrkxwg/Mantziaras%20et%20al.-supplementary%20material5.wmv?dl=0)

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