GOBIERNO de CANTABRIA
Consejería de Desarrollo Rural, Ganadería, Pesca y Biodiversidad

Tragsega
Grupo Tragsa

FAECAL PROGESTERONE FOR MONITORING MONCHINA BEEF CATTLE ESTROUS CYCLE

de Argüello Díaz, S [1]; Fernández Irizar, J [2]; Ortiz Gutierrez, A [2]; Chomón Gallo, N [2]

1 - **CENSYRA Torrelavega.** Bº Caserios s/n 39300 Torrelavega (Cantabria)
2 - **TRAGSEGA.**

INTRODUCTION

Estrus detection and follicular dynamic knowledge are major constrain to the successful implementation of artificial insemination and embryo transfer. There is a need to develop non-invasive methods that allows managing reproduction in beef cattle herds managed extensively, like Monchina breed. Faecal hormone determination avoids negative effects related to stress.

OBJETIVE

Monitoring Monchina cattle estrous cycle through faecal progesterone.

MATERIALS AND METHODS

The study was carried out during autumn 2008 in 3 heifers Monchina cattle non pregnant or lactating, sexually active and in good condition, housed with compound feed.
Blood samples were collected from coxigeal vein and faeces were taken directly from the anus during 62 each other day.
Analyses were based in the competition EIA technique (Enzyme Immune Assay). Previously, the technique was validated in faecal and blood samples daily collected during 23 and 25 days respectively. The direct technique (without hormone extracted) was selected in serum and the Isobe Method (2005) was followed in faeces (Table1).

TABLE 1.Coefficient of variation (CV)obtained in faeces and serum validation samples applyng different techniques.

SAMPLE		CV INTRA-ASSAY	CV INTER-ASSAY
FAECES	Extracted	10	18
	Non Extracted	5.8	9.5
SERUM	Brown	6.5	10
	Isobe	6.3	9.5

Finally, Pearson correlation coefficient was individually and pooled applied for faecal and serum pairs samples. SPSS v 14.0 was employed.

RESULTS

Progesterone profiles in serum and faecal samples reflect the oestrus cycle in the studied cows (Table 2 & 3)(Figure 1 & 2). No marked or constant delay (0 to 78 hours) is appreciated (Figure 3).

TABLE 2.Central Tendency Measures of P4 concentration in faeces.

COW	N	MEAN	STANDARD DEVIATION	STANDARD ERROR DIFFERENCE	95% MEAN CONFIDENCE INTERVAL lower	upper	MINIMUM	MAXIMUM
1	31	6.21	4.35	0.78	4.62	7.81	1.1	15.84
2	31	6.52	4.26	0.76	4.96	8.08	1.05	13.59
3	31	6.57	4.70	0.84	4.85	8.29	1.19	19.58
TOTAL	93	6.43	4.39	0.46	5.53	7.34	1.05	19.58

TABLE 3.Central Tendency Measures of P4 concentration in serum.

COW	N	MEAN	STANDARD DEVIATION	STANDARD ERROR DIFFERENCE	95% MEAN CONFIDENCE INTERVAL lower	upper	MINIMUM	MAXIMUM
1	31	1.36	1.31	0.24	0.87	1.84	0.04	5.21
2	31	3.27	3.05	0.55	2.15	4.39	0.5	12.95
3	31	2.17	2.66	0.48	1.19	3.14	0.07	9.44
TOTAL	93	2.16	2.56	0.27	1.74	2.79	0.04	12.95

FIGURE 1. Box plot faeces P4 concentration.

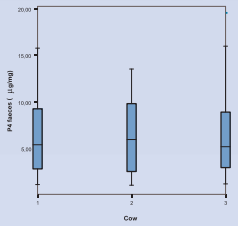


FIGURE 2. Box plot P4 concentration during the ovarian cycle.

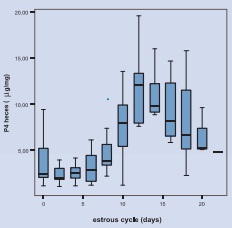
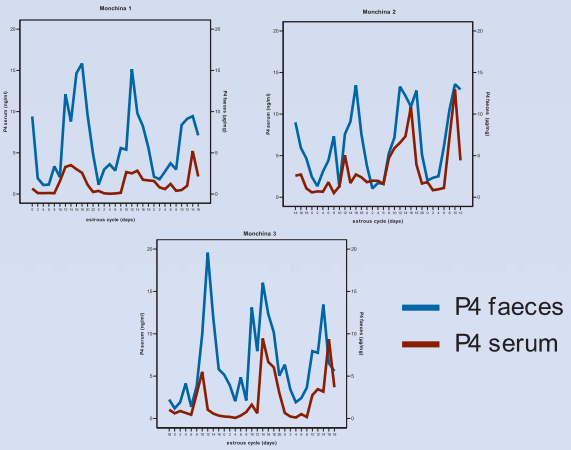


FIGURE 3. Faecal and serum progesterone concentration for the studied cows.



Correlation coefficients between serum and faecal progesterone, calculated individually for the 3 studied cows, were 0.657, 0.690 and 0.490 (p-value < 0.001). Pooled data analysis resulted 0.556 (p-value < 0.001).

CONCLUSION

- **Serum Progesterone levels characterize the Estrous Cycle in Monchina Cows.**
- **Correlation coefficients show that faecal and serum progesterone are associated.**
- **Faecal progesterone determine the start and the end of the Follicular Phase in Monchina Estrous Cycle.**

It is concluded through these obtained results that faecal progesterone could be a non invasive method to characterize Monchina cattle estrous cycle. Further research is needed to develop a calibration curve showing faecal and serum progesterone direct correlation in Monchina beef cattle.

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