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# Determination of Pregnancy-Associated Glycoproteins (PAG) in goats by ELISA with two different antisera

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## Introduction

Pregnancy-associated glycoproteins (PAG) are macromolecules produced by the placenta and released to the maternal circulation. In cows, PAG serves as a useful means of pregnancy detection.
The present study addresses the question to what extent plasma PAG determination may serve a similar purpose in goats and whether the bovine PAG-test can be utilized to this end.

## Materials and Methods

Blood samples were drawn by jugular venipuncture in 8 synchronized and artificially inseminated pluriparous Boer goat does twice weekly during the first 7 weeks and the last 4 weeks of pregnancy, and once a week during the remaining part of pregnancy and 4 weeks postpartum.
Plasma PAG concentrations were determined by applying a competitive enzyme-linked immunosorbent assay using two different antisera : a) Caprine PAG 55 kDa+62 kDa (AS 706), b) bovine PAG-1 (AS 726). In both assay systems purified bovine PAG served as standard and tracer and sheep anti-rabbit immunoglobulin g served as coating antibody.

## Results

As shown in Fig. 1, using AS706, a drastic increase was recorded between day 21 after AI until about day 60 when a level of 70 ng/ml was reached. Thereafter it decreased and reached basal levels 4 weeks after parturition.
In the case of AS726, a minor increase was observed between day 21 and day 28. Thereafter the same level was maintained until parturition; the decrease was complete by 4 weeks postpartum.

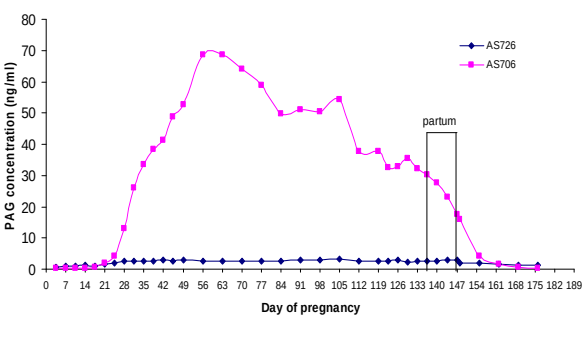


Fig. 1: PAG concentration throughout pregnancy and postpartum measured with ELISA using antisera AS726 and AS706

In Fig. 2 the difference between goats with single and multiple fetuses is depicted. With AS706 a significant difference was observed between day 49 and day 91 after AI, whereas, with AS726 the difference between single and multiple fetuses was not statistically significant.

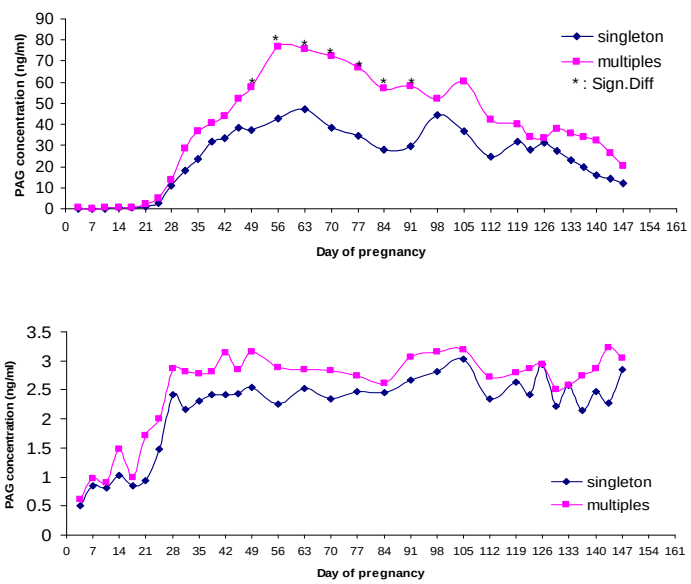


Fig. 2:
Effect of fetal number on PAG concentration recorded using antisera AS706 (top) and AS726 (bottom)

## Conclusion

**Plasma PAG determination can serve as a suitable means of pregnancy detection in goats from day 21 of conception onward. The assay for bovines may be applied, yet more dependable results are arrived at when employing an assay based on caprine antiserum.**

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