# Accuracy of Ultrasonography in Early Pregnancy Diagnosis in the Ewe

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## ABSTRACT

Nonbred and pregnant ewes were examined ultrasonographically at intervals of 4 to 6 days on Days 17 to 34 after estrus. Each ewe was diagnosed as pregnant or nonpregnant, and a score for degree of certainty in the diagnosis was recorded. The goal of the study was to define criteria that could be used for identification and accuracy of diagnosis of an early conceptus and to ascertain the confidence which the operator had in making the diagnosis. Pregnancy was retrospectively confirmed by ultrasonographic detection of an embryo proper and by embryonic heartbeat on Days 21 to 34, and later judged against the number of lambs born to each ewe. The percentage of ewes accurately diagnosed pregnant by ultrasonography was not significantly higher than that by guessing (50%) before Day 24, but reached 85% on Days 32 and 34. However, the ability to detect nonpregnant ewes by ultrasonography was higher ($P<0.01$), with a greater specificity starting on Days 21 to 23 (80%) and reaching 98% by Days 32 to 34. Before Day 24, the diagnosis of pregnancy in many cases was based primarily upon the ultrasonographic appearance of the uterine lumen and location of the uterus in relation to the bladder rather than upon detection of the conceptus. For the certainty score there was a main effect of day ($P<0.01$) but not for the reproductive status (pregnant vs nonpregnant). The certainty score increased in all ewes among days, and was highest on Days 32 to 34. It was concluded that real time transrectal ultrasonographic scanning of sheep between Days 24 and 34 of gestation offers a safe, accurate and practical means for diagnosing pregnancy.