A Continuing Education Program to Teach Early Pregnancy Diagnosis by Ultrasound in Dairy Cattle

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Introduction

Reducing days open is an important goal in dairy reproductive management. Cows that are not pregnant have to be re-inseminated as soon as possible. Pregnancy diagnosis in cattle has been based on rectal palpation from day 35 and 32 post-insemination (pi) in cows and heifers, respectively. Due to progress in technology, early pregnancy diagnosis by ultrasound became available from day 29 pi and 25 pi in cows and heifers, respectively. However, intensive training is required to achieve high accuracy in those stages. The objective of this project was to develop an interactive multimedia program to teach early pregnancy diagnosis by ultrasound in dairy cows and heifers. With the program, practitioners and veterinary students can shorten the training time and acquire experience in this diagnostic method.

Material and Methods

Video footage was collected from more than 350 pregnancy examinations by ultrasound. After selecting and editing, a CD-ROM-based multimedia program to teach early pregnancy diagnosis with ultrasound in dairy herds was developed in Toolbook II Instructor 6.5 (Clicktolearn.com).

Results and Conclusions

The program consists of four modules on two CD-ROMs. The introduction demonstrates physical, technical and practical concepts of ultrasonography that are important for understanding and interpreting ultrasound images. The diagnosis module demonstrates typical findings for different days of pregnancy, *i.e.* 25-, 28-, 32-, 35-, and more than 40-days post-insemination. For each day, video clips generated from six different pregnancy examinations are available. CD 1 contains 90 pages with 36 still images or graphs, nine animations, 37 video clips, 24 interactive tools to explore images, and 15 soundtracks.

In the quiz module the user is trained with live video footage. The learning objective is to conduct pregnancy examinations by evaluating a selected number of ultrasound videos of pregnant or non-pregnant cows and heifers in random order. A total of 60 ultrasound videos showing different findings of pregnant and non-pregnant cows and heifers are available in various qualities. In the economics module, the user can calculate the profitability of this diagnostic method for his own practice and a given client by means of two spreadsheets. Different input variables can be set to perform a practice-specific cost-benefit analysis. The program runs under Windows 95/98 and NT. The recommended configuration is a Pentium I computer with at least 64 MB of memory and supporting a 640x480 resolution. An 8x CD-ROM drive is recommended. A soundcard and speakers are optional but higly recommended.