

# A Hands-on Foaling Management Laboratory For a Senior Level Horse Production Course

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## Introduction

Lectures, demonstrations, and video tapes are effective methods that are frequently used for teaching students how to manage the foaling mare. However, as most breeders and foaling attendants will testify, actual hands-on experience is also important for a complete and thorough understanding of the procedures and processes involved. Taylor and Kauffman (1983) recently suggested that one of the challenges facing educators in animal science is to include more hands-on experience in their courses. They based this statement on a 1980 survey which revealed that only one-third of the students enrolled in animal science departments had farm, ranch or livestock backgrounds. Since many students enrolled in the senior level horse management course at Texas A&M University have had little or no experience in managing the foaling mare, it became apparent that the laboratory portion of the course needed to incorporate more hands-on experience in this area. Thus, a foaling project was designed and has been implemented and modified over the past 11 years. The current format of the project is presented in this paper.

## Description

The senior level horse management course at Texas A&M University is a three-credit, sixteen-week course that is taught during the spring semester. Each week the class meets for two 1-hour lectures and one 2-hour laboratory. The foaling project is introduced to the students during the first laboratory session. Normal parturition and associated management practices are discussed and a video tape of a mare is shown. Students are also given a handout describing the foaling project plus two copies of a data collection form.

The data collection form (appendix figure 1) is divided into seven sections. In the first three sections the students record general information about the mare, information regarding her nutritional, health and hoof management throughout the project period, and a brief health and reproductive history. The remaining four sections are organized sequentially for the recording of data collected during late gestation, foaling, the early postpartum period and subsequent rebreeding. The students are responsible for collecting most of the data but are not required to feed, provide health care (except at parturition), tease, palpate, or rebreed the mares. Registration papers, health records and reproductive data are made available to the students, and the horse center manager is also available to answer questions.

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Part of the foaling project involves writing a term paper. A handout describing the term paper and grading criteria is given to each student and is discussed during the first laboratory session. The term paper is divided into two sections. The first section of the paper requires students to review current periodicals, textbooks and research reports. It is designed to be a brief summary (approximately 10 pages) of normal parturition and the currently recommended management practices performed during gestation, foaling, the early postpartum period and rebreeding. This section of the paper is completed early in the semester so that the students will have a better understanding of parturition and mare care and will feel more comfortable about managing the mares for which they will have responsibility during the foaling project. Students are provided with a list of "starter" references. Frequently used books, periodicals and papers are placed on reserve at the library. In the second section of the paper, the students are asked to compare data they collect to the normal process described in the first section and interpret any observed differences. This part of the paper encourages students to participate in the project, review the information discussed in the first section and think about the differences between typical and unusual variations from the commonly accepted normal values.

During the second laboratory session, a group of 4 to 6 students is assigned to two mares which are in their last trimester of gestation. This number of students is small enough to optimize interaction between group members yet large enough to allow students to divide up responsibilities for data collection. Assigning two mares per group gives the students an opportunity to compare data and allows for the possibility of missing parturition in one mare. Whenever possible, at least one student who has had experience with foaling mares is assigned to each group. A handout listing all groups, assigned mares and students' phone numbers is given to each student. Also included in this handout are the phone numbers for the instructor, horse center manager and veterinary hospital. Following group assignments, students are taken on a tour of the university horse center. They are familiarized with the foaling barn, weighing scale, the location of the mares, equipment and supplies to be utilized during the foaling project and record systems. Rules concerning the use of facilities and equipment are also discussed.

The remainder of the second, and the entire third and fourth laboratory sessions, are devoted to demonstrating and practicing several of the management practices that the students will utilize during the foaling project. These practices include taking vital signs (Dinger, 1981; Evans, 1981), con-

dition scoring (Henneke et al., 1983), giving injections (Dinger, 1981), taking various physical measurements (with height, heartgirth circumference, etc.), using the colostrometer<sup>a</sup> for determining colostrum adequacy (LeBlanc, 1985), using the water hardness strip test for the prediction of parturition (Cash et al., 1985; Kubiak and Evans, 1986), performing the failure of passive transfer (FPT) test (Rumbaugh et al., 1978), and examination of the placenta (Evans, 1981).

Each group is responsible for determining when to move their mares to the foaling barn for close observation. The foaling barn consists of two large stalls which are separated by a raised platform for observation. A desk, clock and seating are provided for the students. Throughout the nighttime hours the foaling barn is continuously lighted. A small refrigerator (for tetanus antitoxin), test kits, foaling kits, a scale for weighing the placenta and other necessary supplies are located on a table in an area adjacent to the stalls.

When a mare is moved to the barn, the group is required to watch the mare from 6:00 p.m. to 6:00 a.m. each day until she foals. At least one student must be present as long as the mare is in the barn. During the day, the mares are turned out in a large paddock adjacent to the barn and are monitored by horse center personnel. Students are encouraged to call the instructor if they suspect any problems during parturition or if they feel uncomfortable about performing any of the postpartum management practices. When the mare foals, group members are responsible for cleaning and rebedding the stall for use by the next group.

### **Benefits and Suggestions**

Several benefits (based on student evaluations and instructor observations) have been realized from utilizing this project. One benefit is increased student motivation. The opportunity for hands-on experience motivates students to learn. Greater comprehension and long-term retention of the material is another benefit because the information is presented in a variety of formats (i.e., lecture, reading assignments, demonstration and hands-on experience) and is reviewed throughout the semester. Several other educators have also indicated that learning and retention are positively reinforced by hands-on experience (Dewey, 1969; Keeton, 1983; Wilson and Anderson, 1986). In addition, research indicates that hands-on experience is an effective means of achieving course objectives (McKeachie, 1978).

Hands-on experience also develops greater confidence in the students' ability to manage foaling mares and foster maturity as the students learn how to handle the responsibility of caring for a new life. It is important to note that the students are reprimanded only for negligent mistakes. Honest errors are considered part of the learning process and are handled in a positive manner. An important benefit is the increased student-instructor and student-student interaction. The students become an integral part of the

laboratory and are less hesitant about asking questions. Finally, increased involvement in the university horse center's day to day operations, personnel and record systems helps the student learn more about the conduct and organization of an equine facility.

One of the first problems encountered when the foaling project was incorporated into the horse management course was a lack of active participation in the assigned work by some students. This was rectified by incorporating a participation score into the project grade. At the end of the semester, students give themselves and all other group members a score from 0 to 10. The scores are averaged and any significant discrepancies are discussed privately with the students. Throughout the project period, students are also encouraged to share any problems of nonparticipation with the instructor.

The increased time commitment outside of the regularly scheduled class period can be a problem for students who have part-time jobs outside the university and for those who commute from relatively long distances. This potential problem is handled in two ways. As previously discussed, 4 to 6 students in each group allows for more flexible scheduling so that all students do not need to be present for the collection of all data. Secondly, a detailed description of the foaling project is given at the beginning of the semester so that all students clearly understand the time commitment involved, and group members are also encouraged to be flexible in accommodating each student's schedule.

A greater time commitment is also required of the instructor for successful implementation of the foaling project. However, once the initial organization is completed and the students become familiar with the horse center practices and procedures, the time commitment is considerably reduced. By midsemester most students can manage the remaining part of the project by themselves. It is important to note that the assistance and cooperation of the horse center manager is essential for efficient and successful utilization of the foaling project. Thus, his/her input is important in both the planning and implementation phases.

### **Summary**

In summary, this paper describes a foaling project utilized in the laboratory portion of a senior level horse management course at Texas A&M University. The project is designed to give students hands-on experience in managing foaling mares. Groups of 4-6 students are assigned two mares that are in their last trimester of pregnancy. It is the responsibility of each group to record and interpret data obtained during late gestation (body condition scores, body weight, prediction of foaling, etc.), foaling, the early postpartum period and subsequent rebreeding. A barn with two foaling stalls and an observation platform is provided. Students are also given the opportunity to utilize the most up-to-date technology since new management techniques are routinely incorporated into the laboratory experience. During the regular

weekly meeting of the laboratory, written material is presented regarding description of the foaling project, additional reading references, body condition scoring, and procedures for the use of test kits to predict foaling and to monitor the immune status of the perinatal foal. Although the project requires students to sacrifice more personal time than a conventional two-hour laboratory, many students have commented that the hands-on experience has helped them to be better prepared for employment in the horse industry. We recommend this foaling project for laboratory sections of horse management courses where students require experience in managing foaling mares and where pregnant mares and appropriate facilities and equipment are available.

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### Appendix

#### Animal Science 420 Term Project

##### I. Identification

Mare Name \_\_\_\_\_ Date of Birth \_\_\_\_\_  
 Breed \_\_\_\_\_ Registration No. \_\_\_\_\_  
 Sire \_\_\_\_\_ Dam \_\_\_\_\_  
 Description (color, markings, brands, scars) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Height (hands) \_\_\_\_\_  
 Show or Race Record \_\_\_\_\_  
 \_\_\_\_\_

##### II. Management of Mare

A. Health Records - include preventative treatments of previous year, injuries or illness and treatment thereof; problems that arise during the project (do not include reproductive problems here, add additional pages as needed).

Date	Treatment

B. Feeding Schedule - include amount, type of grain, hay and pasture, time fed, how fed, etc.

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C. Hoof Care - during project

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##### III. Reproductive History

A. No. of foals \_\_\_\_\_ No. years failed to conceive (or aborted) \_\_\_\_\_

B. Previous foaling difficulties \_\_\_\_\_  
 \_\_\_\_\_

C. Stallion Information - 1986 (Stallion to which mare is in foal to at start of project).

Name \_\_\_\_\_ Date of Birth \_\_\_\_\_  
 Breed \_\_\_\_\_ Registration No. \_\_\_\_\_  
 Sire \_\_\_\_\_ Dam \_\_\_\_\_  
 Description (color, markings, brands, scars) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Show or Race Record \_\_\_\_\_  
 \_\_\_\_\_

D. Breeding record - 1986

Last breeding date (1986) \_\_\_\_\_ Expected foaling date (1987) \_\_\_\_\_  
 No. cycles bred for conception \_\_\_\_\_

E. Previous reproductive problems - include culture, infections, retained placentas, treatments, etc. (add additional pages as needed).

Date	Treatment