About inducing lactation in mares:

Peter Daels is obviously the man of the moment! See below:
It would be great if he could comment personally..

Rob

AUTHOR(S): Daels-PF; Duchamp-G; Porter-D
ADDRESS OF AUTHOR: Equitechnic, Le Mesnil Vicomte, France.
PUBLICATION YEAR: 2002
LANGUAGE OF TEXT: English
ABSTRACT: We have developed a treatment protocol for the successful induction of lactation in mares. This treatment consists of oestrogen, progesterone, and sulpiride administration for 1 wk. Mares with induced lactation are able to adopt and nurse a foal to weaning age.

TITLE: Induction of maternal behavior in non-parturient adoptive mares.
AUTHOR(S): Porter-RH; Duchamp-G; Nowak-R; Daels-PF
ADDRESS OF AUTHOR: UMR 6073 PRC, Laboratoire de Comportement, INRA-CNRS-Universite de Tours, 37380 Nouzilly, France.
PUBLICATION YEAR: 2002
LANGUAGE OF TEXT: English
ABSTRACT: An attempt was made to elicit maternal behaviour in non-parturient Welsh pony mares through a combination of hormonal treatment and vaginal-cervical stimulation (VCS). Lactation was induced in 16 nonpregnant, non-parturient mares via a combination of estradiol, progesterone and a dopamine antagonist (sulpiride). During the adoption trials, each lactating mare was confined behind a padded bar and a newborn foal was held near her head. Eight of the mares received two 3-minute periods of VCS when the foster foal was introduced. Following VCS, the foal was released and its interactions with the adoptive mare observed until the acceptance criterion was met (i.e. the mare accepted the foal at the udder with no signs of aggression). The remaining eight adoptive mares were treated in the same manner but did not receive VCS. All 16 non-parturient mares eventually accepted and nursed their adopted foal. However, acceptance latencies were significantly shorter for mares in the VCS condition than for those without VCS, and did not differ between the VCS condition and a group of control mares with their biological offspring. In subsequent choice tests, both groups of foster mares (with/without VCS), like the control mares, displayed a preference for their 'own' foal. Once the non-parturient mares accepted their foster foal, their maternal behaviour resembled that of control mothers. The positive effect of VCS on maternal acceptance may reflect a release of oxytocin triggered by this treatment.

TITLE: Induction of lactation in non-foaling mares and growth of foals raised by mares with induced lactation.
AUTHOR(S): Daels-PF; Duchamp-G; Massoni-S; Chavatte-P; Evans-MJ
ADDRESS OF AUTHOR: Department of Physiology of Reproduction and Behaviour, Equine Reproduction Research Unit (INRA), National Institute of Agricultural Research (INRA), 37380 Nouzilly, France.


PUBLICATION YEAR: 2002

ABSTRACT: Four experiments were conducted to compare 3 induction protocols aimed at increasing the production of colostrum and/or simplifying the protocol. In experiment 1, a total of 24 Welsh pony mares were assigned to 3 different treatments varying in use of hormones and milking. To determine if continued sulpiride would increase milk production after week 2, sulpiride treatment was reinitiated on day 23 in 9 mares randomly selected from experiment 1. In experiment 3, treatments 2 and 3 in experiment 1 were combined. Experiment 4 was carried out to determine the growth rate of foals adopted by mares with an induced lactation. 16 newborn foals and three 7-day-old foals were adopted by mares with an induced lactation selected from experiments 1 and 3. No significant differences in daily milk production between treatments were observed. In the non-treated mares, total milk production on day 30 increased by 11% in contrast to 75% in treated mares, suggesting that continuation of sulpiride treatment might further increase daily milk production from week 3 and beyond. Daily milk production on the last day of sulpiride treatment in Treatment 4 was similar to production observed in the 3 treatment groups in experiment 1. There was a tendency for foals raised by their natural mothers to gain more weight during the first 14 days compared to adopted foals. A method that provides a nurse mare in a short interval (> 7 days) with minimal workload and acceptable expectation for growth has been developed. This method offers an alternative to exiting methods to provide nurse mares.

TITLE: Quantitative and qualitative assessment of milk production after pharmaceutical induction of lactation in the mare.

AUTHOR(S): Chavatte-Palmer-P; Arnaud-G; Duvaux-Ponter-C; Brosse-L; Bougel-S; Daels-P; Guillaume-D; Clement-F; Palmer-E

ADDRESS OF AUTHOR: UMR INRA/ENVA 1190, Biologie du Developpement et Biotechnologies, 78340 Jouy en Josas, France.


PUBLICATION YEAR: 2002

ABSTRACT: The induction of lactation is performed in ruminants by steroidogenic impregnation, followed by drugs intended to increase prolactin secretion. The aim of this study was to induce lactation in barren mares and to evaluate milk production. Five treated and 5 control mares were used in June and September in year 1, and 12 mares were used in year 2. Mares were administered a vaginal pessary (500 mg altrenogest and 50 mg estradiol benzoate) for 1 week. The 2nd week, another sponge with 100 mg estradiol benzoate was administered, together with 50 mg/100 kg body weight (BW) sulpiride in oil (IM q12h). All mares were milked by hand. Drug treatment was stopped after 1 L was obtained. Milk production and composition and plasma prolactin concentration were measured. In year 2, the same steroid treatment was
applied, but mares received sulpiride (n=6) or domperidone (1.1 mg/kg PO q12h) (n=6). A milking machine and oxytocin injections 1 minute before the start of milking were used. In year 1, all treated mares started milking within 1-5 days after sulpiride treatment. Mean daily milk production was 0.88±0.52 L/500 kg BW. Milk immunoglobulin G (IgG) contents increased in all mares (IgG concentration range, 14-92 g/L). Plasma prolactin increased during sulpiride treatment (range, 27.7±2.9 to 43.7±6.7 ng/mL [before] to 289.0±7.8 ng/mL during treatment, P < .001). In year 2, results were similar to those in year 1, with peak IgG concentrations ranging from 4.2 to 106.7 g/L and a larger daily milk production (3.13±0.75 with sulpiride and 3.45±0.51 L/500 kg BW with domperidone). In conclusion, lactation can be induced in mares within 2 weeks, and some mares produce good-quality colostrum.

TITLE: Induction for lactation and adoption of a foal by a non-parturient mare.

ORIGINAL NON-ENGLISH TITLE: Induction de lactation et adoption du poulain chez la jument non gestante.

AUTHOR(S): Daels-PF; Duchamp-G; Massoni-S; Decraene-F; Chavatte-Palmer-P

ADDRESS OF AUTHOR: Equipe de Recherche Equine, Physiologie de la reproduction et du comportement, INRA Centre de Tours, Nouzilly, France.


PUBLISHER INFORMATION: Les Haras Nationaux Direction du Developpement; Paris; France

PUBLICATION YEAR: 2002

LANGUAGE OF TEXT: French

LANGUAGE OF SUMMARIES: English

ABSTRACT: The development of an induction protocol for lactation in non-parturient mares started in 1999 at the experimental facilities of the Haras Nationaux in Chamberet, France. The studies were completed between 1999 and 2000 which demonstrated that induction of lactation in mares is possible but appears to be of short duration. In 2000, at the INRA experimental station in Nouzilly, we confirmed the essential role of steroids in the induction protocol, though, we were unable to demonstrate the effect of season on our ability to induce milk production. At the same time, the first newborn foal was adopted by a mare with induced lactation. The growth rate of this adopted foal over the first month was similar to the average growth rate of 6 foals of the same gender born and raised at the same time and place. In 2001, we have developed an induction protocol that was shorter in duration and less labour intensive while giving the same quantity of milk. In addition, 19 foals were adopted by mares with induced lactation. No difference was observed in the weight of adopted and control foals at weaning age (5-6 months). The results of these studies indicate that it is possible to induce lactation in a non-parturient mare and that these mares can be used as nurse mares for orphan foals.