

ABSTRACT

Cyclic ovarian activity and plasma progesterone (P4) concentrations were assessed for 179 days in 5 (free grazing) and 6 (free grazing + high energy and protein-supplemented) normocyclic donkeys. In addition, plasma p4 and cortisol were measured in blood samples collected at 15-min intervals in the same donkeys on days 82-84 and 113-114 when made to carry a cartload weighing about three times their bodyweight for a period of 3h. Cyclic P4 concentrations were measured in samples collected three times weekly. Oestrous cycle lengths and duration of estrous were not influenced by plane of nutrition in both groups of donkey's. Plasma cortisol levels increased significantly ($P < 0.05$) in non-supplemented donkeys during the draught period. Changes in plasma P4 levels during draught were influenced by the stage of oestrous cycle; a significant increase ($p < 0.01$) being observed in donkeys in luteal phase and a decrease ($P < 0.01$) in non-luteal phase. Plasma P4 levels associated with subsequent post-draught oestrous cycles were depressed ($P < 0.05$) in both groups, decline being more prominent in donkeys stressed during non-luteal phase than those stressed during the luteal phase. These results demonstrate that draught does interfere with ovarian cyclic and endocrine functions of working female donkeys and this situation might be exacerbated by poor nutrition.