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## Contribution to the postpartum cycles of fertility study in the two main equine breeds (Barbe and Arabian) in western Algeria

**Barka Mohammed, Mouats Aziz and Halbouche Miloud**
University of Mostaganem, Algeria

In order to characterize fertility in equine breeds in Algeria, we have studied and compared two parameters; anatomical (follicular growth) and livestock (fertility) between the two main equine breeds Barbe and Arabian horses; they are raised in the same culture conditions at the Tiaret National Stud in season 2011. A sample of 13 and 37 mares Barbe breed and Arabian breed respectively, whose average age is between 5 and 25 years, followed by an ultrasound device. On the 5$^{th}$ day after foaling, all mares are passed to the system. We inspected both ovaries to see if there is a large follicle and check uterine involution, this allows us to proceed or not to the projection of mares. Ultrasound results for mares Barbe and Arabian breed showed a fertility rate of 42.85% vs. 34.48%, respectively. The subsequent average diameter of pre-ovulatory follicles is 41.82 vs. 45.48 mm, influenced by a combinatorial effect of race and age ($P < 0.001$). Optimization of fertility postpartum cycles involves the mastery of the factors cited previously.

moh-v@hotmail.com

## Comparative analysis of egg adapted vaccines and Salinomycin against coccidiosis in chicks

**Naveeda Akhtar Qureshi and Wajiha**
Quaid-i-Azam University, Pakistan

Coccidiosis is one of the most economically devastating diseases caused by intracellular protozoan parasite of genus *Eimeria*. Since last few decades anticoccidial drugs are being used but due to abundant use drug resistance *Eimeria* strains developed. In the present study three types of egg adapted vaccines namely; egg adapted gametocytes, sonicated gametocytes and formalin inactivated gametocytes has been developed. Comparative efficacy of salinomycin and egg adapted vaccines was investigated. Total of 90 chicks of one day old were divided into six groups (A-F). On 5$^{th}$ and 15$^{th}$ day of age three groups were vaccinated orally with 0.2 ml vaccines. On 21$^{st}$ day of age all groups were given infection with dose of 10000 oocysts per bird except control group. On 5$^{th}$ day post inoculation 60 mg/kg salinomycin was given to unvaccinated medicated group to check the comparative effectiveness of vaccines and drug. Gametocytes vaccinated and salinomycin treated group had significantly higher ($P \leq 0.002$) body weight gain, feed consumption and mild bloody diarrhea when compared with formalin and sonicated vaccinated and infected non-medicated unvaccinated groups respectively. Results of biochemical tests showed significant decrease in uric acid, creatinine, AST, ALT and increase level of ALP and albumin in all groups except positive control. Histopathological examination showed *Eimeria* induced lesion were mild in gametocytes vaccinated, medicated and control group. While in non-immunized infected group the lesions were severe. Indirect hemagglutination test was applied for detection of antibodies in vaccinated groups and maximum in gametocytes vaccinated group. It is concluded that live gametocytes vaccine were found to be more effective against *coccidiosis* and less virulent than sporocytes which were reported previously to be more virulent than gametocytes.

naveedaqresh@gmail.com