

## **Porcine Zona Pellucida (PZP) vaccination in a free-roaming feral horse population following individual chemical immobilisation and remote booster: Is it feasible?**

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The objective of this study was to assess the outcome of a porcine zona pellucida (PZP) immuno-contraceptive program in a free ranging feral horse population (n=530) in the Romanian Danube Delta. Specifically, the feasibility of PZP administration to individually immobilized mares, with subsequent remote booster application by dart gun was tested. Until 2011, the management of our study population consisted of frequent round-ups for slaughter. Those activities were cruel and actively condemned by the public. For the PZP contraception program a total of 150 mares were chemically immobilized, marked, and vaccinated. Mares were divided into a PZP treatment and into a control group. The mares in the treatment group (n=101) were vaccinated and then partially boosted (n=49) with PZP during October 2013-May 2014. From this group, freshly dropped fecal samples of 41 individuals were collected after 12 -15 mo (in Dec 2014 - May 2015). During this later period, 49 additional mares were immobilized. These mares were used as a control group for endocrine pregnancy diagnosis and blood and fecal samples from n=38 mares were analyzed. Samples were tested for estrogens and 20 $\alpha$ -OH-pregnanes to assess for pregnancy rates. The pregnancy rate of the PZP treated mares was 14,6% as compared to 81,5% of the control group, although 44% of the mares did not receive a booster injection. The horses showed a cumulative behavioral aversion to darting with first darts been delivered from a distance of about 25-30 meters but the following darts from 40-60 meters. We conclude that a PZP contraception program through individual immobilization followed by remote booster administration is a feasible alternative solution to the traditional stressful roundups. Nevertheless this approach is time and resource consuming, stressing the need of a reliable product with multiple year effectiveness without booster.