Reproductive assessment of fluphenazine on domestic stallions

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Specific Aims

Determine the effects of fluphenazine on:

1. the testosterone concentration in the blood serum.
2. sperm parameters.
3. reproductive behaviors of the stallions.

Background

- **Fluphenazine**
  - Reduces dopamine
  - Increases prolactin
  - Decreases LH
  - Decreases Testosterone
  - Reduces Spermatogenesis
  - Reduces Reproductive Behaviors

- By treating stallions with fluphenazine, we hypothesize that testosterone concentrations in the blood will be reduced, consequently decreasing reproductive behaviors and sperm quality.

Methods

- The study design has four stallions studied over two reproductive seasons.
- Two stallions will comprise the experimental group the 1\textsuperscript{st} season and the control group the 2\textsuperscript{nd} season, and the other two stallions vice versa.
- The experimental group receives fluphenazine deaconate injections while the control group receives an equal volume of saline solution.
- **Aim 1:** Jugular blood samples will be collected weekly for 10 weeks. Serum testosterone will be determined by radioimmunoassay (RIA).
- **Aim 2:** Semen samples will be collected weekly and analyzed for motility, viability, and concentration using a computer assisted sperm analysis (CASA) system, and morphology using an eosin-nigrosin stain.
- **Aim 3:** Videos recordings of the semen collections will be reviewed for behavioral differences between the experimental and control groups. The recordings will be reviewed by one blinded reviewer for any distinct changes in handler-stallion behaviors and sexual behaviors of the stallions using an ethogram.

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Working Results

- Until data collection from this season is completed and videos from all stallions are reviewed, the individual treatments will not be disclosed. Overall, four controls will be considered and compared against continuous treatment data.

Graph A: 1st season testosterone levels for each of the four stallions. Graph B: Score of behavior to shed for stallion Singletary during 1\textsuperscript{st} and 2\textsuperscript{nd} seasons. Graph C: Duration from entering shed to wash of stallion Singletary from 1\textsuperscript{st} and 2\textsuperscript{nd} seasons. Graphs D-E: The total number of sperm from each collection for each stallion in the 1\textsuperscript{st} season (D) and 2\textsuperscript{nd} season (E).