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Perissodactyls

Please note that these options are not recommendations for a particular taxon, but possible choices that depend on individual circumstances. It is the responsibility of the veterinarian and animal care staff to determine the dosage and best treatment for an individual based short-term and long-term reproductive goals, facility considerations, and logistical concerns.

THE CURRENT OPTIONS FOR FEMALES INCLUDE:

Regu-Mate® solution (progestin)

Porcine zona pellucida (PZP) (immunocontraception)

Improvest® (immunocontraception)

Note: GnRH agonists are not reliably effective in equids or male perissodactyls in general.

THE CURRENT OPTIONS FOR MALES INCLUDE:

Improvest® (immunocontraception)

Note: GnRH agonists are not effective in male perissodactyls

PROGESTINS

Regu-Mate® (altrenogest)

- Duration of efficacy: Not much more than 1 day, so full dose must be consumed daily in order to be effective.
- Route of administration: Given orally.
- Latency to effectiveness: 1-2 weeks.
- Dosing: Most doses reported to the RMC contraception database are based on the manufacturer's instructions which can be found on the [Regu-Mate Product Page](#).
- Estrous cycles during contraceptive treatment: Unusual but can sometimes occur.
- Use during pregnancy: There is no evidence of problems during early pregnancy; however not recommended in late pregnancy because of the possibility of prolonged gestation, although the effect may depend on species and dose.
- Use during lactation: Can be used in lactating females.
- Use in seasonal breeders: Start contraception at least 1 month prior to breeding season.
- Reversibility: While it is designed to be reversible, we have very little data regarding time to reversibility; however, because it has to be given daily, it should clear from the system rapidly once discontinued.
- Use in prepubertal animals: The lack of data on pre-pubertal treatment and potential long-term effects on fertility contraindicates recommending contraception before puberty.
- Behavioral effects: Data deficient.
- Effects on physical characteristics: Data deficient.
- Other: Marketed for short-term estrus suppression in domestic horses.
- **Cautions:** Protective gloves should be worn when using this product, as it might be absorbed through the skin and cause disruption of menstrual cycles and prolongation of pregnancy in humans.

Progestin-Related Cautions

- Progestins may cause hydrometra, although the condition usually reverses when treatment is stopped.
- No progestins other than altrenogest (Regu-Mate) have been shown to be effective in equids
- In areas where cleaning is done by hosing (i.e., water under pressure), aerosolization of fecal matter, including excreted steroid hormones from MGA or Depo-Provera, is possible. Proper precautions should be taken.

IMMUNOCONTRACEPTION

Porcine Zona Pellucida Vaccine

- Duration of efficacy: Species-dependent; for most species, it is effective 6 months to 1 year. First and second injections should be given no sooner than 2 weeks apart and subsequent boosters administered as needed. For year-round breeders, boosters should be given every 8 months.
- Route of administration: Injectable intramuscular.
- Latency to effectiveness: Effective only after the primer and initial booster injection (typically given at 2-4 week intervals), depending upon species and adjuvant. There must be a minimum 2-week interval after the second dose before the male is placed with the female.
- Dosing: Doses vary by taxon. Dosage guidelines can be obtained from the Science and Conservation Center at <https://www.sccpzp.org/> when ordering this product.
- Estrous cycles during contraceptive treatment: Animals will continue to show signs of breeding behavior even when they are adequately contracepted. The breeding season may extend beyond what is considered typical, resulting in additional estrous cycles. However, with repeated treatment, cycles may become irregular and eventually cease.
- Use during pregnancy: Does not interrupt pregnancy or affect fetal development.
- Use during lactation: No known contraindications based on data from feral horse mares; data deficient in other species.
- Use in prepubertal animals: The lack of data on pre-pubertal treatment contraindicates recommending contraception before puberty.
- Use in seasonal breeders: Because PZP is not effective until after at least 2 injections (typically given 2-4 weeks apart), depending on species and adjuvant, treatment should be initiated at least 2 months before the anticipated onset of the breeding season.
- Reversibility: Is intended to be reversible, but repeated treatment can extend time to reversal. Because reversal becomes less likely with repeated treatment, use should be limited to 3-4 consecutive years or to animals not essential for breeding programs.
- Behavioral effects: Since the vaccine usually doesn't suppress estrous cycles, it has little or no effect on social behavior. In some species the failure to conceive can result in longer than usual breeding season, and in some cases this can result in aggression and social disruption.
- Effects on physical characteristics: Data deficient.
- Other: Contact Kim Frank at the Science and Conservation Center (kfrank@sccpzp.org) for more detailed instructions and to order this product.

PZP-Related Cautions

- PZP may not be reversible after long-term use (>3 consecutive years).

Improvest® (Anti-GnRH Vaccine)

- Duration of efficacy: The data on duration of efficacy and reversibility for wildlife species are limited.
- Route of administration: Injectable intramuscular or subcutaneous.
- Latency to effectiveness: According to the manufacturer, Improvest becomes effective 1-2 weeks after the second injection, typically given 1 month after the first, so separation of the sexes is recommended until then.
- Dosing: Dosage and frequency of injection information reported to the RMC contraception database are typically based on the manufacturer's instructions. However, species-specific dosing protocols exist for some taxa for which we have more information (e.g., giraffes). See the [Improvest Product Page](#) for more details.
- Estrous cycles during contraceptive treatment: Unlike GnRH agonists (e.g., Suprelorin), Improvest should not cause an initial stimulation, or flare, of the reproductive system, but some evidence of a flare has been noted in giraffe. Estrous cycles should cease to occur after the second injection is administered.
- Use during pregnancy: Data deficient.
- Use during lactation: Data deficient.
- Use in prepubertal animals: The lack of data on pre-pubertal treatment and potential long-term effects on fertility contraindicates recommending contraception before puberty. Also, because Improvest suppresses gonadal steroids, its use may delay epiphyseal closure of the long bones, resulting in taller individuals, similar to the effects of pre-pubertal spaying and neutering in domestic dogs and cats.
- Use in seasonal breeders: For females, both the initial injection and 1-month booster must be completed prior to the anticipated breeding season. For males, both injections must be completed at least 2 months before the anticipated breeding season, since sperm are typically produced in advance of first ovulation.
- Reversibility: Improvest was not designed specifically to be reversible, although reversibility has been demonstrated in some species.
- Behavioral effects: Unknown, but expected to be similar to those following gonadectomy.
- Effects on physical characteristics: In general, the effects should be similar to those from ovariectomy or castration. Because appetite may increase food restriction may be needed. In males, muscle loss may result in overall weight loss unless replaced by fat. In sexually dimorphic species, males may become the size (weight) of females. Males may lose secondary sex characteristics.
- Other: According to the manufacturer, Zoetis, Improvest may cause mild, transient injection-site inflammation. All adverse events should be reported to the AZA Reproductive Management Center and to Zoetis, if requested.

Improvest-Related Cautions

- Improvest may not be reversible after long-term use.

For more details on each of these products, please refer the specific product page.

Reporting requirements: Any use of Suprelorin implants or MGA feed in the United States must be reported to the RMC via our online contraception survey website (<https://www.zoocontraceptiondata.org>), including any and all adverse events associated with product use. Additionally, in order to increase our knowledge of the efficacy and reversibility of other contraception products, it is recommended that all individuals on contraception be added to the RMC's contraception database via our online contraception survey website (<https://www.zoocontraceptiondata.org>).

Ongoing Studies for which sample collection is encouraged:

- ***RHSP Archive*** - The RMC and the Reproductive Health Surveillance Program (RHSP) request that facilities submit complete reproductive tracts to the RHSP anytime an animal dies or has their reproductive tract removed, to be available for investigations of reproductive health. See the RHSP website (www.stlzoo.org/RHSP) for more specifics.

Disclaimer: The RMC strives to provide accurate and current contraception recommendations based on various sources (e.g., publications, AZA RMC/EAZA RMG database records); however, as these are prescription-only medicines, it is the responsibility of the veterinarian and animal managers to determine the dosage and best treatment for an individual.