THE AZA REPRODUCTIVE MANAGEMENT CENTER at the SAINT LOUIS ZOO

**IN COLLABORATION WITH WEDGEWOOD PHARMACY:**

**MGA IN LIQUID SOLUTION FOR ORAL DELIVERY**

**The Product**

Melengestrol acetate (MGA), a synthetic progestin dissolved in a special propylene glycol formulation for orally delivered contraception. MGA liquid is considered suitable for species in which orally delivered MGA has been shown to be safe and effective. For taxon specific recommendations, see the RMC’s website at [www.stlzoo.org/contraception](http://www.stlzoo.org/contraception).

**Safety to Humans**

When used as directed, this product poses no health risk to humans. Wedgewood Pharmacy believes this MGA liquid formulation is not a hazardous material according to the OSHA Hazard Communications Standard, 29 CFR 1910.1200 or the EPA Community Right-to-Know regulations. Therefore, no Material Safety Data Sheets (MSDS) have been produced. Protective gloves should be worn during administration, since the product contains a hormone, which at high levels might cause disruption of menstrual cycles and prolongation of pregnancy.

**Safety to Treated Animals**

MGA has been administered orally to domestic cattle for decades without untoward effects, which suggests that it should be generally safe for ruminants, but there may be species differences.

**Health Surveillance Monitoring**

In collaboration with the Reproductive Health Surveillance Program, the RMC conducts pathology surveillance to identify adverse reactions that might be associated with contraceptive products. We are requesting reproductive tracts from all male and female mammals treated with contraceptives, as well as from non-contracepted individuals, so we can compare normal changes with lesions arising from contraceptive use. Tissue submission instructions can be found at [www.stlzoo.org/RHSP](http://www.stlzoo.org/RHSP). Contact Dr. Dalen Agnew, Michigan State University, at 517-353-1683, agnewd@msu.edu or Dr. Anneke Moresco, moresco2@gmail.com for additional information.

**Administration of MGA Liquid Contraceptive**

MGA liquid can be added to a treat and delivered to individual animals, can be delivered directly into the mouth of animals such as hippos, or can be added to the regular diet and fed individually or to groups. However, it is important to ensure that each female ingests at least the minimum effective dose every day or ovulation and pregnancy can result. If a female refuses to consume the dose, she should be separated from males until she has consumed the proper dose again for at least 1 week.

Although progestin contraception can be effective even when ovulation is not blocked, to ensure efficacy, we recommend that the dose be sufficiently high to suppress estrous behavior. Please report observations of estrous behavior in treated animals to contraception@stlzoo.org to discuss whether a higher dosage is warranted.

**Latency to effectiveness**

Although individuals vary, threshold levels of the hormone should be reached in the blood within 1 to 3 days of starting this product. However, pre-ovulatory follicles are difficult to suppress, so, if cycle stage is not known, extra time must be allowed. Therefore, separation or alternative contraception should be used for 1-2 weeks after treatment begins.

**Signs of estrus during treatment**

Synthetic progestins may achieve contraception by blocking ovulation, causing thickening of cervical mucus, slowing ovum transport, and/or interfering with fertilization or implantation. However, follicle growth may continue and sometimes be accompanied by estrogen production sufficient to cause estrous behavior. Ovulation may occur even though pregnancy does not ensue. Higher progestin doses may be preferred so that estrous behavior is prevented, but may not be effective in completely suppressing follicle growth and all estrogen production.

**Duration of efficacy and reversibility**

Duration of efficacy may not be much more than 1 day, so the product must be administered daily. Following cessation of treatment, rapid clearance can result in ovulation within a few days, but actual latency to conception will vary by individual.

**Use during pregnancy**

Progestins are not recommended in late pregnancy because of the possibility of prolonged gestation, although the effect may depend on species and dose.

**Use during lactation**

Progestins are sometimes prescribed for lactating women and are considered generally safe for nursing infants.

**Use in pre-pubertal animals**

Lack of data on pre-pubertal treatment and potential long-term effects on fertility contraindicates recommending contraception before puberty. Future reproduction was not affected in calves of domestic cows on MGA-treated feed, but no published studies of pre-pubertal treatment with MGA or other progestins have been conducted with other species, so possible long-term effects on fertility are not known.

**Precautions**

Progestins may cause weight gain in all species. Possible deleterious effects on uterine and mammary tissues vary greatly by species; see cautions for each taxon.

Antler abnormalities such as malformations, full shedding of velvet, and occasional aberrant sheeting or breaking of full antlers, have been seen in males of some cervid species (Raphael et al., 2003).

**Consideration for seasonal breeders**

Treatment should begin at least 1 month before the anticipated onset of the breeding season.

**Recommended doses**

The product comes as a solution of 1.15mg MGA/ml. The following daily MGA doses are recommended:

* 0.1 mg MGA/day/animal - for small mammals such as bats and rodents
* 0.5 mg MGA/day/animal - for larger mammal species <800 lbs.
* 1.0 mg MGA/day/animal - for species >800 lbs, except giraffes and hippos.
* 3.0 mg MGA/day/animal: giraffes and hippos

The maximum safe dose is considered to be up to 3 times those recommended here. NOTE: If the full

dose is not consumed every day, the female should be separated from males, since follicle growth and

ovulation may occur.

**Pricing Information**

The formulation is compounded to a 1.15mg/ml strength. Standard size bottles are 45ml - $34.00, 60ml - $45.50, 100ml - $75.75, and 250ml - $189.50, but it can be ordered any volume at a price of $0.76/ml (plus shipping). A more dilute strength can also be provided on request for smaller mammals. Cost of special flavorings would be extra.

**To Purchase MGA Liquid Contraceptive**

Before placing your first order, you must register with Ashley Franklin, Program Analyst of the AZA Reproductive Management Center (see attached registration form). The Center will then notify Wedgewood Pharmacy that you are an approved buyer, so you will be able to make the purchase directly through a valid prescription.

**Storage**

MGA liquid should be stored at controlled room temperature in the original container. The expiration date of the MGA liquid is 1 year from the date it is transferred into medication bottle (date prescription is filled) or the expiration date from the manufacturer, whichever is sooner.

**Reporting Requirements**

All institutions using this product are asked to contribute contraception information for their animals to the AZA Reproductive Management Center's Contraception Database (<https://www.zoocontraceptiondata.org>). It is essential that accurate records of doses and treatment intervals be maintained, and results reported, to contribute to dosage development and evaluate product efficacy and reversibility.

For questions about the RMC’s Contraception Database, contact:

Ashley Franklin, Program Analyst

AZA Reproductive Management Center

One Government Drive

Saint Louis, MO 63110

Phone: 301-956-0171

Email: franklin@stlzoo.org

**References**

Raphael, B. L., P. Kalk, P. Thomas, P. P. Calle, J. G. Doherty, and R. A. Cook. (2003). Use of melengestrol

acetate in feed for contraception in herds of captive ungulates. *Zoo Biology* 22(5), 455-463.

**PARTICIPANT INFORMATION**

# Sponsor: AZA Reproductive Management Center at the Saint Louis Zoo and Wedgewood Pharmacy

**Sponsor Contact Information:** Ashley Franklin Program Analyst

AZA Reproductive Management Center

One Government Drive

St. Louis, MO 63110

Phone: 301-956-0171

Email: Franklin@stlzoo.org

**Product Information:** Melengestrol Acetate (MGA) dissolved in a propylene glycol formulation

Formulation: 1.15mg/ml (can be diluted by request for smaller mammals)

Source: Wedgewood Pharmacy (Requires a valid prescription)

Cost: $0.76/ml plus shipping and handling, extra cost for addition of special flavorings

Date:

Collaborating Institution:

**Contact person** (responsible for data collection and reporting):

Mailing Address:

## City: State: Zip Code:

**Phone/Fax/E-Mail:**

Animal Information:

Species (genus/species/common name):

Local ID/GAN/House Name(s):

Sex of individual(s) (males.females.unknown):

Date of birth(s):

Date of last offspring birth (if applicable):

**By this application, the participating institution agrees to:**

1) Administer the contraceptive product only to approved species at the recommended dosage;

2) Submit information on animals that were treated, including scientific name, common name, local ID and/or GAN #, birth date, sex, daily dosage, date started, date ended, presence of male in group, estrous behavior observed, birth dates of any offspring born, abortions/adverse events, and date of death if individual dies via the RMC’s online contraception survey website ([www.zoocontraceptiondata.org](http://www.zoocontraceptiondata.org));

3) Submit reproductive tracts to the Reproductive Health Surveillance Program after surgical sterilization or animal death.

**Signed\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Attending or Chief Veterinarian)**

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