

Species name: Fennec fox (Vulpes zerda)

Fact Sheet Compiled by: Veronica Cowl Last Updated: April 2022 Fact Sheet Reviewed by: Isabel Callealta

Contraceptive methods:	GnRH agonist (implant)	GnRH agonist (injection)	Progestogen (oral)	Progestagen (implant)	Progestagen (implant)	Progestagen (injection)	Progestagen (injection)	GnRH vaccine (injection)	Surgical/ Permanent
Contraceptive Product:	Deslorelin acetate	Luprolide acetate	Megestrol acetate	Etonogestrel 68 mg	Levonorgestrel 2x 75mg	Medroxyprogesterone acetate 150 mg/ml	Proligestrone 100mg/ml	GnRH protein conjugate	N/A
Commercial Name:	Suprelorin ®	Lupron®	Ovarid/Megace®	Implanon® Nexplanon®	Jadelle [®]	Depo-Provera®, Depo-Progevera®, Cenavul®	Delvosteron®, Covinan®	Improvac®	N/A
Product Availability:	Suprelorin 4.7mg and Suprelorin 9.4 mg, widely available through veterinary drug distributors in the EU.	Luprolide acetate licenced for human use.	Manufactured by Virbac, available through veterinary distributors.	Manufactured by Bayer Schering Pharma AG. Available through human drug distributors.	Manufactured by Organon. Available through human drug distributors.	Manufactured by Pfizer. Widely available throughout Europe through human drug distributors.	Manufactured by MSD animal Health UK, Intervet Europe. Licensed for use in female dogs, cats, and ferrets; available through veterinary distributors.	Available through veterinary drug	N/A
strictions and/or permit required by Importing Country:	The EAZA RMG recommends: always check with your local licencing authority.	Data deficient.	The EAZA RMG recommends: always check with your local licencing authority.	The EAZA RMG recommends: always check with your local licencing authority.	The EAZA RMG recommends: always check with your local licencing authority.	The EAZA RMG recommends: always check with your local licencing authority.	The EAZA RMG recommends: always check with your local licencing authority.	Widely available throughout European countries. The EAZA RMG recommends: always check with your local licencing authority	N/A
Mechanism of action:	GnRH agonist suppresses the reproductive endocrine system, preventing production and secretion of pituitary and gonadotrophic hormones. As an agonist of the GnRH, it initially stimulates the reproductive system -which can result in oestrus induction and ovulation in females and temporary enhancement of testosterone secretion and spermatogenesis in males - therefore additional contraception is needed during this period in females. Please, see below and refer to Deslorelin datasheet for detailed information.	GnRH agonists suppress the reproductive endocrine system, preventing production of pituitary and gonadal hormones.	· -	with fertilization by thickening cervical mucus, interrupting gamete transport, disruption of implantation, inhibition of LH surge necessary for ovulation.	•		Anti-oestrogenic activity. Interference with fertilization by thickening cervical mucus, interrupting gamete transport, disruption of implantation, inhibition of LH surge necessary for ovulation. Long-term use of progestagen contraceptives are associated with progressive uterine growth and degeneration (i.e. endometrial hyperplasia) that can result in infertility, infection, and sometimes uterine neoplasia. Mammary tissue stimulation also can result in mammary gland neoplasia.	by the anterior pituitary and, ultimately, in a reduction of ovarian follicular development, ovarian steroids and in	Castration/Orchidectomy: surgical removal of the testes. Vasectomy: surgical procedure in which the ductus deferens cut, tied, cauterized, or otherwise interrupted (caution advise Salpingectomy: Fallopian tubes are tied off (caution advise Ovariohysterectomy: removal of one or both ovaries and tuterus. Ovariectomy: removal of both ovaries.
Insertion/Placement:	Subcutaneous, in a place where it can be easily detected or located for removal at a later date (e.g. upper inner fore- or hind leg or post-umbilical area, base of the ear); refer to the Suprelorin fact sheet for effective method of implant placement (tunnelisation).		Orally (daily).	Subcutaneous. The EAZA RMG recommends subcutaneous, upper inner arm for visibility (aid for later removal).	Subcutaneous. The EAZA RMG recommends subcutaneous, upper inner arm for visibility (aid for later removal).	Injectable (intramuscular).	Injectable (subcutaneous - do not inject intradermally or into subcutaneous fat or scar tissue).	Injectable (intramuscular or subcutaneously).	N/A
Females	Recommended	Data deficient	CAUTION - see side effect below	Not recommended for long term (>2 years / >2 breeding seasons) use	Not recommended for long term (>2 years / >2 breeding seasons) use	Not recommended for long term (>2 years / >2	Not recommended for long term (>2 years / >2 breeding seasons) use	Data deficient	Ovariectomy/Ovariohysterectomy
Dose:	Data deficient. 1x 4.7 mg implant is recommended for a minimum duration of 6 months and 1x 9.4 mg implant is recommended for a minimum duration of 12 months. Due to the long natural period of anoestrus in fennec foxes, 9.4mg implants are recommended.	established for all canid species. Available in various formulations - it is recommended	Combined with Suprelorin: 2-5 mg/kg daily orally for 7 days before and 7 days after the placement of Suprelorin implants (see GnRH recommendations). As a contraceptive alone, it should not be used for long-term contraception (>2 years) nor in seasonal breeders for more than 2 consecutive seasons.	N/A	N/A	N/A	N/A	Data deficient.	N/A
	3 weeks average as GnRH agonist initially stimulates gonadotrophin before suppression is achieved - please, refer to the Deslorelin datasheet for detailed information. Additional contraception is needed during this period in order to suppress the initial stimulatory phase (see product data sheet; ~2mg/kg megestrol acetate pills (Ovarid/Megace®) or progestin birth control pills daily 7 days before and 7 days after has been used to suppress initial stimulatory phase. In studies on wild canids, the stimulation phase was not suppressed, and no complications occurred. However, it may be that any complications went unnoticed.	Data deficient.	If a progestin is used in canids, treatment should start well BEFORE any signs of proestrus, since the elevated endogenous oestrogen can exacerbate side effects of the progestin. Treatment should start during deep anoestrus.		N/A	N/A	N/A	Latency to effectiveness can be up to 6 weeks, so separation of the sexes is recommended if possible.	Immediate. Ideally, surgery should be performed during anoestrus.
estrous cycles during contraceptive treatment:	Initial oestrus and ovulation (during the first 3 weeks post implantation) may occur before cyclicity is supressed. To supress the initial oestrus and ovulation, the subsequent progesterone production, and the associated deleterious effects of long-term progesterone exposure you MUST follow the megestrol acetate protocol described above.	Data deficient.	N/A	N/A	N/A	N/A	N/A	Data deficient, but cycling should be suppressed.	N/A
Use during pregnancy:	Not recommended. In domestic bitches, the LH has a luteotropic effect during the first half of pregnancy. Therefore, deslorelin-acetate may induce pregnancy loss due to LH deficiency, corpora lutea regression and subsequent progesterone decline; similar effects may be expected in nondomestic canids.	Not recommended.	Not recommended. Progestins should not be used in pregnant animals, since they may suppress natural signals and mechanisms necessary for normal parturition (e.g. uterine contractions). The use of progestogens during pregnancy may induce foetal development defects (e.g. masculinization of female foetuses). Thus, progestins should only be administered to females CONFIRMED non-pregnant.	not be used in pregnant animals, since they may suppress natural signals and mechanisms necessary for normal parturition (e.g. uterine contractions). Thus progesting should only be	Not recommended. Progestins should not be used in pregnant animals, since they may suppress natural signals and mechanisms necessary for normal parturition (e.g. uterine contractions). Thus, progestins should only be administered to females CONFIRMED non-pregnant.	Not recommended. Progestins should not be used in pregnant animals, since they may suppress natural signals and mechanisms necessary for normal parturition (e.g. uterine contractions). Thus, progestins should only be administered to females CONFIRMED nonpregnant.	Not recommended. Progestins should not be used in pregnant animals, since they may suppress natural signals and mechanisms necessary for normal parturition (e.g. uterine contractions). Thus, progestins should only be administered to females CONFIRMED nonpregnant.	Unknown.	Increased risk of intraoperative bleeding. Lactation onset i possible, due to rising prolactin concentrations following a sudden fall in progesterone.
Use during lactation:	GnRH agonists should not be used during pregnancy as they may prevent mammary development and initiation of lactation by suppressing progesterone secretion. No contraindications once lactation has commenced.	GnRH agonists should not be used during pregnancy as they may prevent mammary development and initiation of lactation by suppressing progesterone secretion. No contraindications once lactation has commenced.		Progestogens may induce lactational arrest.	Progestogens may induce lactational arrest.	Progestogens may induce lactational arrest.	Progestogens may induce lactational arrest.	Unknown.	Increased risk of complications, if mammary tissue is damaged during surgery.
Use in prepubertals or juveniles:	Data deficient in this group, see product information sheet. Deslorelin acetate seems to delay puberty onset up to 30 months in domestic bitches younger than 6 months; similar effects may be expected in non-domestic canids.	Data deficient.	Progestogens may induce premature physeal closure in prepubertal animals.	Progestogens may induce premature physeal closure in prepubertal animals.	Progestogens may induce premature physeal closure in prepubertal animals.	Progestogens may induce premature physeal closure in prepubertal animals.	Progestogens may induce premature physeal closure in prepubertal animals.	Unknown.	Ovariectomy in prepubertal animals may delay epiphysea closure of the long bones, resulting in taller individuals. Increased risk of rupture of the cranial cruciate ligament. Immaturity of external genitalia (infantile vulva - increased

Use in seasonal breeders:	I Data deficient in seasonal preeders (ankil freatment needs	oestrus and ovulation are anticipated (3-4)	If a progestin is used in canids, treatment should start well BEFORE any signs of proestrus, since the elevated endogenous oestrogen can exacerbate side effects of the progestin.	N/A	N/A	N/A	N/A	Data deficient, but if used, vaccination should be done at least 6 weeks prior to the breeding season, before cycling starts.	To minimize complications, surgery should be performed during anoestrus.
Duration:	Duration of efficacy has not been well established - individual variation will occur. As a guideline, 4.7 mg implants will suppress for a minimum of 6 months (typically effective for approximately 1 year); 9.4 mg will be effective for a minimum of 12 months (typically effective for approximately 2 years).	not been well established for all canid species. Available in various formulations	Short-acting effect.	N/A	N/A	N/A	N/A	Unknown for most of species. Antibodies in the domestic pig (species marketed for) last approximately 6 months.	Irreversible.
Reversibility:	Considered reversible, but has not been tested in all canid species. Reversibility has been demonstrated in African wild dogs, maned wolves, arctic foxes, bat-eared foxes, fennec foxes, gray wolves, red wolves, and Mexican wolves. In fennec foxes, reversal times have ranged from 2-6 years afte the placement of 4.7mg implants; these implants were not removed. Removal of implant is recommended to aid reversibility. Implants should be placed in locations with thinner skin e.g. the umbilicus, base of the ear, inner front leg (axilla), or inner thigh. The site of implantation should be recorded for future reference.	Data deficient. Considered reversible, but has not been tested in all canid species.	Reversible. Short-acting effect.	N/A	N/A	N/A	N/A	Data deficient. Improvac has not been designed to be reversible, however reversibility has been demonstrated in some wild animal species when used short term. We do not have any records of reversal in canid species yet.	Irreversible; procedures should only be carried out with the full approval and knowledge of the species coordinator.
Effects on behaviour:	Females - anoestrus (similar to those seen with gonadectomy, but reversible). It may induce oestrus (and ovulation) during the initial flare; therefore additional contraception is needed during this period.	Data deficient. The observed effects should be similar to those following gonadectomy, but reversible.	May cause decreased libido, aggressiveness, increased appetite, polyuria/polydipsia.	N/A	N/A	May cause decreased libido, aggressiveness, increased appetite, polyuria/polydipsia.	May cause decreased libido, aggressiveness, increased appetite, polyuria/polydipsia.	Similar to surgical castration, but for the duration of antibody effect.	Normal behaviour with salpingectomy. Reproductive behaviour supressed after ovariectomy/ovariohysterectomy. Gonadectomy may exacerbate dominance in bitches.
Effects on sexual physical characteristics:	haan ranartad in a taw hitchas and include litaring disease	be similar to those following gonadectomy	Increase in body weight.	Some signs of oestrus behaviour might occur. Ovulation may also occur even though pregnancy does not ensue.	Some signs of oestrus behaviour might occur. Ovulation may also occur even though pregnancy does not ensue.	Long-term use of progestagen contraceptives are associated with progressive uterine growth and degeneration (i.e. endometrial hyperplasia) that can result in infertility, infection, and sometimes uterine neoplasia. Mammary tissue stimulation also can result in mammary gland neoplasia. In addition, urinary incontinence, changes in hair coat, and weight gain may be observed.	associated with progressive uterine growth and degeneration (i.e. endometrial hyperplasia) that	Similar to surgical castration, but for the	No loss of secondary sex characteristics with salpingectomy. Weight gain might occur following ovariectomy/ovariohysterectomy.
Males	Recommended	Data deficient	N/A	N/A	N/A	N/A	N/A	Data deficient	Orchidectomy/Vasectomy
		Data deficient. Dosages have not been well established for all canid species. Available in various formulations - it is recommended							
Dose:	Data deficient. 1x 4.7 mg implant is recommended for a minimum duration of 6 months and 1x 9.4 mg implant is recommended for a minimum duration of 12 months. Usually higher doses are required to mediate testosterone dependent behaviour.	to extrapolate from human/domestic dog literature. Administration of a single subcutaneous injection of leuprolide	N/A	N/A	N/A	N/A	N/A	Data deficient.	N/A
	minimum duration of 6 months and 1x 9.4 mg implant is recommended for a minimum duration of 12 months. Usually higher doses are required to mediate testosterone	to extrapolate from human/domestic dog literature. Administration of a single subcutaneous injection of leuprolide acetate (1 mg/kg) to intact male domestic dogs decreases ejaculate volume, increases morphologically abnormal spermatozoa, and significantly decreases serum testosterone and LH concentrations for 6 weeks.	N/A	N/A	N/A	N/A	N/A	Latency to effectiveness can be up to 6	
	minimum duration of 6 months and 1x 9.4 mg implant is recommended for a minimum duration of 12 months. Usually higher doses are required to mediate testosterone dependent behaviour. Testosterone decreases after 3-4 weeks, but sperm can remain viable for longer. Depending on the species there may be fertile sperm present in epididymis/vas deferens for 6-8	to extrapolate from human/domestic dog literature. Administration of a single subcutaneous injection of leuprolide acetate (1 mg/kg) to intact male domestic dogs decreases ejaculate volume, increases morphologically abnormal spermatozoa, and significantly decreases serum testosterone and LH concentrations for 6 weeks. Data deficient.						Latency to effectiveness can be up to 6 weeks, so separation of the sexes is recommended if possible.	Allow 6-8 weeks post surgery to ensure no viable sperm in ejaculate. Keep sexes apart during this period or keep females
Latency to effectiveness:	minimum duration of 6 months and 1x 9.4 mg implant is recommended for a minimum duration of 12 months. Usually higher doses are required to mediate testosterone dependent behaviour. Testosterone decreases after 3-4 weeks, but sperm can remain viable for longer. Depending on the species there may be fertile sperm present in epididymis/vas deferens for 6-8 weeks post treatment or even longer. Data deficient in this group, see product information sheet. Deslorelin acetate seems to delay puberty onset in 4 months old domestic dogs ⁵ ; similar effects might be expected in non	to extrapolate from human/domestic dog literature. Administration of a single subcutaneous injection of leuprolide acetate (1 mg/kg) to intact male domestic dogs decreases ejaculate volume, increases morphologically abnormal spermatozoa, and significantly decreases serum testosterone and LH concentrations for 6 weeks. Data deficient.	N/A	N/A	N/A	N/A	N/A	Latency to effectiveness can be up to 6 weeks, so separation of the sexes is recommended if possible.	Allow 6-8 weeks post surgery to ensure no viable sperm in ejaculate. Keep sexes apart during this period or keep females contracepted. Increased risk of rupture of the cranial cruciate ligament and other joint problems. May increase phobias and aggressiveness.
Latency to effectiveness: Use in prepubertals or juveniles:	minimum duration of 6 months and 1x 9.4 mg implant is recommended for a minimum duration of 12 months. Usually higher doses are required to mediate testosterone dependent behaviour. Testosterone decreases after 3-4 weeks, but sperm can remain viable for longer. Depending on the species there may be fertile sperm present in epididymis/vas deferens for 6-8 weeks post treatment or even longer. Data deficient in this group, see product information sheet. Deslorelin acetate seems to delay puberty onset in 4 months old domestic dogs ⁵ ; similar effects might be expected in non domestic canids. Data deficient. Should start at least 2 months prior the breeding season. In African wild dogs treatment is recommended 2 months before the expected breeding season in males or females. Deslorelin is considered reversible, but has not been tested in all canid species. Reversibility has been demonstrated in the African wild dog, red wolf and the Mexican wolf. As a guide: 4.7 mg implants will suppress for a minimum of 6 months (typically effective for approximately 1 year); 9.4 mg	to extrapolate from human/domestic dog literature. Administration of a single subcutaneous injection of leuprolide acetate (1 mg/kg) to intact male domestic dogs decreases ejaculate volume, increases morphologically abnormal spermatozoa, and significantly decreases serum testosterone and LH concentrations for 6 weeks. Data deficient. Data deficient. Data deficient should start at least 2 months prior the breeding season. In African wild dogs treatment is recommended 2 months before the expected breeding season in males or females. Data deficient. Considered reversible. Duration of efficacy have not been well established for all canid species. Available in various formulations lasting between 1-6	N/A N/A	N/A N/A	N/A	N/A N/A	N/A N/A	Latency to effectiveness can be up to 6 weeks, so separation of the sexes is recommended if possible. Data deficient. Data deficient. If used, vaccination should be done at least 6 weeks prior to the breeding season, before cycling starts. Unknown for most species. Improvac is NOT designed to be reversible. There are currently no records of reversal on the	Allow 6-8 weeks post surgery to ensure no viable sperm in ejaculate. Keep sexes apart during this period or keep females contracepted. Increased risk of rupture of the cranial cruciate ligament and other joint problems. May increase phobias and aggressiveness.
Latency to effectiveness: Use in prepubertals or juveniles: Use in seasonal breeders:	minimum duration of 6 months and 1x 9.4 mg implant is recommended for a minimum duration of 12 months. Usually higher doses are required to mediate testosterone dependent behaviour. Testosterone decreases after 3-4 weeks, but sperm can remain viable for longer. Depending on the species there may be fertile sperm present in epididymis/vas deferens for 6-8 weeks post treatment or even longer. Data deficient in this group, see product information sheet. Deslorelin acetate seems to delay puberty onset in 4 months old domestic dogs ⁵ ; similar effects might be expected in non domestic canids. Data deficient. Should start at least 2 months prior the breeding season. In African wild dogs treatment is recommended 2 months before the expected breeding season in males or females. Deslorelin is considered reversible, but has not been tested in all canid species. Reversibility has been demonstrated in the African wild dog, red wolf and the Mexican wolf. As a guide: 4.7 mg implants will suppress for a minimum of 6 months (typically effective for a minimum of 12 months (typically effective for a minimum of 12 months (typically effective for a minimum of 12 months (typically effective for a proximately 2 years). Complete recovery of seminal quality will take at least 8-9 weeks after	to extrapolate from human/domestic dog literature. Administration of a single subcutaneous injection of leuprolide acetate (1 mg/kg) to intact male domestic dogs decreases ejaculate volume, increases morphologically abnormal spermatozoa, and significantly decreases serum testosterone and LH concentrations for 6 weeks. Data deficient. Data deficient. Data deficient should start at least 2 months prior the breeding season. In African wild dogs treatment is recommended 2 months before the expected breeding season in males or females. Data deficient. Considered reversible. Duration of efficacy have not been well established for all canid species. Available in various formulations lasting between 1-6 months. Data deficient. The observed effects should be similar to those following gonadectomy, but reversible. Testosterone related	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	Latency to effectiveness can be up to 6 weeks, so separation of the sexes is recommended if possible. Data deficient. Data deficient. If used, vaccination should be done at least 6 weeks prior to the breeding season, before cycling starts. Unknown for most species. Improvac is NOT designed to be reversible. There are currently no records of reversal on the database for canids However; anecdotal reports in several species have shown Improvac to be reversible following	Allow 6-8 weeks post surgery to ensure no viable sperm in ejaculate. Keep sexes apart during this period or keep females contracepted. Increased risk of rupture of the cranial cruciate ligament and other joint problems. May increase phobias and aggressiveness. Irreversible; procedures should only be carried out with the full approval and knowledge of the species coordinator. Normal behaviour with vasectomy (caution with females; ovulation and long-term exposure to progestogens will
Latency to effectiveness: Use in prepubertals or juveniles: Use in seasonal breeders: Duration and Reversibility:	minimum duration of 6 months and 1x 9.4 mg implant is recommended for a minimum duration of 12 months. Usually higher doses are required to mediate testosterone dependent behaviour. Testosterone decreases after 3-4 weeks, but sperm can remain viable for longer. Depending on the species there may be fertile sperm present in epididymis/vas deferens for 6-8 weeks post treatment or even longer. Data deficient in this group, see product information sheet. Deslorelin acetate seems to delay puberty onset in 4 months old domestic dogs ⁵ ; similar effects might be expected in non domestic canids. Data deficient. Should start at least 2 months prior the breeding season. In African wild dogs treatment is recommended 2 months before the expected breeding season in males or females. Deslorelin is considered reversible, but has not been tested in all canid species. Reversibility has been demonstrated in the African wild dog, red wolf and the Mexican wolf. As a guide: 4.7 mg implants will suppress for a minimum of 6 months (typically effective for approximately 1 year); 9.4 mg will be effective for a minimum of 12 months (typically effective for approximately 2 years). Complete recovery of seminal quality will take at least 8-9 weeks after normalization of testosterone concentrations. Data deficient in this group, see product information sheet. Testosterone related aggression is likely to decrease after the initial flare. Testosterone related aggression might increase during the first 1-3 weeks of treatment. Territorial behaviour of males may be affected.	to extrapolate from human/domestic dog literature. Administration of a single subcutaneous injection of leuprolide acetate (1 mg/kg) to intact male domestic dogs decreases ejaculate volume, increases morphologically abnormal spermatozoa, and significantly decreases serum testosterone and LH concentrations for 6 weeks. Data deficient. Data deficient. Data deficient. Should start at least 2 months prior the breeding season. In African wild dogs treatment is recommended 2 months before the expected breeding season in males or females. Data deficient. Considered reversible. Duration of efficacy have not been well established for all canid species. Available in various formulations lasting between 1-6 months. Data deficient. The observed effects should be similar to those following gonadectomy, but reversible. Testosterone related aggression might increase during the initial flare.	N/A N/A	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	N/A N/A	Latency to effectiveness can be up to 6 weeks, so separation of the sexes is recommended if possible. Data deficient. Data deficient. If used, vaccination should be done at least 6 weeks prior to the breeding season, before cycling starts. Unknown for most species. Improvac is NOT designed to be reversible. There are currently no records of reversal on the database for canids However; anecdotal reports in several species have shown Improvac to be reversible following short-term use. Similar to surgical castration, but for the duration of antibody effect. Decreases male aggression due to down regulation	Allow 6-8 weeks post surgery to ensure no viable sperm in ejaculate. Keep sexes apart during this period or keep females contracepted. Increased risk of rupture of the cranial cruciate ligament and other joint problems. May increase phobias and aggressiveness. Irreversible; procedures should only be carried out with the full approval and knowledge of the species coordinator. Normal behaviour with vasectomy (caution with females; ovulation and long-term exposure to progestogens will continue; see below). Loss or reduction of testosterone

Side effects:	Pseudopregancy, endometrial hyperplasia and pyometra may be associated with the use of GnRH agonists as a result of high progesterone levels should ovulation occur during the stimulation phase. A more recently developed Suprelorin® (deslorelin acetate) protocol using Ovarid® (megestrol acetate) to prevent the initial stimulation phase, followed by implant removal when reversal is desired, may be a safer contraceptive option. Depo-Provera® cannot be used to suppress the stimulation phase as it disrupts downregulation with Suprelorin.	Risk of pseudopregnancy, endometrial hyperplasia and pyometra increases with exposure to prolonged circulating progestagens. Long-term progestagen treatment also can result in mammary gland neoplasia.	Risk of pseudopregnancy, endometrial hyperplasia and pyometra increases with exposure to prolonged circulating progestagens. Long-term progestagen treatment also can result in mammary gland neoplasia.	Risk of pseudopregnancy, endometrial hyperplasia and pyometra increases with exposure to prolonged circulating progestagens. Long-term progestagen treatment also can result in mammary gland neoplasia.	projectagen treatment also can result in	Risk of pseudopregnancy, endometrial hyperplasia and pyometra increases with exposure to prolonged circulating progestagens. Long-term progestagen treatment also can result in mammary gland neoplasia.	Occasional swelling at the vaccination site and/or vaccination site abscess may occur. The EAZA RMG recommends always reading the manufacturer's data sheet.	haemangiosarcoma, increased risk of cranial cruciate ligament
Warnings:	Causes initial gonadal stimulation that MUST be suppressed (see above); correct administration is essential - see product information sheet.	If megestrol acetate is used as a contraceptive treatment alone, it MUST be used for <2 consecutive years / breeding seasons. Females should be given the opportunity to reproduce after treatment. The reproductive health of females treated with progestins should be carefully monitored.	If a progestin is used, it MUST be used for <2 breeding seasons. Females should be given the opportunity to reproduce after treatment. The reproductive health of females treated with progestins should be carefully monitored. Implants should be removed after treatment.	Females should be given the opportunity to reproduce after treatment. The reproductive health of females treated with	If a progestin is used, it MUST be used for <2	If a progestin is used, it MUST be used for <2 breeding seasons. Females should be given the opportunity to reproduce after treatment. The reproductive health of females treated with progestins should be carefully monitored.	It should be handled with extreme care to avoid handler accidents. The EAZA RMG recommends always reading the manufacturer's data sheet.	

Reporting Requirements: In order to increase our knowledge of the efficacy of contraception methods in the Canidae family it is recommended that all individuals on contraception be reported to the EAZA RMG

1) Asa, CS, Bauman, KL, Devery, S, Zordan, M, Camilo, GR, Boutelle, S, Moresco, A. (2013). Factors Associated With Uterine Endometrial Hyperplasia and Pyometra in Wild Canids: Implications for Fertility. Zoo Biology, 1-12. DOI: 10.1002/zoo.21069

2) Asa, C., Boutelle, S., & Bauman, K. (2012). AZA Wildlife Contraception Center programme for wild felids and canids. Reproduction in Domestic Animals, 47, 377-380.

3) Maenhoudt C, Santos NR, Fontaine E, Mir F, Reynaud K, Navarro C, Fontbonne A, 2012: Results of GnRH agonist implants in oestrus suppression in bitches and Queens. Reproduction in Domestic Animals. 47(Suppl 6), 393–397. 4) Boutelle, SM, & Bertschinger, HJ. (2010). Reproductive management in captive and wild canids: contraception challenges. International Zoo Yearbook, 44(1), 109-120.

5) Sirivaidyapong, S, Mehl, NS, & Trigg, TE. (2012). Delay of Puberty and Reproductive Performance in Male Dogs Following the Implantation of 4.7 and 9.4 mg GnRH-Agonist Deslorelin at an Early Pre-pubertal Age. Reproduction in Domestic Animals, 47, 400-402. 6) Palm, J & Reichler, IM. (2012). Der Einsatz von Deslorelinazetat (Suprelorin®) in der Kleintiermedizin. Schweiz Arch Tierheilk, 154, 7-12.

7) Agnew, MK, Asa, CS, Franklin, AD, McDonald, MM, & Cowl, VB. (2021). Deslorelin (Suprelorin®) use in North American and European Zoos and Aquariums: taxonomic scope, dosing, and efficacy. Journal of Zoo and Wildlife Medicine, 52(2), 427-436.

8) Asa, C.S. & Porton, I.J. (eds.) (2005) Wildlife Contraception: Issues, Methods, and Applications. The Johns Hopkins University press: Baltimore.

9) Bertschinger, HJ, Asa, CS, Calle, PP, Long, JA, Bauman, K, DeMatteo, K, Jöchle, W, Trigg, TE, Human, A. (2001). Control of reproduction and sex related behaviour in exotic wild carnivores with the GnRH analogue deslorelin: preliminary observations. Journal of Reproduction and Fertility Supplement, 57:275-285.

Disclaimer: The EAZA RMG endeavours to provide correct and current information on contraception from various sources. As these are prescription only medicines it is the responsibility of the veterinarian to determine the dosage and best treatment for an individual