

VETERINARY HANDBOOK

# Protecting long-lasting relationships

**Fipronex® G5** controls and eliminates  
**ALL ECTOPARASITES** and  
prevents insect bites in dogs.



FLEAS



TICKS



LICE



MOSQUITO



FLIES



PHLEBOTOMUS



LARVAE



MITES\*



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Dogs love to spend time with their owners and they deserve a healthy and peaceful coexistence, sharing walks to the park, walks on the beach, trips, always ready for the adventures of life.

As a veterinarian you have a fundamental role, because the quality of this relationship depends on you. No one except you knows how important it is to provide comprehensive protection; and you are the only one who has the experience to take the best decisions for the care and health of dogs.

Trust is essential in your profession. For this reason, we present to you an innovative ectoparasiticide solution of five active ingredients, whose rapid effect and powerful repellent action not only provides comfort to the animal, but also protects and prevents the transmission of diseases.

**Fipronex® G5**, protecting long-lasting relationships.

Your role as veterinarian is to provide quality to these relationships.



# What is Fipronex® G5?

Fipronex® G5 is a panectocide® of unique formulation; this new generation of drugs provides protection and control, eliminating **ALL ECTOPARASITES**. Due to its rapid and effective action, it offers superior benefits in comparison to other formulations.

## Comprehensive protection of Fipronex® G5:

-  **KNOCK DOWN** effect against fleas and ticks.
-  **ANTI-FEEDING** effect in fleas, mosquitoes and phlebotomus.
-  **HOT FOOT** effect in ticks.
-  Double anti-flea effect: adulticide and environmental residuality against immature stages.
-  Triple anti-tick synergic action.
-  Repellent effect against ticks, phlebotomus, mosquitoes and other insects.
-  Pediculicide.
-  Acaricidal effect against *Otodectes cynotis*.



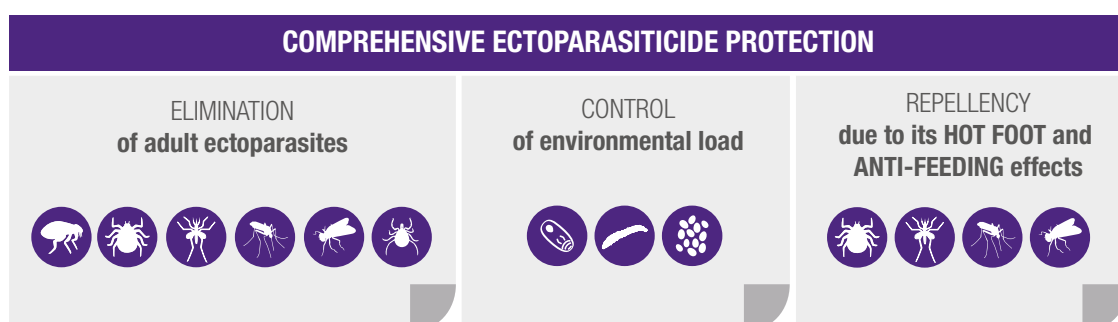
| Fipronex® G5 Spray |        |
|--------------------|--------|
| Dinotefuran        | 3.2 mg |
| Fipronil           | 2.5 mg |
| Pyriproxyfen       | 2.5 mg |
| Permethrin         | 20 mg  |
| Piperonyl butoxide | 3.0 mg |
| Excipients q.s. ad | 1 mL   |

| Fipronex® G5 Drop On |        |
|----------------------|--------|
| Dinotefuran          | 58 mg  |
| Fipronil             | 45 mg  |
| Pyriproxyfen         | 45 mg  |
| Permethrin           | 360 mg |
| Piperonyl butoxide   | 10 mg  |
| Excipients q.s. ad   | 1 mL   |

# Healthy dogs, healthy families

**Fipronex® G5, the Panectocide® per excellence**

Ectoparasites are dangerous and should not bite dogs under any circumstances. A complete antiparasitic should not only eliminate adult stages, but also immature stages and repel, since only one bite is sufficient to endanger the health of dogs and their owners. **Fipronex® G5** offers comprehensive care thanks to its 3 mechanisms of action.



## Innovative Combination

**Fipronex® G5** combines 5 active compounds: dinotefuran, fipronil, pyriproxyfen, permethrin and piperonyl butoxide. Dinotefuran is a new molecule in veterinary use, which gives the product a greater effectiveness and zero resistance.

 **NEW MOLECULE\***  
**ZERO RESISTANCE**

## Dinotefuran vs. Imidacloprid

Dinotefuran is a third-generation neonicotinoid insecticide that has the following advantages over imidacloprid (first generation neonicotinoid):

- + Greater effectiveness against fleas. <sup>(1)</sup>
- + Better effectiveness and repellency against mosquitoes. <sup>(2) (3)</sup>
- + Greater insecticidal power. <sup>(4) (5) (6)</sup>
- + Superior photostability and safety. <sup>(7) (8) (9) (10) (11) (12) (13)</sup>



\*Recently used in veterinary medicine.

# Benefits



Protects against **ALL ECTOPARASITES**.



Its preventive action **reduces the risk of infestation and transmission of diseases**.



Since it **kills on contact and due to its repellent effect**, ectoparasites do not need to bite or sting the pet to be eliminated.



**Rapid action** and great **KNOCK DOWN** power effective 17 seconds after application in spray and 1 minute in drop on.



Residual effect guaranteed for at least **30 days**<sup>(15) (16),\*</sup>



Photostable product.



**Resistant to water** and baths.\*\*



**Non-toxic and highly safe.**  
It possess no danger to pets or humans.



**Practical** use and rapid absorption.



Pleasant fragrance.

## Action compared to other formulations\*\*\*

|                                                                                     |           | fipronex® GS                                                                  |          | Other formulations      |          |                              |          |                                                      |          |   |  |
|-------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------|----------|-------------------------|----------|------------------------------|----------|------------------------------------------------------|----------|---|--|
|                                                                                     |           | Dinotefuran + Fipronil<br>+ Pyriproxyfen + Permethrin<br>+ Piperonyl butoxide |          | Fipronil + S-methoprene |          | Imidacloprid<br>+ Permethrin |          | Imidacloprid<br>+ Permethrin + Piperonyl<br>butoxide |          |   |  |
|                                                                                     |           | Kills                                                                         | / Repels | Kills                   | / Repels | Kills                        | / Repels | Kills                                                | / Repels |   |  |
|  | FLEA      | Adult flea                                                                    | ✓        |                         | ✓        |                              | ✓        |                                                      | ✓        |   |  |
|                                                                                     |           | Immature form                                                                 | ✓        |                         | ✓        |                              |          |                                                      |          |   |  |
|                                                                                     |           | Egg                                                                           | ✓        |                         | ✓        |                              |          |                                                      |          |   |  |
|                                                                                     |           | Environmental control up to 120 days <sup>(2)</sup>                           | ✓        |                         |          |                              |          |                                                      |          |   |  |
|  | TICK      | Adult tick                                                                    | ✓        | ✓                       | ✓        |                              | ✓        | ✓                                                    | ✓        | ✓ |  |
|                                                                                     |           | Immature form                                                                 | ✓        | ✓                       | ✓        |                              | ✓        |                                                      | ✓        | ✓ |  |
|                                                                                     |           | Egg                                                                           | ✓        |                         | ✓        |                              | ✓        |                                                      | ✓        |   |  |
|                                                                                     |           | Protection up to 60 days                                                      | ✓        | ✓                       |          |                              |          |                                                      |          |   |  |
|  | LOUSE     | Adult louse                                                                   | ✓        | ✓                       | ✓        |                              | ✓        | ✓                                                    | ✓        | ✓ |  |
|                                                                                     |           | Immature form                                                                 | ✓        | ✓                       |          |                              | ✓        |                                                      | ✓        |   |  |
|  | MOSQUITO  | Adult mosquito                                                                | ✓        | ✓                       |          |                              | ✓        | ✓                                                    | ✓        | ✓ |  |
|                                                                                     |           | Immature form                                                                 | ✓        |                         | ✓        |                              |          |                                                      |          |   |  |
|  | MITES**** | Adult                                                                         | ✓        |                         |          |                              | ✓        |                                                      | ✓        |   |  |
|                                                                                     |           | Immature form                                                                 | ✓        |                         |          |                              | ✓        |                                                      | ✓        |   |  |

\* Studies have demonstrated a residual power of 120 days in fleas and 60 days against ticks. (15) (16)

\*\* Bath after 24 hours of applying the product is recommended.

\*\*\* Based on the information provided by the manufacturers.

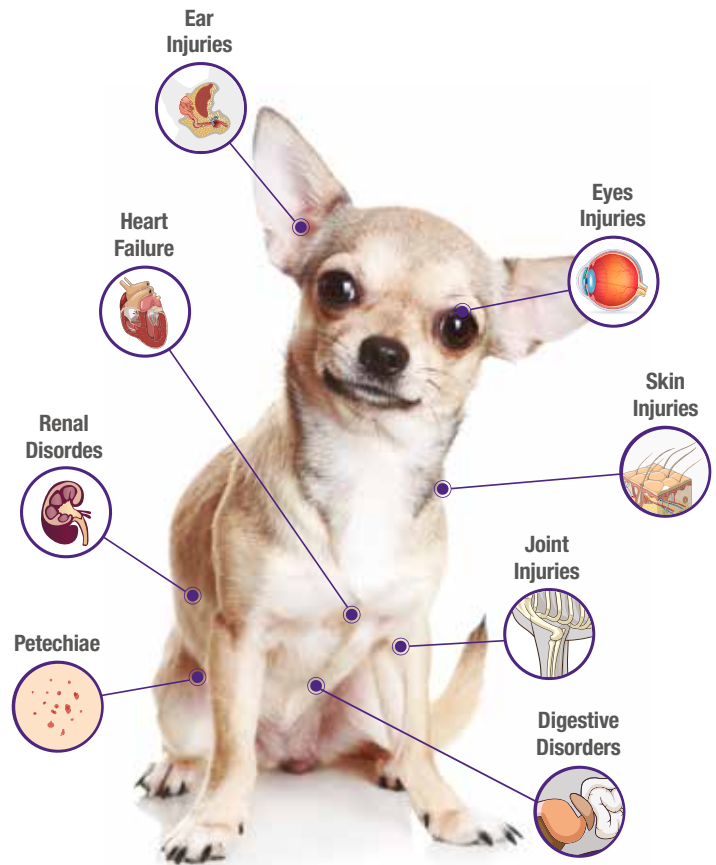
\*\*\*\*Otodectes cynotis.

# Protect them from vectors

One of the most important tasks that you must carry out to guarantee the integral health of the dogs is the prevention against external parasites. With **Fipronex® G5** you can effectively prevent the transmission of diseases and protect the relationships between your patients and their owners.

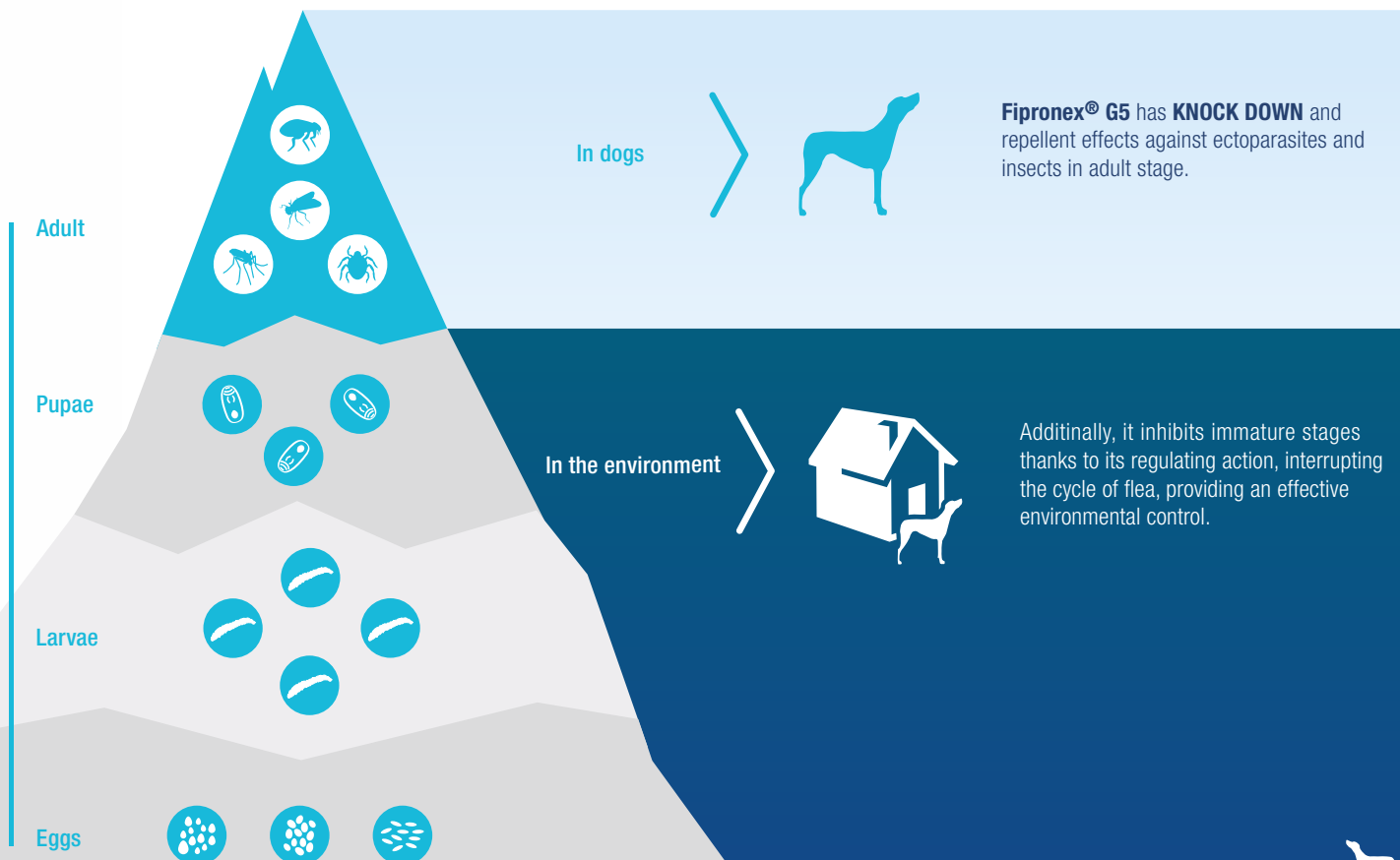
## Vector - borne disease

- **Fleas:** Rickettsiosis, Bartonellosis, Dipylidiasis.
- **Ticks:** Babesiosis, Ehrlichiosis, Anaplasmosis, Lyme disease, Hepatozoonosis, Meningoencephalitis.
- **Mosquitoes:** Dirofilariasis and West Nile disease.
- **Phlebotomus:** Leishmaniasis.
- **Flies:** Parasitic and bacterial infections.
- **Lice:** Dipylidiasis.
- **Mites:** Otitis due to *Otodectes cynotis*.



# Integral Control

We care for the dogs and the environment where they live.



# 5 active principles ingredients with synergistic effect.

The most complete formulation in the market.

# 1

## Dinotefuran

 NEW MOLECULE\*  
ZERO RESISTANCE



Action against fleas, ticks, lice, flies and mosquitoes.

Third-generation neonicotinoid insecticide with action through contact and ingestion.

It binds to nicotinic acetylcholine receptors of insects, causing paralysis and death.

Fast and effective against fleas.

Effective synergy with permethrin for total action against ticks.

Photostable and long-lasting effect.

High safety, it does not bind to acetylcholine receptors of mammals.

# 2

## Fipronil



Action against fleas, ticks and lice.

Great capacity of distribution by means of the sebaceous glands, due to its lipophilic nature (deposit effect).<sup>7</sup>

It has no incompatibility with any other active ingredient.

Antagonist action of GABA (inhibitory neurotransmitter) receptors, causing spastic paralysis in fleas and ticks.



## Synergy

Dinotefuran + Permethrin  
Piperonyl Butoxide + Permethrin

\*Recently used in veterinary medicine



## Pyriproxyfen



Insect growth regulator (IGR).

# 3

Next-generation insect growth regulator (IGR)

It affects the morphogenesis, reproduction and embryogenesis of fleas, mosquitoes and flies.

Fat-soluble, it keeps in the subcutaneous fat of the animal (deposit effect).

Residual effect and prolonged environmental action up to 120 days against fleas.<sup>16</sup>

Photostable, not inactivated under sunlight conditions, unlike other IGRs such as methoprene and fluzazuron.

## Permethrin



Action against fleas, ticks, lice mosquitoes, flies, phlebotomus and mites.

# 4

Insecticide, acaricide, adulticide and larvicide.

Rapid action against fleas and ticks.

Lethal and effective **KNOCK DOWN** effect against ticks, fleas and mites. Its action produces alteration of the sodium channels of the nervous system of ectoparasites, producing death by muscular spasms and paralysis.

**HOT FOOT** effect against ticks.

**ANTI-FEEDING** effect against fleas, flies, mosquitoes and phlebotomus, keeping them from biting the dog.

Residual effect up to 1 month.

## Piperonyl Butoxide



Excellent synergy with permethrin

# 5

It potentiates the insecticidal activity of permethrin from 2 to 12 times against ticks, mites and other insects.

It acts by inhibiting the hydrolytic enzymes responsible for the metabolism of permethrin, making it stay longer inside the insect. In this way, it fights against the metabolic resistance of parasites.

# Triple synergistic action against ticks



The ticks saliva contains substances that may be toxic to the dog. A massive infestation of ticks can lead to severe anemia.

Also ticks are vectors of the following diseases:

- Ehrlichiosis. 
- Lyme disease. 
- Babesiosis. 
- Anaplasmosis. 
- Hepatozoonosis.
- Meningoencephalitis.

**Fipronex® G5** has adulticidal, larvicidal and repellent action on *Rhipicephalus sanguineus*, *Ixodes ricinus* and *Dermacentor reticulatus*. It kills adult ticks by contact and inhibits their reproductive cycle. In addition, its HOT FOOT effect, they do not feed enough, which reduces the risk of transmitting diseases to dogs.

• **HOT FOOT effect:** The product overexcites the nerve endings in the tarsus of the ticks, causing incoordination and consequently restricting their entry into the fur and preventing skin bites.

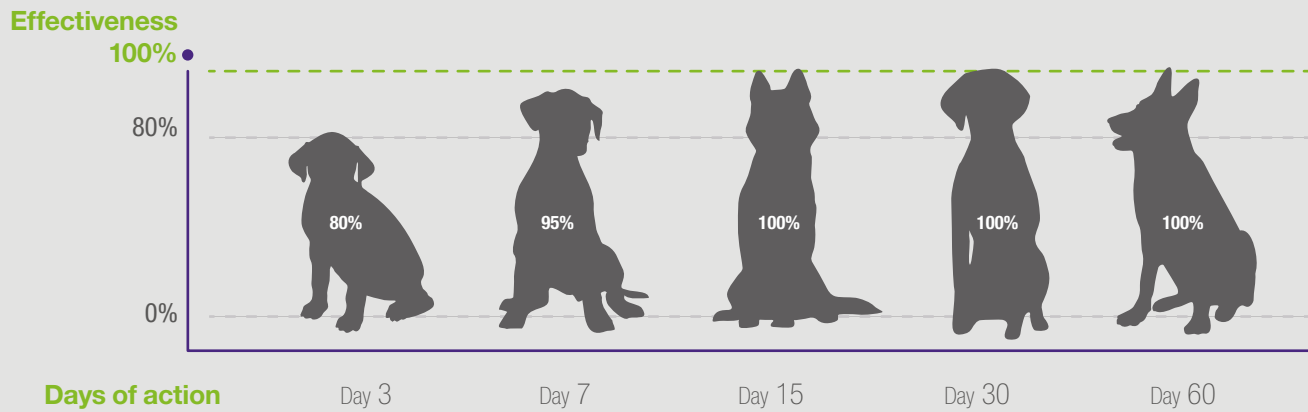


Zoonotic diseases.



# Dogs without ticks up to 60 days

Results of the study for Fipronex® G5 against *Rhipicephalus sanguineus*.



Effectiveness of Fipronex® G5 in control of ticks<sup>15</sup>.

## Action against ticks

### Permethrin

Its ingestion alters the sodium channels of nervous cells, producing paralysis and death of the insect. Its repellent action is also important.

### Piperonyl Butoxide

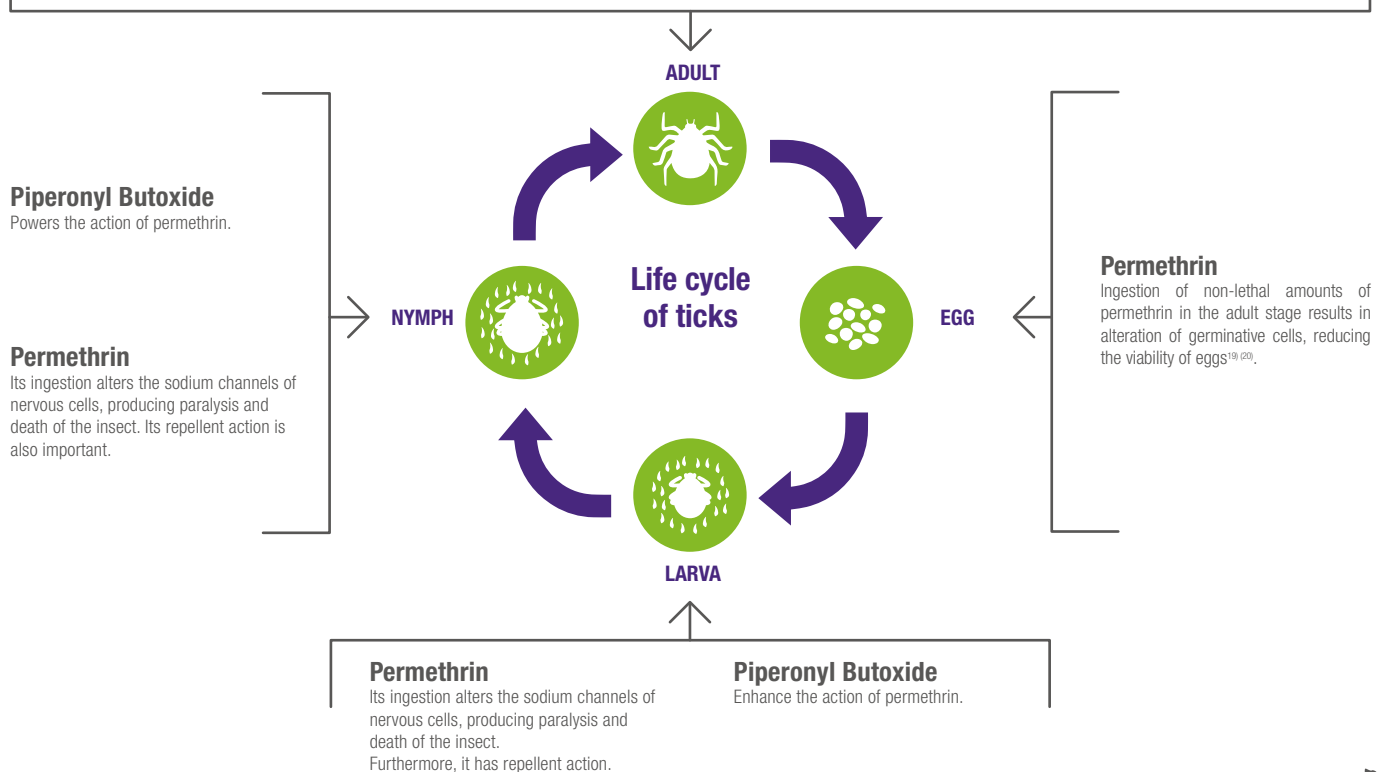
Powers the action of permethrin.

### Fipronil

Lethal action for adult stages of ticks.

### Dinotefuran

Synergistic action with permethrin, expanding its power and action against ticks.



# Double effect against fleas



Fleas are the most common ectoparasites in dogs and they may become a problem in families, not only for the discomfort, but also for causing different clinical signs and diseases.

- Pruritus
- Anemia
- Flea allergy dermatitis (FAD)
- Taeniasis. 

**Fipronex® G5** is effective on *Ctenocephalides felis* and *Ctenocephalides canis*. It repels and kills adult fleas immediately, and controls the various stages of the biological cycle up to 120 days. It has a regulatory action on eggs and larvae, preventing them from developing. Interruption of the cycle prevents the population growth of fleas.

The largest amount of fleas found in the environment is in their immature forms. Only 5% of the fleas are adults and live in dogs.

A flea lays an average of 20 eggs a day, in a cycle that lasts 3 weeks. For that reason it is essential that the antiparasitic offers an integral control.

- Extended environmental control.
- Immediate adulticidal effect.

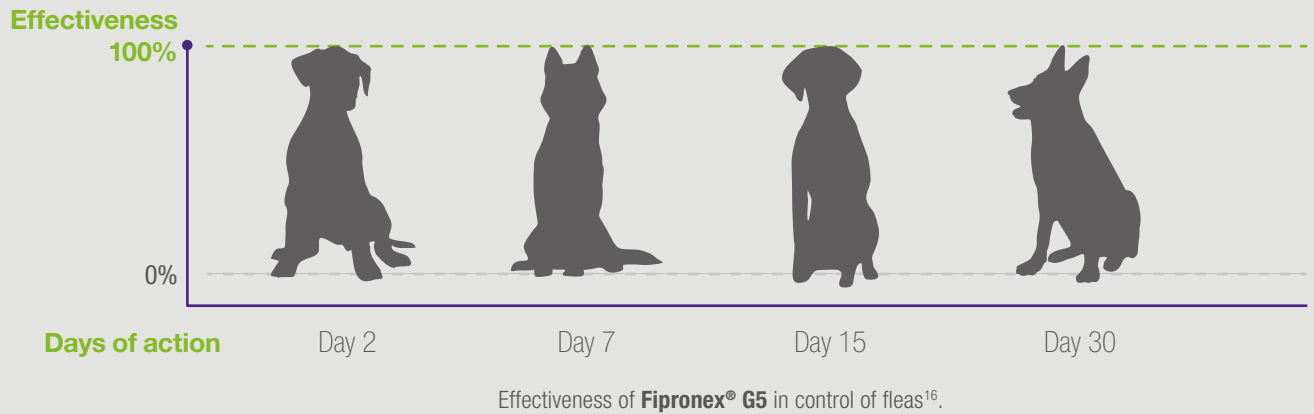
 Zoonotic diseases.



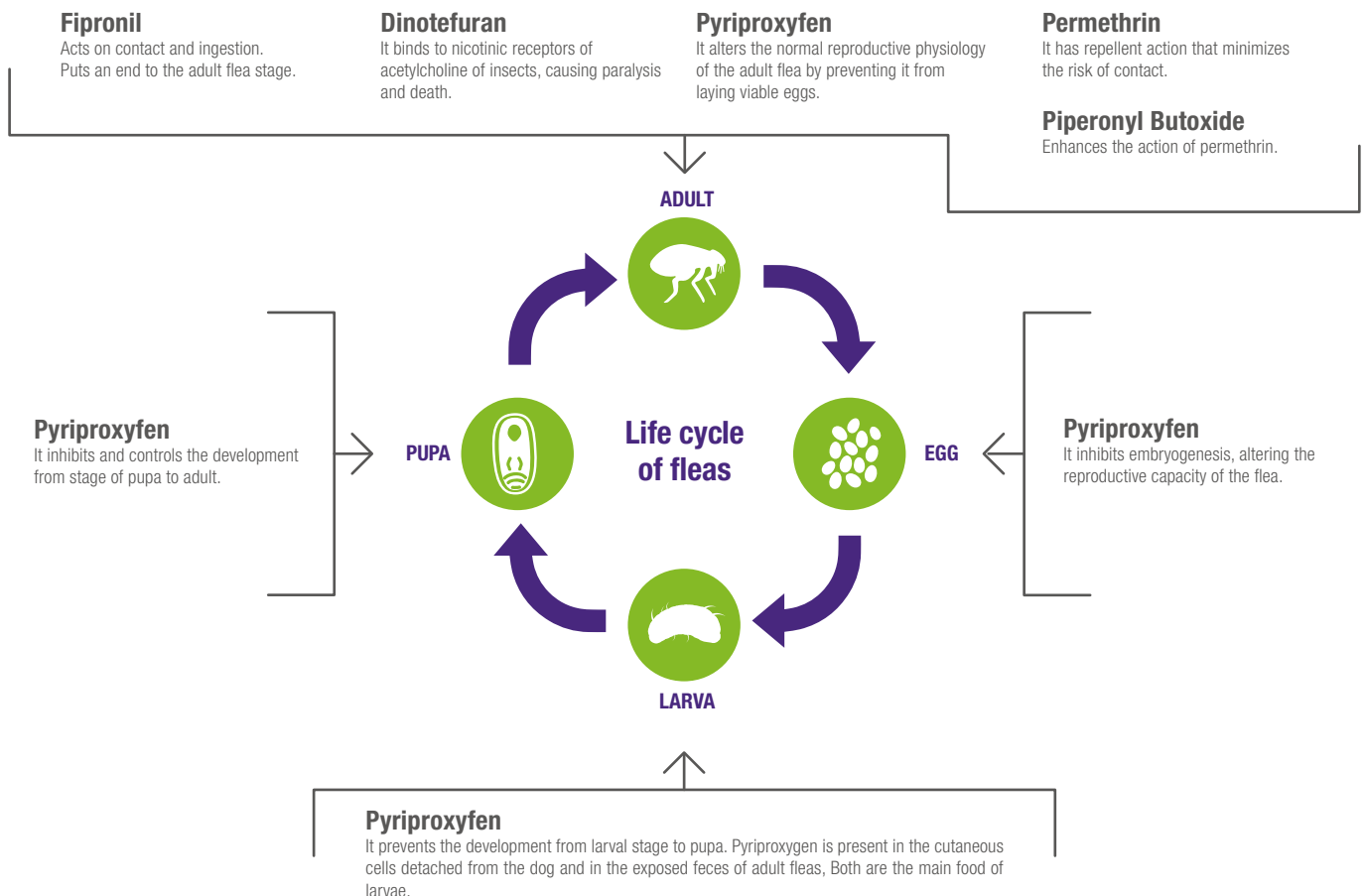
# Dogs without fleas immediately

## Results of the study for Fipronex® G5.

The distribution of **Fipronex® G5** through the animal's organism lasts 12 hours. Its action against fleas begins at 6 minutes, reaching a complete distribution throughout the body in 12 hours after the application. **Fipronex® G5** achieves 100% effectiveness on the second day.



# Action against fleas



# Repellent and insecticide effect on mosquitoes, flies and phlebotomus



The bite of these insects can cause stress and restlessness, allergic reactions and secondary infections among other pathologies, such as:

- Dirofilariasis or heartworm disease. 
- Leishmaniasis. 
- West Nile fever.
- Encephalomyelitis.
- Malaria\*.

- **Fipronex® G5** offers a higher level of protection, it kills by contact and has repellent action against *Aedes aegypti* and *Culex* spp mosquitoes, *Stomoxys calcitrans* and *Musca domestica* flies, phlebotomus like *Phlebotomus perniciosus* and *Lutzomyia peruensis*.

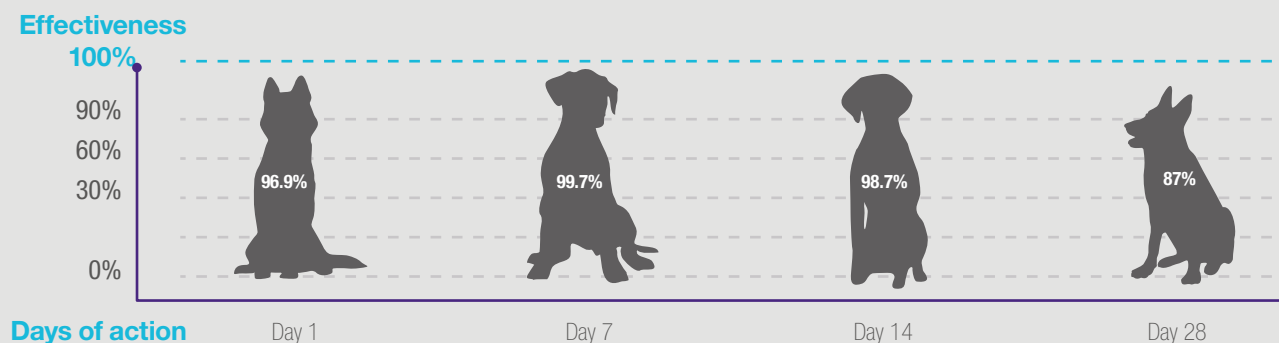
- In addition, it repels mosquitoes, flies and phlebotomus because its ANTI-FEEDING effect, acting from the first day up to 30 days after its application. These insects approach the pet's fur with the intention of biting, but the repellent action of **Fipronex® G5** causes its death without having bitten the pet.

-  Zoonotic diseases.

\* Only in humans

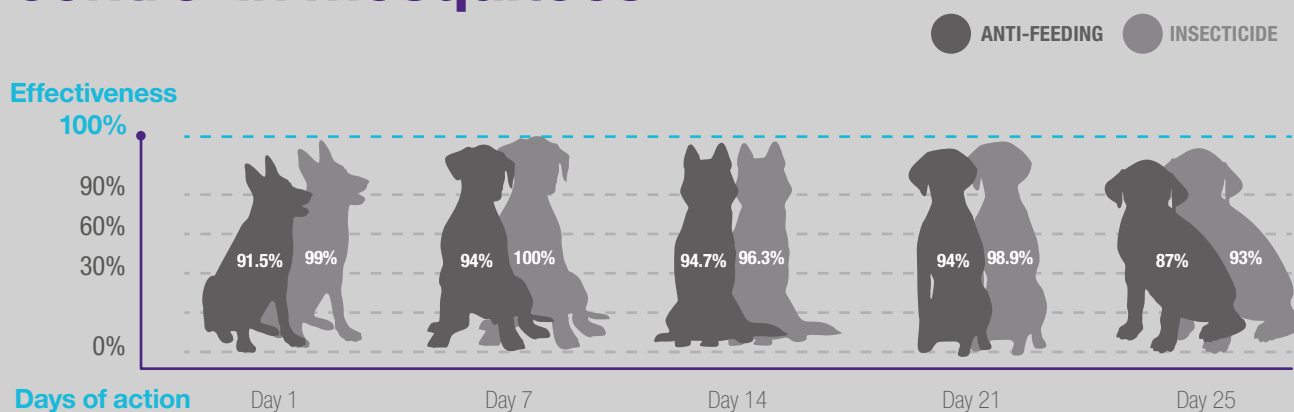


## ANTI-FEEDING effect against phlebotomus for 1 month



Effectiveness in control of *Phlebotomus perniciosus*<sup>17</sup>.

## ANTI-FEEDING and insecticide control in mosquitoes

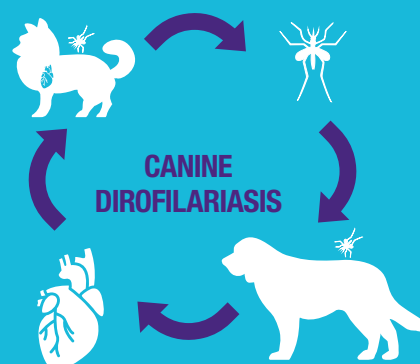


ANTI-FEEDING and INSECTICIDE effects in control of *Aedes aegypti*<sup>17</sup>.

## Prevents canine dirofilariasis

Mosquitoes are vectors of *Dirofilaria immitis*, nematode responsible for canine dirofilariasis or heartworm, a lethal disease, if not diagnosed in time. Since it is considered a zoonotic disease, its control is important.

**Fipronex® G5**, with its repellent action, protects the dog from mosquito bites (*Aedes aegypti* and *Culex*) up to 30 days. In this way it prevents the transmission of dirofilaria, interrupting its development cycle.



# Powerful pediculicide and acaricidal effect



Pediculosis or infestation of lice can produce alopecia, dermatitis and/or secondary infections (bacterial or fungal)

**Fipronex® G5** has action on *Trichodectes canis*, preventing the transmission of internal parasites, including *Dipylidium caninum* , the most common tapeworm in dogs

Mites can cause different types of skin conditions in dogs; one of them is *Otodectes cynotis*, mite infesting the ear and external auditory canal. The condition is characterized by increased production of earwax, otitis accompanied by pruritus that may include secondary infections.

**Fipronex® G5** has an acaricidal effect, fighting against *Otodectes cynotis*, an agent that causes otodectic mange in dogs.



Zoonotic diseases.



# Fipronex® G5

Broad spectrum, rapid action, long lasting effect and practicality



## BROAD SPECTRUM PROTECTION

- Protection against **ALL ECTOPARASITES**.
- Persistent repellent effect against ticks, phlebotomus, mosquitoes and other insects.
- Triple synergistic action against ticks.
- Double flea-killing action for adult and immature stages eggs, larvae and pupae.
- Pediculicide and acaricidal action.
- It prevents the transmission of diseases to the dog and zoonosis.



## RAPID ACTION

- Immediate **KNOCK DOWN** effect, at 17 seconds in spray and 1 minute in drop on.<sup>7</sup>
- **ANTI-FEEDING** effect on fleas, mosquitoes, flies and phlebotomus.
- **HOT FOOT** effect on ticks.



## LONG LASTING EFFECT

- Protection up to 120 days against fleas.<sup>22</sup>
- Protection up to 60 days against ticks.<sup>15</sup>
- Protection for 30 days against mosquitoes and phlebotomus.<sup>17</sup>
- **Fipronex® G5** has an environmental residual effect against immature stages up to 120 days.<sup>22</sup>



## PRACTICALITY

- Rapid absorption and water resistant.
- Can be used in puppies from 7 weeks of age and weighing at least 1.5 kg.



# Easy and fast administration



## Interval between doses

A monthly application is recommended for optimal results in the control and prevention of ectoparasites.

## Pipette: 3 forms of use

For administration, the dog should be standing in a comfortable position. The hair from the back should be separated until the skin is visible do not discharge the contents onto the hair.

Apply the product on dry skin depending on the type of the animal.



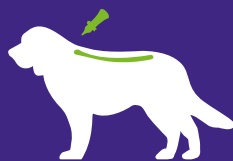
- 1 Apply the product on the wither of the animal.

 In dogs with long fur.



- 2 Apply the product at several points along the spine, starting from the wither to the base of the tail.

 In dogs with short fur.



- 3 Along the back by a continuous line, when the coat allows it.

## Spray



The coat is lifted and a uniform spray is applied against the hair throughout the dog's body.

In all cases, avoid contact with oral cavity or snout and eyes, and avoid the licking on the application site.



# Presentations

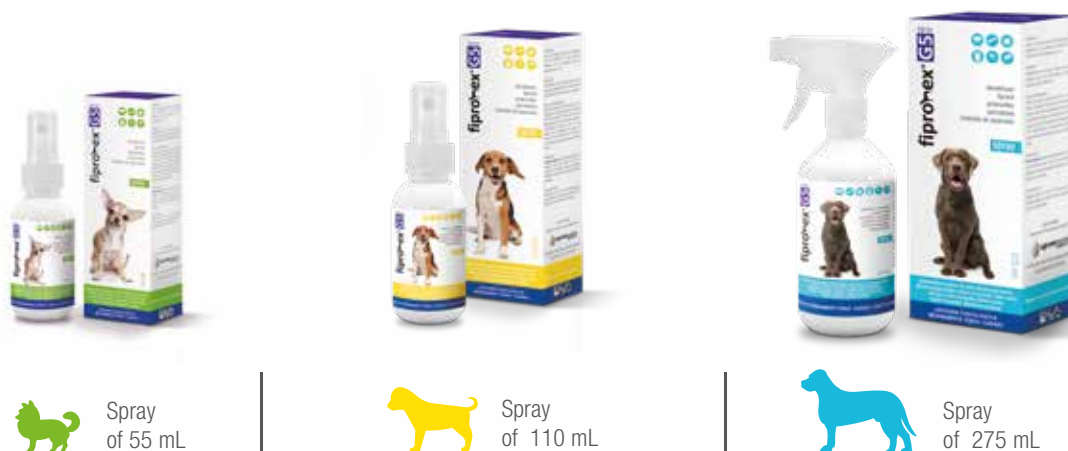
## Fipronex® G5 Drop On

4 sizes



## Fipronex® G5 Spray

3 sizes



**Bottle x 550 mL- Rechargeable**



EXCLUSIVE FOR DOGS.

### Bibliography

1.- Murphy M, Ball CA, Gross S. comparative in vivo adulticidal activity of a topical dinotefuran versus an imidacloprid-based formulation against cat fleas (*Ctenocephalides felis*) on cats. Vet ther. 2009 spring-summer;10(1-2):9-16. 2.- Franc M, Genchi C, Bouhsira E, Warin S, Katsatos V, Baduel L, et al. Efficacy of dinotefuran, permethrin and pyriproxyfen combination spot-on against *Aedes aegypti* mosquitoes on dogs. Vet parasitol. 2012 Oct 26;189(2-4):333-7. 3.- Tiawisrisup S, Nitthithai S, Kaewthamasorn M. Repellent and adulticide efficacy of a combination containing 10% imidacloprid and 50% permethrin against *Aedes aegypti* mosquitoes on dogs. Parasitol res. 2007 Aug;101(3):527-31. 4.- Tan J, Galligan JJ, Hollingworth RM. Agonist actions of neonicotinoids on nicotinic acetylcholine receptors expressed by cockroach neurons. Neurotoxicology. 2007 Jul;28(4):829-42. 5.- Le questel J-Y, Graton J, Cérón-Carrasco JP, Jacquemin D, Planchat A, Thany SH. New insights on the molecular features and electrophysiological properties of dinotefuran, imidacloprid and acetamiprid neonicotinoid insecticides. Bioorg med chem. 2011 Dec 15;19(24):7623-34. 6.- Dégise P, Grünwald B, Gauthier M. The insecticide imidacloprid is a partial agonist of the nicotinic receptor of honeybee kenyon cells. Neurosci lett. 2002 Mar. 15;321(1-2):13-6. 7.- Kurwadkar S, Evans A, DeWinne D, White P, Mitchell F. Modeling photodegradation kinetics of three systemic neonicotinoids-dinotefuran, imidacloprid, and thiamethoxam-in aqueous and soil environment. Environ toxicol chem. 2016 Jul;35(7):1718-26. 8.- Denial of applications to register the new active ingredient dinotefuran contained in the pesticide products safari 20 sg insecticide (EPA Reg. No. 33657-16-59639), Venom 20 sg insecticide (EPA Reg. No. 33657-17-59639) and Venom insecticide (EPA Reg. No. 59639-135). Maureen P. Serafini. 2008. New york state department of environmental conservation, Division of solid and hazardous materials. Pag.12. 9.- Imidacloprid. Risk characterization document for dietary and drinking water exposures. (PDF download available) [internet]. [cited 2017 Feb 2]. Available from: [https://www.researchgate.net/publication/239606845\\_Imidacloprid\\_Risk\\_Characterization\\_Document\\_for\\_Dietary\\_and\\_Drinking\\_Water\\_Exposures](https://www.researchgate.net/publication/239606845_Imidacloprid_Risk_Characterization_Document_for_Dietary_and_Drinking_Water_Exposures). 10.- Corbel V, Duchon S, Zaim M, Hougard J-M. dinotefuran: a potential neonicotinoid insecticide against resistant mosquitoes. J med entomol. 2004 Jul;41(4):712-7. 11.- The who recommended classification of pesticides by hazard and guidelines to classification 2009. Who. 2009. Pag 10, 28. 12.- National pesticide information center - home page [internet]. [cited 2017 Feb 2]. Available from: <http://npic.orst.edu/>. 13.- Human health risk assessment for proposed section 3 registration of dinotefuran spot-on products domestic cats and dog. Barry O'Keefe. Jack Arthur. 2004. United state environmental agency protection agency. 14.- Información perteneciente en los archivos de AGROVET MARKET. 15.- Chávez L; Tang J; Sánchez L. 2015. "Efectividad de la una solución epicutánea a base de fipronil, piriprofen, butóxido de piperonilo, piriprofen, butóxido de piperonilo, piriprofen y dinotefuran (Fipronex® G5 DROP ON) para el control de garrapatas en caninos naturalmente infestados." Estudio No publicado. 16.- Tang J; Sánchez L; Chávez L. 2017. "Efectividad de la una solución epicutánea a base de fipronil, piriprofen, butóxido de piperonilo, piriprofen y dinotefuran (Fipronex® G5 DROP ON). 17.- Bouhsira et al., 2013. Efficacy of dinotefuran, permethrin and of pets joint with EVPC annual meeting 7th-10th april 2013-munich. 18.- Franc, Genchi et al., 2012. Efficacy of dinotefuran, permethrin and pyriproxyfen combination spot-on against *Aedes aegypti* mosquitoes on dogs. Veterinary parasitology. 189(2012):333-33. 19.- Roma GC, Furquim KCS, Bechara GH, Camargo Mathias MI. Cytotoxic effects of permethrin in oocytes of *Rhipicephalus sanguineus* (Acari: ixodidae) fully engorged females: I. Direct or indirect action of the acaricide in germ cells? Exp appl acarol. 2011 Mar;53(3):287-99. 20.- Roma GC, de Souza LP, Brienza PD, Furquim KCS, Bechara GH, Camargo-Mathias MI. Ecdysteroid levels changed by permethrin action in female *Rhipicephalus sanguineus* (Latreille, 1806) (Acari: ixodidae) ticks. Exp parasitol. 2012 Jun;131(2):153-6. 21.- Mutz I. Las infecciones emergentes transmitidas por garrapatas. Ann nestlé [esp]. 2010 Apr. 22.- Chavez A; Casas E. 2004. "Evaluación comparativa de la eficacia y residualidad de una nueva formulación en base a la combinación de fipronil con pyriproxyfen, en el control de pulgas en caninos." Laboratorio de Parasitología. Facultad de Medicina Veterinaria UNMSM.



# fipronex® G5

PROTECTING RELATIONSHIPS



- Dinotefuran
- Fipronil
- Pyriproxyfen
- Permethrin
- Piperonyl butoxide



@fipronex



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Lima - Perú



EXCLUSIVE  
FOR DOGS.



For more information on **Fipronex® G5** and its distribution network, consult [www.fipronex.com](http://www.fipronex.com)

**Fipronex® G5** is a product of **AGROVET MARKET**  
**UNIQUE VETERINARY PRODUCTS**

**petmedica®**