

ANTIPARASITIC DRUGS for DOGS and CATS against FLEAS, TICKS, LICE, MITES, MOSQUITOES and other external parasites

Fleas and ticks are the most common external parasites of **dogs** and **cats**, and consequently most ectoparasitocidal drugs target these parasites. Many of these drugs are also effective against lice, mites, mosquitoes and other less important parasites.

Based on their efficacy and reliability, there are two large groups of commercial products to control these parasites, "**hard**" products and "**soft**" products.

"**Soft**" products are mostly shampoos, soaps, sprays, powders and the like that kill or repel more or less quickly and effectively (70-80%) these parasites immediately after application, but offer **no real protection** against re-infestation (i.e. no residual effect). This may require frequent re-treatments during the parasite's season. These "**soft**" products contain often the same pesticides than the "**hard**" products, but in less sophisticated formulations. They also contain more or less natural insecticides, often with a partial but sufficient efficacy. Registration of these products is often rather easy and most of them have not been thoroughly investigated regarding efficacy and safety. They are sold mostly **over the counter**. And there are thousands of brands and hundreds of manufacturers of these "**soft**" products.

"**Hard**" products are mainly:

Spot-ons (pipettes, squeeze-ons) for **topical** administration

Tablets (pills, chewables, capsules, etc) or suspensions for **oral** administration

Insecticide-impregnated collars

Injectables (very few)

All these "**hard**" products have in common that they are **highly effective** (usually >90%) against the parasites and offer at least about **1 month protection** against re-infestation. In contrast with the soft products most of these products have been **thoroughly investigated** regarding efficacy and safety because registration requirements are rather strict in most countries. For this reason, most of the original products are marketed by large to medium pharmaceutical or agrochemical companies (e.g. BAYER, ELANCO, MERIAL, ZOETIS, etc.). Some of these products need a **prescription** and are sold only in pharmacies or veterinary clinics. Another common feature of these "hard" products is that they are often substantially **more expensive** than the "soft" ones.

Active ingredients used in flea + tick products

Very few active ingredients are effective against all external parasites and all their developmental stages. For these reason, numerous brands contain **mixtures** of active ingredients.

A typical mixture is **adulticide + IGR** (=Insect Growth Regulator). Most insecticides are adulticides, i.e. effective mainly or exclusively against the adult parasites, whereas IGRs are effective against immature stages, and not against the adults. Most common IGRs used in these products are methoprene and pyriproxyfen that are added to ensure that fleas that may survive the adulticide do not reproduce. These IGRs have no effect whatsoever on ticks or mites.

Another typical mixture is **insecticide + tickicide**. Several excellent flea killers (e.g. imidacloprid, indoxacarb, spinosad, etc.) are not effective against ticks. To add tick efficacy they are often mixed with a synthetic pyrethroid (e.g. permethrin, cyphenothrin, etofenprox, etc.) or with amitraz. But all these active ingredients are rather toxic to cats, and as a consequence most of these mixtures are only for dogs. Synthetic pyrethroids are often also effective against mosquitoes.

Flea and tick control in **dogs** and **cats** is the largest single Animal Health market worldwide, and a very profitable one. Consequently, all large and small companies have fought and are still fighting fiercely to get their share of it. This has resulted in numerous **new** active ingredients of different chemical classes fruit of massive investments in R&D by the large laboratories. And it has also resulted in numberless **generic brands**, once patent protection expired for the most successful active ingredients, particularly for fipronil.

This section includes articles on the most popular "**hard**" **products** marketed in most English-speaking countries.

Topical spot-ons

with **fipronil** alone

with **fipronil + IGR**

with **fipronil + tickicide**

with **fipronil + IGR + tickicide**

with **imidacloprid**

with **other active ingredients**

Oral tablets or suspensions

Collars impregnated with insecticides

Injectables

Flea + tick spot-ons

Spot-ons with fipronil alone

Brand	Hosts	Indications	Count.	Active ingredients
Amflee	Do, Ca	Fl, Ti, Li	UK	Fipronil
Clear	Do, Ca	Fl, Ti, Li	UK	Fipronil
Easyspot	Ca	Fl, Ti, Li	USA	Fipronil
Effipro	Do, Ca	Fl, Ti, Li	Int.	Fipronil
Eliminall	Do, Ca	Fl, Ti, Li	UK	Fipronil
Fipracyl	Do, Ca	Fl, Ti, Li	UK	Fipronil
Fipralone	Do, Ca	Fl, Ti, Li	UK	Fipronil
Fipnil	Do, Ca	Ti, Li	UK	Fipronil
Fiprex	Do, Ca	Fl, Ti, Li	UK	Fipronil
FiprocLEAR	Do, Ca	Fl, Ti, Li	UK	Fipronil
Fiproguard	Do, Ca	Fl, Ti, Li	USA	Fipronil
Fiprosport	Do, Ca	Fl, Ti, Li	UK	Fipronil
Fiprotech	Do, Ca	Fl, Ti, Li	UK	Fipronil
First Defence	Do, Ca	Fl, Ti, Li	USA	Fipronil
Flevox	Do, Ca	Fl, Ti, Li	UK	Fipronil
Flick	Do, Ca	Fl, Ti, Li	UK	Fipronil
Frontline Top Spot	Do, Ca	Fl, Ti, Li	Int.	Fipronil
Fyperix	Do, Ca	Fl, Ti, Li	UK	Fipronil
Parastar	Do	Fl, Ti, Li	USA	Fipronil
Pestigon	Do, Ca	Fl, Ti, Li	UK	Fipronil
Petarmor	Do, Ca	Fl, Ti, Li	USA	Fipronil
Pronyl PTC	Do, Ca	Fl, Ti, Li	USA	Fipronil
Ridaflea	Do, Ca	Fl, Ti, Li	UK	Fipronil
ShieldTec	Ca	Fl, Ti, Li	USA	Fipronil
Total Care	Do, Ca	Fl, Ti, Li	AUS	Fipronil
Vet Series	Do, Ca	Fl	AUS	Fipronil
VetGuard	Ca	Fl, Ti, Li	USA	Fipronil
VetUK Flea	Do, Ca	Fl, Ti, Li	UK	Fipronil

Spot-ons with fipronil + IGR

Brand	Hosts	Indications	Count.	Active ingredients
Amflee Combo	Do, Ca	Fl, Ti	UK	Fipronil + methoprene
Ecto Advance Plus	Do, Ca	Fl, Ti, Li	USA	Fipronil + methoprene
Effipro Duo	Do, Ca	Fl, Ti	UK	Fipronil + pyriproxyfen
Fipralone Duo	Do, Ca	Fl, Ti, Li	UK	Fipronil + pyriproxyfen
Fiproguard Plus	Do, Ca	Fl, Ti, Li	USA	Fipronil + methoprene
Fiprotec Combo	Do, Ca	Fl, Ti, Li	UK	Fipronil + methoprene
Frontline Combo	Do, Ca	Fl, Ti, Li	Int.	Fipronil + methoprene
Frontline Plus	Do, Ca	Fl, Ti, Li	Int.	Fipronil + methoprene
Fyperix Combo	Do, Ca	Fl, Ti, Li	UK	Fipronil + methoprene
Petaction Plus	Do, Ca	Fl, Ti, Li	USA	Fipronil + methoprene
Petarmor Plus IGR	Do, Ca	Fl, Ti, Li	USA	Fipronil + novaluron
Pronyl OTC Plus	Do, Ca	Fl, Ti, Li	USA	Fipronil + methoprene
Spectra Sure + IGR	Do, Ca	Fl, Ti	USA	Fipronil + methoprene
ZoGuard Plus	Do, Ca	Fl, Ti, Li	USA	Fipronil + methoprene

Spot-ons with fipronil + tickicide

Brand	Hosts	Indications	Count.	Active ingredients
Effitix	Do	Fl, Ti, Li, Mo	USA	Fipronil + permethrin
Fiproguard Max	Do	Fl, Ti, Li, Mo	USA	Fipronil + cyphenothrin
Fiproguard Max	Ca	Fl, Ti, Li, Mo	USA	Fipronil + etofenprox
Frontect	Do	Fl, Ti, Mo	UK	Fipronil + permethrin
Parastar Plus	Do	Fl, Ti, Li, Mo	USA	Fipronil + cyphenothrin
Petarmor Pro Advance	Do	Fl, Ti, Li, Mo	USA	Fipronil + permethrin
Pronyl OTC Max	Do	Fl, Ti, Li, Mo	USA	Fipronil + cyphenothrin
Pronyl OTC Max	Ca	Fl, Ti, Li, Mo	USA	Fipronil + etofenprox

Spot-ons with fipronil + IGR + tickicide

Spot-ons with imidacloprid

Brand	Hosts	Indications	Count.	Active ingredients
Advantage	Do,Ca	Fl, Li	Int.	Imidacloprid
Advantage II	Do,Ca	Fl, Li	Int.	Imidacloprid + pyriproxyfen
Advantix	Do	Fl, Ti, Li, Mo	Int.	Imidacloprid + permethrin
Adventure Plus	Do, Ca	Fl, Li	USA	Imidacloprid + pyriproxyfen
Clear Double Action	Do, Ca	Fl, Li	UK	Imidacloprid
ClearSpot	Do, Ca	Fl, Li	UK	Imidacloprid
K9 Advantix	Do	Fl, Ti, Li, Mo	Int.	Imidacloprid + permethrin
K9 Advantix II	Do	Fl, Ti, Li, Mo	Int.	Imidacloprid + permethrin + pyriproxyfen

Spot-ons with other active ingredients

Brand	Hosts	Indications	Count.	Active ingredients
4Fleas Protector	Do, Ca	Fl	UK	Pyriproxyfen
Activyl	Do,Ca	Fl	Int.	Indoxacarb
Activyl Tick Plus	Do	Fl, Ti	Int.	Indoxacarb + permethrin
Assurity	Ca	Fl	USA	Spinetoram
Bio Spot for Cats	Ca	Fl, Ti, Mo	USA	Etofenprox + methoprene
Bio Spot for Dogs	Do	Fl, Ti, Mo	USA	Etofenprox + methoprene+ pyriproxyfen
Bravecto Topical Sol.	DoCa	Fl, Ti	Int.	Fluralaner
Catego	Ca	Fl, Ti	USA	Dinotefuran + fipronil + pyriproxyfen
Cheristin	Ca	Fl	USA	Spinetoram
Exspot	Do	Fl, Ti, Li, Mo	Int.	Permethrin
Freedom	Do	Fl, Ti, Li, Mo	USA	Permethrin
Liberty 50	Do	Fl, Ti, Li, Mo	USA	Permethrin + pyriproxyfen
Ovitrol X-Tend	Ca	Fl, Ti, Mo	USA	Etofenprox + methoprene
Ovitrol X-Tend	Do	Fl, Ti, Mo	USA	Etofenprox + methoprene
Prac-Tic	Do	Fl, Ti	UK	Pyriprole
ProTicall	Do	Fl, Ti, Li, Mo	Int.	Permethrin
ShieldTec Plus	Do	Fl, Ti, Li, Mo	USA	Permethrin + pyriproxyfen
Spot-on Flea Control	Ca	Fl	AUS	Pyriproxyfen

Brand	Hosts	Indications	Count.	Active ingredients
Triforce Canine	Do	Fl, Ti, Mo	USA	Cyphenothrin + pyriproxyfen
Triforce Feline	Ca	Fl, Ti, Mo	USA	Etofenprox + pyriproxyfen
Ultraguard	Do	Fl, Ti, Mo	USA	Etofenprox
Ultraguard Onespot	Ca	Fl	USA	Methoprene
Ultraguard Pro	Ca	Fl, Ti, Mo	USA	Etofenprox + methoprene
Ultraguard Pro	Do	Fl, Ti, Mo	USA	Etofenprox + methoprene+ pyriproxyfen
Vectra	Do,Ca	Fl	Int.	Dinotefuran + pyriproxyfen
Vectra 3D	Do	Fl, Ti, Li, Mo	Int.	Dinotefuran + permethrin + pyriproxyfen
VetGuard Plus	Do	Fl, Ti, Li, Mo	USA	Permethrin + pyriproxyfen
Zodiac for Cats	Ca	Fl	USA	Methoprene
Zodiac for Dogs	Do	Fl, Ti, Mo	USA	Permethrin + methoprene

Flea + Tick tablets and oral suspensions

Brand	Hosts	Indications	Count.	Active ingredients
4Fleas	Do, Ca	Fl	UK	Nitenpyram
Bravecto	Do	Fl, Ti	Int.	Fluralaner
Capstar	Do, Ca	Fl	Int.	Nitenpyram
Clear Flea	Do, Ca	Fl	UK	Nitenpyram
Comfortis	Do, Ca	Fl, Ti, Li	Int.	Spinosad
Nexgard	Do	Fl, Ti	Int.	Afoxolaner
Palatable Flea Control	Do, Ca	Fl	AUS	Pyriproxyfen
Program Tablets	Do, Ca	Fl	Int.	Lufenuron
Program Oral Susp.	Ca	Fl	Int.	Lufenuron
Sentry Capguard	Do, Ca	Fl	USA	Nitenpyram
Simparica	Do	Fl, Ti, Mi	Int.	Sarolaner

Flea + Tick Collars

Brand	Hosts	Indications	Count.	Active ingredients
Adams Plus(large)	Do	FI, Ti	USA	Methoprene + tetrachlorvinphos
Adams Plus (small)	Do	FI, Ti	USA	Propoxur + methoprene
Beaphar Flea & Tick	Do, Ca	FI, Ti	UK	Dimpylate=diazinon
Bolfo	Do,Ca	FI, Ti	Int.	Propoxur
Breakaway Plus	Ca	FI, Ti	USA	Propoxur + methoprene
Clear Collar	Do, Ca	FI, Ti	UK	Dimpylate=diazinon
Kiltix	Do,Ca	FI, Ti	Int.	Propoxur + flumethrin
Powerband	Do	FI, Ti	USA	Propoxur + methoprene
Scalibor	Do	FI, Ti, Mo	Int.	Deltamethrin
Salvo	Do	FI, Ti	USA	Deltamethrin
Seresto	Do,Ca	FI, Ti, Li, Mi	Int.	Imidacloprid + flumethrin
Ultrashield	Do	FI, Ti	USA	Deltamethrin
