

**In order to solve a flea infestation, you must understand the flea cycle.**

**Less than 5% reside on your pet; the rest are in different stages spread throughout your home.**

	eggs: 50%  an adult flea can lay 50 eggs a day	larvae: 35% 	pupae: 10%  hard shell that pesticides do not penetrate	adults: 5%  	"red dirt"   adult feces; larval food
<b>Mechanical / Cleaning Controls</b> (Effective throughout the flea cycle, minimizing the environmental reservoirs lurking throughout the home.)					
Thoroughly vacuum floors, carpets, rugs, and under furniture. If infested, vacuum frequently; the vibration encourages cocooning adults to emerge from their protective pupa shell.	✓	NOTE: If topicals or collars are used in the home, then these otherwise non-toxic cleaning efforts are expected to transport the active ingredient around the home and wash it into the sanitary sewer.	✓	✓	✓
Vacuum upholstery and under cushions.	✓		✓	✓	✓
Proper disposal of vacuum waste to prevent it from becoming a source of reinfestation.	✓		✓	✓	✓
Wash pet bedding. Wash other areas pets have access to, such as human bedding.	✓		✓	✓	✓
Improve effectiveness of vacuuming and dusting by reducing clutter and/or replacing carpets with hard floors.	✓		✓	✓	✓
Wash pet.				✓	✓
Flea comb and bowl of soapy water (also helps define the infestation).				✓	✓
Flea trap (also helps define the infestation).				✓	
<b>ORAL MEDICATIONS FOR YOUR PET</b> (To avoid impact to POTW, do NOT flush pet waste. Path to storm drains limited to pet waste on impervious surfaces.)					
Afoxolaner				✓	
Fluralaner				✓	
Lufenuron	✓	✓			
Nitenpyram				only 24 hours	
Sarolaner				✓	
Spinosad				✓	
<b>SPOT TREATMENTS</b> (Spot treatments have been found to wash off with shampooing, wipe off onto gloves and shirts and transport around the home creating pathways to humans and sanitary sewer. If wipe off in yards/grasses, may also have pathway to pollinators.)					
Etofenprox/Cyphenothrin and pyriproxyfen	✓	✓		✓	
Fipronil (with or without cyphenothrin)				✓	
Fipronil and S-methoprene (+/- pyriproxyfen)	✓	✓		✓	
Imidacloprid	some activity	some activity		✓	
Imidocloprid and pyriproxyfen	✓	✓		✓	
Indoxacarb	some activity	some activity		✓	
Indoxacarb and permethrin	some activity	some activity		✓	
Selamectin	some activity	some activity		✓	
Spinetoram				✓	
<b>COLLARS</b> (Collars have been found to wipe off onto gloves and shirts and found around the home so have potential pathways to humans and to sewer. If wipe off in yards/grasses, may also have pathway to pollinators. Collars appear to have a lower transport rate to the skin and may have higher percent of active ingredient accumulating on hair, dander, and surrounding environment. Pet may be exposed to high initial dose.)					
Deltamethrin				✓	
Imidacloprid + flumethrin				✓	
S-Methoprene + tetrachlorvinphos (TCVP)	✓	✓		✓	
Tetrachlorvinphos (TCVP)				✓	
<b>Notes:</b> EPA is currently (2016) evaluating the human exposure to TCVP due to flea control collars. DPR is currently (2016) evaluating fipronil due to potential human health concerns. Table last updated October 3, 2016			<b>Legend:</b> No known hazard to water quality (WQ), human health or pet: <span style="display: inline-block; width: 15px; height: 15px; background-color: #008000; border: 1px solid black;"></span> Likely low hazard to WQ, human health or pet: <span style="display: inline-block; width: 15px; height: 15px; background-color: #90EE90; border: 1px solid black;"></span> Uncertain hazard to WQ, human health or pet: <span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFF00; border: 1px solid black;"></span> Hazard to WQ and/or human health: <span style="display: inline-block; width: 15px; height: 15px; background-color: #FF0000; border: 1px solid black;"></span>		

	Active Ingredient(s)	Example Product Names <i>(Necessarily incomplete. When patents expire, numerous brands possible. Also a manufacturer may register multiple brand names with same active ingredients.)</i>
Orals	Afoxolaner	Nexgard (Merial)
	Fluralaner	Bravecto (Merck)
	Lufenuron	Program (Novartis) and Sentinel (though that also includes a heartworm pharma)
	Nitenpyram	Capstar (Novartis), Capguard (Sentry)
	Sarolaner	Simparica (Zoetis, a subsidiary of Pfizer)
	Spinosad	Comfortis and Trifexis (Elanco)
Spots	Cyphenothrin and pyriproxyfen (Nylar)	Sentry Pro XFT, Triforce for dogs
	Etofenprox and pyriproxyfen (Nylar)	Triforce for cats
	Fipronil	Frontline, PetArmor, Fiproguard (Sentry), EasySpot, Certifect, Spectra Sure, Effipro (Virbac), Flea3X, Sergeant's Pronyl, Hartz First Defense, Barricade, Fortress, Cat MD, Dog MD (and others). <i>(Frontline patent expired around 2012)</i>
	Fipronil and cyphenothrin	Fiproguard Max, Martin's Prefurred Plus
	Fipronil and S-methoprene	Frontline Plus, Fiproguard Plus (Sentry)
	Fipronil and S-methoprene and pyriproxyfen	Frontline Gold (new in 2016)
	Imidacloprid	Advantage (Bayer)
	Imidocloprid and pyriproxyfen (Nylar)	Advantage II (Bayer) and Advecta II (Bayer), K9 Advantix (Bayer)
	Indoxacarb	Activyl (Merck)
	Indoxacarb and permethrin	Activyl Tick Plus for Dogs (Merck)
	Selamectin	Revolution (Zoetis, a subsidiary of Pfizer)
	Spinetoram	Cheristin (formerly Assurity) (Elanco)
Collars	Deltamethrin	Salvo, SCALIBOR, BandGuard, Sentry Long Lasting
	Imidacloprid and flumethrin	Seresto (Bayer)
	S-Methoprene + tetrachlorvinphos (TCVP)	Hartz Ultraguard Plus, Biospot Active Care (Wellmark/ Farnam)
	Tetrachlorvinphos (TCVP)	Hartz Ultraguard, Zodiac (Wellmark), and others