Honeybee Colony Collapse Disorder

Bee Mortality Update: Neonicotinoids, Related Compounds and Metabolites

Neonicotinoid pesticides have been linked to Colony Collapse Disorder (CCD) and directly to bee fatalities. Researchers now believe that neonicotinoids can also produce long-term adverse effects on the quality and efficiency of bee pollination.

Included in the bee mortality studies is fipronil (a pyrazole class pesticide), suspected of contributing to CCD.

In April 2018 the European Union (EU) extended the 2013 ban of three neonicotinoids (clothianidin, imidacloprid and thiamethoxam) to all field crops. Additionally, the U.S. EPA is proceeding with risk assessments for five neonicotinoids scheduled for completion in 2019.

AccuStandard has assembled a comprehensive product line of neonicotinoids, fipronil, and related pesticides as well as several key metabolites to assist analysts in their on-going research.

Neonicotinoids

Compound	CAS	NEAT Cat. No.	Unit	SOLUTION Cat. No.	100 µg/mL Solvent	Unit
Acetamiprid	135410-20-7	P-820N	10 mg	P-820S-CN	AcCN	1 mL
6-Chloropyridine-3-carboxylic acid	5326-23-8	P-1267N	10 mg	P-1267S	MeOH	1 mL
Clothianidin	210880-92-5	P-947N	10 mg	P-947S	MeOH	1 mL
n-Desmethylthiamethoxam	171103-04-1	-----	--------	P-1266S	MeOH	1 mL
Dinotefuran	165252-70-0	-----	--------	P-986S-CN	AcCN	1 mL
Furathiocarb	65907-30-4	P-569N	10 mg	P-569S	MeOH	1 mL
6-Hydroxypyridine-3-carboxylic acid	5006-66-6	P-1226N	10 mg	P-1226S	MeOH	1 mL
Imidacloprid	138261-41-3	P-596N	10 mg	P-596S	MeOH	1 mL
2-Imidazolidone	120-93-4	P-1224N	10 mg	P-1224S	MeOH	1 mL
Nitenpyram	120738-89-8	P-858N	10 mg	P-858S-CN	AcCN	1 mL
Sulfoxaflor	946578-00-3	P-1133N	10 mg	P-1133S	MeOH	1 mL
Thiacloprid	111988-49-9	P-838N	10 mg	P-838S-CN	AcCN	1 mL
Thiacloprid-amide	676228-91-4	P-1223N	10 mg	P-1223S	MeOH	1 mL
Thiamethoxam	153719-23-4	P-866N	10 mg	P-866S-CN	AcCN	1 mL

Fipronils

Fipronil	120068-37-3	P-738N	10 mg	P-738S ❄	MeOH	1 mL
				P-738S-A ❄	Acetone	1 mL
Fipronil desulfinyl	205650-65-3	-----	--------	P-782S-A ❄	Acetone	1 mL
Fipronil sulfide	120067-83-6	P-781N-5MG	5 mg	P-781S-A ❄	Acetone	1 mL
Fipronil sulfone	120068-36-2	-----	--------	P-780S-A	Acetone	1 mL

Fipronil and Metabolite Kit P-FIP-MET-KIT ❄ **4 x 1 mL**
P-738S-A, P-782S-A, P-781S-A, P-780S-A

❄ ColdPAK required to maintain integrity of product.

Technical Note

Fipronil is in the phenyl pyrazole class of pesticides. It is a broad-spectrum insecticide used in many different applications. It is used in many commercial topical flea and tick treatments for cats and dogs. Fipronil is used in these types of applications because it is not readily absorbed through the skin, and has a comparatively low toxicity if ingested.

Fipronil produces three notable metabolites: fipronil desulfinyl, fipronil sulfide and fipronil sulfone. These metabolites form under different conditions and can be more toxic and environmentally persistent.