

Cheat Sheet for Spider Mite Spraying in Michigan field crops

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information current as of August 2016

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Active (group)	RUP	Application Notes	Formulation(s)	corn*	dry bean	soybean	sugarbeet
abamectin (avermectin)	yes	For best results, apply when mites are first observed. "To avoid illegal residues, must be mixed with a non-ionic activator type wetting, spreading, &/or penetrating spray adjuvant" approved for the crop.	Agri-Mek SC		1.75-3.5 oz (7 days)	1.75-3.5 oz (28 days)	
bifenazate	no	Toxic to bees. Provides quick knockdown & long residual control. Relatively non-toxic to beneficials.	Acramite 4SC		16-24 oz PHI - 7 days		
bifenthrin (pyrethroid)	yes	Highly toxic to bees; do not apply when bees are visiting treated area. Apply when colonies first form prior to leaf damage, before mites disperse in canopy. Under heat/ drought stress, a higher rate or addition of 1 pint/ ac dimethoate can improve control.	Brigade 2EC (= Bifen2Ag Gold, Bifenthrin 2EC, Bifen-ture EC, Fanfare, Sniper, Tailgunner, Tundra EC)	5.12-6.4 oz (30 days)	5.12-6.4 oz (14 days)	5.12-6.4 oz (18 days)	
bifenthrin + cypermethrin (pyrethroids)	yes	Highly toxic to bees; do not apply when bees are visiting treated area.	Hero Hero EW	10.3 oz (Hero) 11.2 oz (Hero EW) (30 days grain, 60 days forage)	10.3 oz (Hero) 11.2 oz (Hero EW) (21 days)	10.3 oz (Hero) 11.2 oz (Hero EW) (21 days)	
bifenthrin + imidacloprid (pyrethroid + neonic)	yes	Highly toxic to bees; do not apply when bees are visiting treated area.	Skyraider		5.12-5.6 oz (14 days)	5.12-6.0 oz (21 days)	
bifenthrin + chlorpyrifos (pyrethroid+OP)	yes	Highly toxic to bees. Apply when colonies first form prior to leaf damage, before mites disperse in canopy. Higher rate may be needed under drought conditions.	Match-UP Tundra Supreme	13.5-16.8 oz (30 days)	Match-Up only 6.6-16.4 oz (14 days)	13.5-16.4 oz (28 days)	
chlorpyrifos (OP)	yes	If large number of eggs are present at time of spray scout treated area in 3-5 days. If new nymphs are present, may need a follow-up application of a non-chlorpyrifos mite product. For sugarbeet, do not tank mix w/ Quadris or Headline fungicides.	Lorsban 4E & Advanced (= Govern 4E, Nufos 4E, Hatchet, Vulcan, Warhawk, Whirl-wind, Yuma 4E,)			½- 1 pint (28 days)	1 pint (30 days)
chlorpyrifos + cyhalothrin (OP+pyrethroid)	yes	Highly toxic to bees; do not apply when bees are visiting treated area.	Cobalt Cobalt Advanced Bolton			13-26 OZ (Cobalt) 11-26 OZ (Advan) 9-18 OZ (Bolton) (30 days)	
dimethoate (OP)	no	Highly toxic to bees; bee kill complaints have occurred in MI involving this chemistry. "Do not apply of bee are visiting area to be treated" (crop or weeds)	Dimate 4E Dimethoate 400, 4E, or 4EC	0.66 -1 pint 28 days grain, 14 days forage)	½-1 pint (0 days)	1 pint (21 days)	

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				corn*	dry bean	soybean	sugarbeet
etoxazole (mite growth inhibitor)	no	Mite growth inhibitor. Kills mite eggs & juvenile, not adults. Apply early as populations build. Does not disrupt beneficial insects.	Zeal WDG Zeal SC	1-3 oz (WDG) 2-6 oz (SC) (21 days)		2-6 oz (SC) (do not apply after R5 stage)	
hexythiazox (mite growth inhibitor)	no	Mite growth inhibitor. Kills mite eggs & juvenile, not adults, but exposed females produce nonviable eggs. Does not disrupt beneficial insects.	Onager	10-24 oz (30 days)			
naled (OP)	yes	Highly toxic to bees. Short residual. Do not apply when air temps are >90°F (phytotoxicity can occur)	Dibrom 8E		1 pint (1 day)		1 pint (2 days)
propargite (ATP inhibitor)	yes	' Danger ' signal word. Corrosive (skin irritation, irreversible eye damage). Best results obtained by treating early before mite damage occurs. Must be applied to dry leaves. 13 day reentry interval.	Comite	32-48 oz (30 days)			
spiromesifen (lipid biosynthesis inhibitor)	no	Active on all mite stages, but juveniles more susceptible than adults. Apply as population begins to build. Adjuvant may improve coverage & control.	Oberon 2SC	5.7-16 oz (30 days grain, 5 silage/forage)			

*For a mite rating scale for corn, see page 16 in the Texas A&M Agrilife Corn Extension bulletin at <http://agrilife.org/lubbock/files/2016/02/ENTO-049.pdf>

READ THESE TIPS BEFORE SPRAYING

- ✓ **Coverage is important.** Use the highest gpa practical. A ground application is usually better than air.
- ✓ **Read the label for the spectrum of activity.** Most insecticides kill mites, not eggs, so newly-hatched mites can recolonize quickly if there is no residual. In contrast, mite growth regulators kill eggs & nymphs, but not adults - they act slowly to reduce the population.
- ✓ **To delay resistance,** rotate modes of action. Never apply the same or a similar product twice in a season.
- ✓ **Most conventional insecticides are highly toxic to honey bees.** To avoid a bee kill incident / investigation by MDARD:
 - Check labels for specific new warnings and guidelines about application to crops in bloom.
 - Know the neighborhood - Who are the local beekeepers? Are there any bee yards or bee-pollinated crops nearby?
 - Talk to beekeepers in the area; they may be able to cover or move hives if they know about spraying ahead of time.
 - Check the Drift Watch web site for locations of apiaries in the state (<https://mi.driftwatch.org/map>).
 - Spray in the evening instead of during the day to avoid exposing foraging bees.
- ✓ Note that **preharvest intervals** range from 0 – 60 days depending on the crop x insecticide