Rainfastness rating chart: General characteristics for insecticide chemical classes								
Insecticide class	**Rainfastness ≤ 0.5 inch**		**Rainfastness ≤ 1.0 inch**		**Rainfastness ≤ 2.0 inches**		**Persistence (residual on plant)**	**Penetration characteristics**
	Fruit	**Leaf**	**Fruit**	**Leaf**	**Fruit**	**Leaf**		
Carbamates (1A) *Lannate Toss-N-Go*	M	M / H	M	M	L	L	Short	Cuticle penetration
Organophosphates (1B) *Imidan 70-WP, Malathion 85 E*	L	M	L	M	L	L	Medium-Long	Surface
Pyrethroids (3A) *Decis 5 EC, Mako, Matador 120 EC, Perm-Up EC, Pounce 384 EC, Silencer 120 EC, Up-Cyde 2.5 EC*	M / H	M / H	M	M	L	L	Short	Cuticle penetration
Neonicotinoids (4) *Actara 25 WG, Admire 240 F, Alias 240 SC, Assail 70 WP, Calypso 480 SC, Clutch 50 WDG*	M, S	H, S	L, S	L, S	L, S	L, S	Medium	Translaminar*****, acropetal
Spinosyns (5) *Delegate, Entrust, Success, TwinGuard*	H	H	H	M	M	L	Short-Medium	Translaminar
Avermectins (6) *Agri-Mek SC*	M, S	H, S	L, S	M, S	L	L	Medium	Translaminar
IGRs (15, 18) *Rimon 10 EC, Confirm 240 F, Intrepid 240 F*	M	M / H	M	M	L	L	Medium-Long	Translaminar
Diamides (28) *Altacor, Exirel*	H	H	H	M	M	L	Medium-Long	Translaminar

H = Highly rainfast ≤ 30% residue wash-off; **M** = Moderately rainfast ≤ 50% residue wash-off; **L** = Low rainfast ≤ 70% residue wash-off; **S** = Systemic residues remain within plant tissue

***** = Translaminar materials require 24 hours of drying prior to a rain to fully move into the developing fruit and leaf cuticle.

Adapted from John Wise, Michigan State University (2017)