Apple Sprays for non-commercial growers/gardeners

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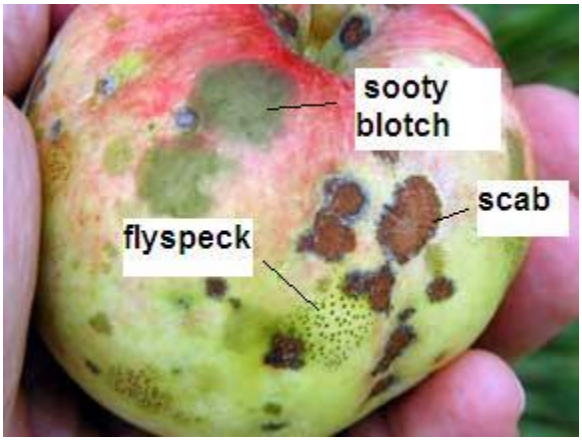
General recommendation for apples is to spray with a fungicide to control apple scab. Begin those sprays as soon as apple buds are showing green tissue in the spring. For a thorough protection, you need to keep reapplying the fungicide every 7 to 10 days to cover up the new leaves and flowers as they emerge. If you get a heavy rain you need to reapply again. A bare minimum spray program for scab would be to apply fungicides at green tip, pink, bloom, petal fall, and 1 week after petal fall.

Remember that captan (and other sulfur-containing fungicides) is not compatible 2 weeks either side of an oil application.

Partial list of materials for backyard disease control for apples (check label)

Material	Active ingredient	Diseases managed	comments
Sulforix	Lime-sulfur	scab	Lighter version of lime sulfur with surfactant. Not compatible with oil
Copper	copper	scab	Short spray cover duration, can cause surface phytotoxicity
Captan	captan	scab, sooty blotch & fly speck	Not compatible with oil
Mancozeb	mancozeb	scab, sooty blotch & fly speck	Long days to harvest restriction
Sulfur	sulfur	scab, powdery mildew	short duration, not compatible with oil
Immunox	myclobutanil	scab*, powdery mildew	may be prone to pathogen resistance problems



Many of the fruit tree spray mixes sold in garden stores and large general merchandisers contain both an insecticide and a fungicide.

Figure 1 Apple maggot larvae and damage to apple fruit

Figure 4. Leafroller or green fruitworm feeding damage

The older method for insect control was to spray with Sevin, malathion, or Imidan. Newer classes of insecticide include pyrethroids, neonicotinoids, kaolin clay. Check pesticide products to see if they are labeled for apples and the insects controlled.

Insecticide coverage is most important starting when fruit are greater than 1 inch in diameter and attractive to insects. A general spray program starting at this time with reapplication every 10 to 14 days should eliminate much of the insect problems. The management strategy can be fine-tuned by identifying the insect problem. A summary of insect damage is given here to help with this.

Plum curculio over-winter as adults in the soil, litter, ground cover trash in orchards and surrounding areas. When evening temperatures exceed 60 F, the weevils move into orchards and begin to feed as leaves begin to emerge. Their feeding activity expands to blossoms, stems and fruit as they become available.

The most significant insect pest on apples in most orchards is **codling moth** which is a major apple pest in Michigan and has 2 generations a year in mid Michigan. The first generation attacks the fruit when it is about an inch in diameter in early June to early July and the second from early August to late August.

Figure 3. Codling moth larvae inside pear

Another group of insect pests are the leafrollers and fruit worms. These feed on foliage and on fruit. Unlike codling moth, this group tends to be surface feeders, often webbing a leaf onto the apple, or webbing a leaf edge for protection.

Figure 2 Egg laying scars caused by the plum curculio.

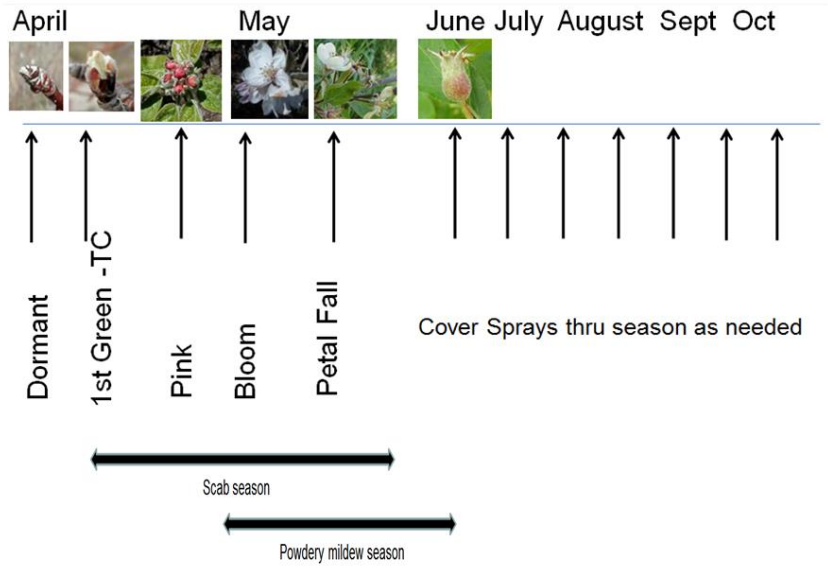
Apple maggot is a pest of apples and other fruit in some orchard sites, usually sandy areas. The adult fly generally emerges in July, lay eggs in fruit, the hatched larvae feed within fruits, causing flesh to brown and rot. Picking up fallen fruits daily starting in July and sealing them in a plastic bag helps to reduce future infestations. If using an insecticide, apply mid July and again every 10-14 days until harvest.

Tarnished plant bug causes uniform indentations tapering to a pinhole sized. Tarnished plant bug are active in the first month after bloom. The insect builds up on flowering broadleaf weeds and move over to apple fruit where they can cause damage.

A relatively new pest is the **brown marmorated stink bug**. The piercing mouthpart can cause 1/3 to ½ sunken areas on the surface, with flesh under the apple skin to become discolored, disorganized and tough. The insect is very mobile.

Figure 5. Brown marmorated stink bug adult

Figure 6. Tarnished plant bug damage to apple



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