Fruit Development Stages

All tree and small fruit have several distinct growth stages as fruit matures. Identifying growth stages is important because recommendations for pesticide applications and cultivation practices are frequently linked to specific growth stages. The next few pages show the common growth stages for the fruit crops described in this publication.

TREE FRUIT

Apple

Dormant

Silver tip

Green tip

Half-inch green

Tight cluster

Pink

Bloom

Petal fall

Fruit set

Apple Spray Guide

Table 7. Apple Spray Guide

Time to Spray	Pest(s)	Pesticide	Remarks
Delayed dormant (when leaf tips start to protrude from buds)	scales, aphids, mites	superior oil	If these pests were not a problem last year, omit this spray.
	fire blight	copper	Cease application before half-inch green or fruit will russet. When using oil, do not apply copper or captan within two weeks of the oil application.
Half-inch green (1/2 inch of green tissue has grown)	apple scab	captan	
	both insects and disease	MPFS[1]	Insects are not usually a problem before petal fall. MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed.
Tight to open cluster (when fruit buds are visible)	apple scab	captan *or* myclobutanil [2]	Myclobutanil (Immunox®) is best for early season scab control and supplies rust control. Captan alone is not effective against rust.
	both insects and disease	MPFS[1]	MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed.
Pink (when blooms are showing pink but not yet open)	apple scab	captan *or* myclobutanil[2]	Myclobutanil (Immunox®) is preferred material if cedar rust or powdery mildew have been a problem.
	both insects and disease	MPFS[1]	MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed.
Bloom (when 50% of blossoms are open)	apple scab	captan *or* myclobutanil[2]	Do not use MPFS during bloom.
	fire blight	streptomycin	If fire blight has been a problem, use streptomycin according to label directions (see Purdue Extension purblication BP-30-W, *Fruit Diseases: Fire Blight on Fruit Trees in the Home Orchard*).
Petal fall (when 75% of petals have fallen)	plum curculio	acetamiprid	Pesticide application at this time is very important for plum curculio control. To prevent fruit drop, do not use carbaryl (Sevin®) within 30 days after full bloom. Picking up and disposing of fallen fruit will reduce problems with plum curculio, other insects, and many plant diseases.
	apple scab, sooty blotch, fly speck, rust	captan *or* thiophanate-methyl *or* myclobutanil[2]	Myclobutanil (Immunox®) does not protect against fly speck or sooty blotch, but is very good against rust. Thiophanate-methyl is sold under several trade names, including Thiomyl Systemic Fungicide 3336®.
	fire blight	streptomycin	If fire blight has been a problem, use streptomycin according to label directions (see Purdue Extension purblication BP-30-W, *Fruit Diseases: Fire Blight on Fruit Trees in the Home Orchard*).
	both insects and disease	MPFS[1]	MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed.
First cover (7-10 days after petal fall)	plum curculio, codling moth	captan plus spinosad[3] *or* acetamiprid	Important spray for codling moth control during first cover. To prevent fruit drop, do not use carbaryl (Sevin®) within 30 days after full bloom.
	apple scab, sooty blotch, fly speck	thiophanate –methyl plus captan *or* myclobutanil[2]	Will provide the best management for sooty blotch/fly speck. Myclobutanil (Immunox®) does not protect against fly speck or sooty blotch.
	both insects and disease	MPFS[1]	MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed.
Second cover (7-10 days after first cover)	plum curculio, codling moth, apple maggot	same as first cover spray	Apple maggot flies begin to emerge about mid-June. Use red sticky balls to tell when maggot flies are present.
	apple scab, sooty blotch, fly speck	same as first cover spray	
	both insects and disease	same as first cover spray	
Additional cover sprays (apply at two week intervals until harvest restriction date)	codling moth, apple maggot, Japanese beetle	carbaryl (Sevin®) *or* spinosad[3]	Read container labels for number of days between final spray and harvest. carbaryl (Sevin®) provides Japanese beetle control.
	apple scab, fruit rots, sooty blotch, fly speck	captan *or* thiophanate –methyl	Read container labels for number of days between final spray and harvest.
	both insects and disease	MPFS[1]	MPFS is designed to control insect and disease problems. Use when both are present. Pesticides should only be used when needed.
End of season	apple scab, sooty blotch, fly speck, rots	none	Rake and dispose of infected leaves or mulch fallen leaves with a lawnmower. Apply a solution of 5% urea to fallen leaves to hasten decomposition, which reduces overwintering fungi. Pick up and dispose of fallen fruit.

[1]MPFS = multipurpose fruit spray.
[2]Do not apply myclobutanil (Immunox®) more than 10 times per season.
[3]Observe limits on the amount of spinosad and acetamiprid that can be applied per season.