

Holistic Spray Plan for Community Orchards

Every orchard site faces its own array of challenges. Biodiversity of place sets the stage. Specific disease cycles need to be understood to determine if spray applications should be continued beyond the primary infection window. Rots in particular require additional action in the fruit sizing window. Commercial growers concerned with aesthetic diseases and nutrient density will likely continue spray applications into summer. Weave in the organic tool box for insect pressures as necessary . knowing pure neem oil helps considerably here.

Growth Stage	Holistic Spray	Mix includes (per acre)		Comments
Bud swell/ green tip	Start Me Up	Options here tied to specific reasoning. See the June 2018 newsletter for further explanation	Winter's End	Copper or lime sulfur are conventional organic means of addressing overwintering pathogens in buds and bark crevices
Tight cluster	Spring1	Core Holistic Recipe	Primary Infection Window	Thoroughly wet fungal duff zone and tree structure
Pink	Spring2	Core Holistic Recipe w/trace minerals		Add Bt to this spray mix if surface feeding caterpillars in evidence
Spring Feeder Root Boost				Nitrogen boost for young trees; gypsum for stressed trees and biennial bearers
Bloom	Competitive Colonization Boost (CCB)	NO FISH, NO NEEM 1 quart karanja oil 4 gal. activated microbes 12 oz. seaweed extract 1 pint molasses		Use liquid kelp if freeze likely Including up to one gallon Sea Crop will be helpful
Stone fruit	1 st wave curculio	Surround base coat on early drawing fruits		Irritate the beast!
Petal fall	Spring3	Core Holistic Recipe w/trace minerals		Timing to be averaged across varieties
Week of petal fall	Fruit set pests	Surround for curculio Spinosad for sawfly		Base coat of kaolin clay to be applied in 2 to 3 layers
1 st Cover (5 to 7 days later)	Spring4	Core Holistic Recipe w/trace minerals		Micronized sulfur can be considered as well in an exceptionally rainy year
Week of fruit set	Fruit set pests	Renew Surround for PC 1 st generation moths		Grandevo can be used in this mix to further knock back PC
2 nd Cover (7 to 10 days later)	Comp1	Core Holistic Recipe w/ silica brew w/ calcium brew		Fruit Sizing Window
Next week of fruit set	Fruit set pests	Renew Surround for PC 1 st generation moths	Based on continuing pressure!	
	Borer trunk spray	Pure neem oil at 1% concentration	Adjust borer timing to the specific species at your site	
3 rd Cover (7 to 10 days later)	Comp2	Core Holistic Recipe w/ silica brew w/ calcium brew	A tighter spray frequency reflects more frequent wetting periods.	
4 th Cover (7 to 10 days later)	Comp3	Core Holistic Recipe w/ silica brew w/ calcium brew		

5 th Cover (10 to 14 days later)	Summer1	Core Holistic Recipe liquid fish optional w/ calcium brew	Fruit Ripening Window	Comfrey and green nettle in a fermented plant extract provide a farm source of foliar calcium.
6 th Cover (10 to 14 days later)	Summer2	Core Holistic Recipe liquid fish optional w/ calcium brew		Repeat the 1-2 pattern in warmer zones with longer growing seasons
	Apple Maggot fly	Sticky ball traps Grandevo/spinosad		Keep sticky renewed! Spot spray favored varieties
	Borer trunk spray	Pure neem oil at 1% concentration		Adjust borer timing to the specific species at your site
7 th Cover (10 to 14 days later)	Summer TBS	Core Holistic Recipe w/o liquid fish w/ cider vinegar		Including minerals with mid-August app helps trees prep for winter dormancy
8 th Cover (10 to 14 days later)	Summer END	Core Holistic Recipe w/o liquid fish w/ cider vinegar		If deemed necessary on later varieties
Fall Feeder Root Boost			Harvest Time	Organic blends with appropriate cation balance, rock phosphate, and trace minerals
Leaf drop in progress	Fall Holistic	4 gal. liquid fish ½ to 1 gal. neem oil 4 gal. activated microbes	Post Harvest	Thoroughly wet fungal duff zone and tree structure

Community Orchard Rates. It takes anywhere from 100 250 gallons of spray applied with a hydraulic handgun to cover an acre of trees to the point of runoff. The size of one's trees and canopy phase determines how far a spray tank of a given volume will go. The numbers given here are based on recommended acreage rates for each product. Ground applications are often at higher rates than foliar applications, as shown in the chart. Farm economy determines exactitude, as nutrition-purposed ingredients can be applied more openhandedly than toxins, especially when pulsing biological activity. The pivotal requirement in adjusting rates for higher spray volumes is to maintain the neem oil concentration at 0.5% (or slightly less for sensitive pear varieties) accordingly.

Core Holistic Recipe. A half-gallon of pure neem oil* stirred with a quarter cup (plus) of soap emulsifier then mixed into 100 gallons of water achieves a 0.5% fatty acid concentration. Seaweed extract at 8 ounces (dry weight), 2 gallons of liquid fish, and 2 gallons of *activated* effective microbes completes the brew.

Enhancements to the Core Recipe.

- Trace mineral formulation applied at Spring 2, 3, 4 (one quart per acre). Sea-Crop (sea minerals) equally improves enzyme cofactor synthesis.
- *Karanja oil works synergistically with neem oil (substitute 1/3 by volume)
- Manganese chelate with foliar calcium helps balance potassium excess.
- Dairy products (whole milk, whey) can be sources of calcium and protein.
- Aerated compost tea can be added with effective microbes to maximize species diversity. Phototrophic bacterial boosts include Quantum, Spectrum (from Tainio), and GroBiotix Px3 (from Organic Approach).