



**The Backyard
Mountain Orchard**

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Useful Plants Nursery

**What kind of orchard
do you want?**

Casual Gardeners
Low maintenance,
Easy-to-grow plants

Committed Gardeners
Medium maintenance,
Wider plant variety

Intensive Gardeners
Higher maintenance,
Greater yield,
High plant variety



Selecting fruits

- What fruit do you eat?
- What do you want to eat?
- Phyto-nutrition
- Beauty, edible landscape plants
- Ease in growing



Favorite fruits for every yard

- Strawberries
- Blueberries – rabbiteye and highbush
- Raspberries
- Blackberries
- Apples and Pears
- Nanking cherries
- Mulberries
- Muscadine grapes
- Asian pears
- Figs
- Pie cherries
- Elderberries



Selecting varieties

- Adapted to local climate and microclimate
- Adapted to your soil type
- Pest and disease resistance
- Growth habit
- Bearing season
- Ease of maintenance
- Water needs, drought tolerance
- Risk of frost damage



Right plant, right place

- Sun
- Air flow
- Water
- Space requirements
- Soil type
 - Clay, sand, loam
 - Drainage
 - pH and fertility needs



Effects of pH on nutrient availability

Strongly Acidic	Acidic	Garden	Alkaline	Strongly Alkaline
			nitrogen	
			phosphorus	
			potassium	
			sulphur	
			calcium	
			magnesium	
	iron			
	manganese			
	boron			
	copper & zinc			
			molybdenum	



Establishing plants

- Prepare ground – holes vs. whole beds
- Water plant – keep roots moist
- Make holes 3-5x width of pot and same depth, mound in heavy soils
- Incorporate nutrients into backfill
- Crack sides and bottom of hole
- Plant your plant, backfill, water
- Broadcast fertilizer (and limestone) on top of soil beyond planting hole
- Mulch, water again



Recommended amendments

1-3 gal plant	5-10 gal plant	Amendment
1 pint	1 quart	Phosphate rock
1 cup	1 pint	Greensand
1 cup	1 pint	Blended organic fertilizer (e.g. Fertrell 5-5-3)
1 cup*	1 pint*	Limestone *depending on pH
½ cup	1 cup	Seaumic or granular seaweed-humate
1 tsp	1 tbs	Microbial blend
½ shovel	1 shovel	Compost and/or worm castings
1 pint	1 quart	Biochar or ground charcoal
1 pint	1 quart	Granite quarry crusher fines, if available



* In priority order

Blueberries are special (cranberries and lingonberries too)

1-3 gal plant	Amendment
5 gal	Pine bark soil conditioner or triple ground pine bark
1 cup	Greensand
1 cup	Fertilizer for Acid-loving plants (e.g. HollyTone, Fertrell Berry Mix, cottonseed meal)
½ cup	Seaumic or granular seaweed-humate
1 tsp	Microbial blend
½ shovel	Worm castings
1/4 cup	Granular sulphur
1 pint	Biochar or ground charcoal



Mulch

- Put most organic matter on top of soil, rather than in the hole
 - Reduces weed and grass competition – a layer of wet cardboard under mulch can help
 - Keeps soil cooler and holds moisture
 - Worm chow
- Keep wood mulch 6" away from stem
- Mulch 2" deep (deeper in winter)
- Mulch at least 1' beyond planting hole
- Options: ground pine bark, composted wood chips, crushed rock, compost, leaves



Post-planting watering schedule

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Week 1	Water	Water	Water		Water		Water
Week 2		Water			Water		
Week 3	Water				Water		

Amend watering schedules to account for:

- Drenching rains
- Cloudy weather
- Hot, dry weather
- Existing container medium and surrounding soil moisture levels



Maintenance is love

- Deep watering during dry periods – 1"/week is ideal for most plants.
- Mulching – refresh as needed, thinner in summer, thicker in winter
- Fertilizing
- Dealing with weeds
- Dealing with pests and diseases
- Pruning



Fertilization

- Fertilize during the growing season every six weeks, ending by mid-July
 - Early April
 - Mid May
 - End June
- Lift mulch and apply blended fertilizer and compost to soil surface
 - Apply in widening circles as plant grows
 - Apply lime and phosphate if indicated by soil test



Dealing with weeds

- Critical during the first 5 years
- Grass is the key competitor for moisture and nutrients
- Cardboard and mulch help suppress weeds

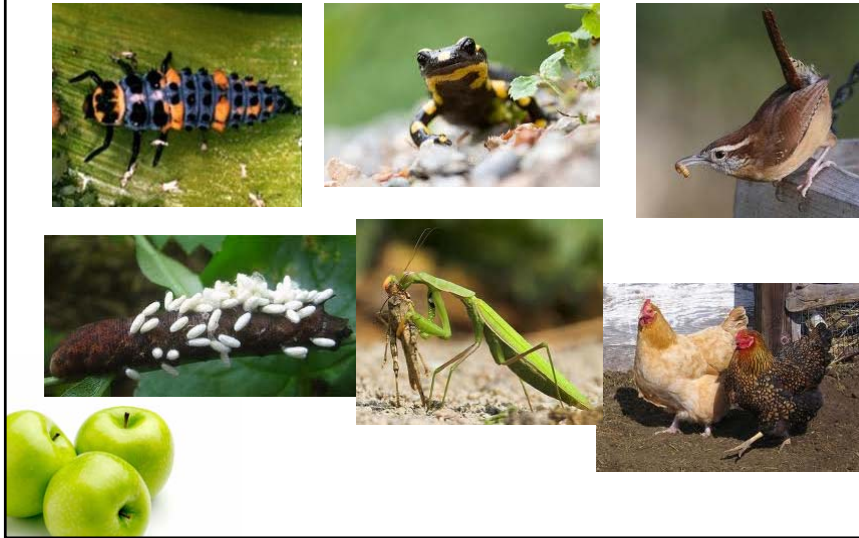


Dealing with pests and diseases

- Choose disease-resistant varieties and species
- Sanitation, air and light
- Accept some damage to plant and fruit
- IPM scouting – know when to be on the lookout
- Garden calendar and spray schedule
- Dormant oils
- Organic fungicides and pesticides – Surround, Serenade, Organicide, Actinovate, Neem
- Voles
- Birds and mammals



Pest control – orchard as ecosystem



Structural pruning First 5 years are critical

- Develop the architecture of the plant
 - On trees, develop strong (wide) crotch angles
 - Space scaffold branches
 - Remove suckers and water sprouts
 - Prune to let light and air into the center



Annual fruit tree pruning

- When to prune
 - June or after fruiting is ideal
 - Late winter – encourages growth
 - Summer – keeps plants more compact
- Remove dead and diseased wood
- Remove crossing branches or ones that grow in
- Trim previous year's excess growth
- Prune to an outside bud
- Keep the center open



Pinch pruning

- Keeps plants compact – figs, berries, tea camellias, mulberry bushes
- Pinch the tender terminal buds to encourage lateral branching
- Pinched tips may be useful – tea camellia, blueberry, blackberries



Companion planting

- Nitrogen fixers and dynamic accumulators – cover crops as mulch
- Aromatic pest confusers
- Habitat for beneficial insects, amphibians, reptiles, animals, and birds



Poultry in the orchard

- Chickens and ducks for pest control
 - Fruit drops and migrating pest insects
 - Fertilize and aerate mulch
- Geese for grass control
- Seasonal management required



Using challenging places

- Slopes
 - Fruit, chestnuts, berries
- Wet areas
 - Aronia berry, pawpaw, Shadblow serviceberry, elderberry, American persimmon
- Near black walnut
 - Bramble berries, pawpaw, serviceberry



Space optimization

- Grow trees as shrubs
- Interplant among trees
- Fruit on edges, veggies to the center
- Substitute fruiting plants for ornamentals
- Fedges – fruiting hedges



What the cool kids are growing

- Sea berries
- Azarole
- Aronia berry
- Cornelian cherry
- Goumi
- Honeyberry
- Hardy citrus
- Jujube



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