

Selecting Successful Cover Crops for Your Hop Yard

- 1. Identify your priorities.** All cover crops will benefit the soil and provide organic matter inputs but some are high biomass producers, some better nutrient scavengers, some better at breaking up compaction or suppressing nematodes for example. Decide your primary goals. Cover crop mixes may allow you to achieve multiple benefits.

- 2. Know your management, constraints and concerns.** What planting dates work for you and your crew? How much row traffic do you have? How susceptible is your variety to downy or powdery mildew? Do you cross cultivate? When do you typically start fungicide and insecticide sprays?

Table 1. Benefits and considerations of different cover crop types. *Use as a guide – within each category, significant variation between species is possible. Ask, do some research and your own small experimentation on specific species or varieties*

Desired benefits/characteristics	fall planted annual	spring planted annual	annual reseeding	perennial sod
add organic matter	XXX	XX	XX	XX
scavenge excess nutrients, 'catch crop'	XXX	X	XX	XXX
supply N, 'green manure'	XX (legumes)	X	XX	X
pollinator habitat	X	XX (careful with sprays!)	XX (careful with sprays!)	X
beneficial predator habitat	X	XX	XX	X
winter cover, erosion prevention	XXX	X	XX	XXX
summer cover, dust mitigation	X	XXX	XX	XXX
weed suppression	XX	XX	XX	XX
year round ground cover	X	X	XX	XXX
fast establishment	XXX	XXX	XX	XX
Considerations for hop production				
high biomass, increase disease pressure	XXX (species dependent)	XX (species dependent)	XX (depends on mow)	XXX (depends on mow)
shade tolerance	-	X	XX	XX
favor voles	X	X	X	XX
withstand high drive row traffic in spring and summer	-	X	XX	XXX
mowing frequency	-	X	X	XX
Suggestions for PNW hops <i>Great information on specific varieties available in USDA Plant Materials reports</i>	winter cereals, cereal rye, crimson clover, common vetch	teff, German foxtail millet, buckwheat, chickling vetch, phacelia	subterranean or rose clover, annual lupine	turf type fescues, bentgrass, white clover

Specific considerations for hops:

Pollinator habitat – Attracting pollinators can be a great benefit to our ecosystems and other crops, but make sure if you do this, that the bloom period is before you begin spraying both fungicides and insecticides or the crop is mowed before spraying. You don't want to end up attracting pollinators and inadvertently spraying them.

Low biomass options – Too much biomass in the rows can be a pain to manage and may decrease air flow and increase disease pressure. A few ideas for lower height or lower biomass options (crop type, see table above): annual lupine (AS), subterranean clover (AS), hybrid cereal rye, Brasseto var. (FP), oats (FP)

Longevity of the yard – Important to consider when thinking about perennial cover and summer cover options. Work by Sara DelMoro in Yakima Valley found that hard or tall fescue was most economical if the yard would stay in for 5+ years. < 5yrs, a fall planted barley that was mowed as needed in summer was most economical.

Method of establishment – Drill seeding into a prepared seedbed often leads to better establishment and would be worth considering if putting in a long-term perennial cover. Or consider broadcast seeding into a tilled bed for a sod type establishment. <https://extension.oregonstate.edu/crop-production/vegetables/cover-crop-establishment-western-oregon-vegetables>

Current practices and equipment – A perennial cover crop may interfere with existing hilling and pruning methods if using cross-cultivation practices. Equipment for side-hill pruning likely necessary.

Time of establishment – In western Oregon, fall planting is likely to be most successful for hop producers, particularly for perennial plantings. Fall seeded crops take advantage of natural precipitation, help prevent soil erosion and scavenge excess nutrients through the winter and are more established when spring traffic increases. Self-seeding annuals should also be planted in the fall if possible.

Break up soil compaction – daikon and oil seed radish, cereal rye. CAUTION with radishes – 3 mile isolation distance required because regional seed production; must mow/terminate before flowering. USDA Plant Materials Study found that oil seed radish 'Image Nematode Control Radish' and 'Cardwoodi Nematode Control Radish' had higher root length than many daikon tiller radish varieties. See report for details.

Mixes to consider – Planting a mix of a 2-6 species is a good idea. Winter: cereal grain, legume (crimson clover /common vetch), phacelia. Summer annual: teff, buckwheat, chickling vetch. Perennial: turf type tall fescue/hard fescue/bent grass, white clover. Perennial w/annual reseeding: turf type tall fescue, subterranean clover, native annual lupine.

There are tons of resources on cover crops and selecting successful cover crops online – it can easily get overwhelming. Don't hesitate to call and ask if you have specific questions. I'd also love to hear what you're experimenting with!

Resources:

Cover crop variety testing in the Willamette Valley: Annie Young-Mathews, USDA Plant Materials Center, Corvallis. Great resource for comparing specific varieties in local environment!

https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/orpmcot12850.pdf

https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/orpmcot13324.pdf

Cover crops in hop production in Yakima Valley: Sara DelMoro.

https://projects.sare.org/sare_project/fw15-044/

Managing Cover Crops Profitably: USDA-SARE publication, digital version is free.

<https://www.sare.org/Learning-Center/Books/Managing-Cover-Crops-Profitably-3rd-Edition>

Selecting successful pollinator mixes

https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/orpmcbr13465.pdf

Cover crop establishment tips for Oregon vegetable systems: Nick Andrews, OSU Extension

<https://extension.oregonstate.edu/crop-production/vegetables/cover-crop-establishment-western-oregon-vegetables>

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