

COVER CROP MULCHES SUPPRESS WEEDS ON BERMS

By Patrick Cavanaugh

Second in a two part series on the benefits of cover crops in California vineyards.

Cover crops have many agronomic benefits, such as improving soil tilth, water infiltration, and improved soil fertility. They can also be mowed and used as a mulch for weed control on the vineyard berm.

UC researchers such as Clyde Elmore, weed scientist, Cooperative Extension, UC Davis, have found that using biomass generated from cover crops grown in vineyards and placed in the vine rows can suppress weed growth. Vegetation mulches reduce weeds by shading the ground, the same way as plastic mulches do.

Strategies for weed management differ. They are based upon location and vineyard, and between rows or within rows. Mowing and disking are available non-chemical alternatives to herbicide use between rows, but the options for weed control within vine rows are limited.

Weeds in vine rows compete directly with grapevines for nutrients and water, and can interfere with harvest operations. Growers do not typically use mechanical removal because such practices can damage vine trunks and roots, trellises and irrigation lines.



The mulch after it has dried on the berm.

Most growers currently use herbicides to control weeds in vine rows. Because weed control in vineyards is most difficult in vine rows, this area has been the subject of several important studies.

Among the best cover crops for mulches is a mixture of purple vetch, common vetch and oat or Merced rye. All work well together as cover crops. Grasses are good foragers for soil nitrogen. Vetches grown in soils with enough nitrogen, will not fix nitrogen as easy as it would in nitrogen depleted soils. If grown with grasses, the theory is that grasses will pick up the soil nitrogen, reducing it, so the vetches will fix

more.

Another reason to grow grasses with a vetch is that when vetches are grown alone, they grow upright for a while then they lay down. If growers have a grass growing with them, the vetches climb on the grass and remain upright. If they remain upright then they can be mowed easier and used as a mulch.

Because the system requires regular mowing, it should be mowed before the grass or the vetch set seeds so that seeds don't end up on the berm. Once mowed, the cover crops grow back quite well.

Another purpose for using grasses, such as Merced rye, is that when mulching, growers want something that will dry out and not decay and decompose too fast.

"For growers using cover crops as a mulch for weed control, they really need to consider the use of grasses along with the vetches," said Rachid Hanna, UC Davis entomologist who is studying the benefits of cover crops including their use as a mulch for weed control. "Grasses have more fiber in their tissues than vetches, which are very succulent. Vetches dry and shrivel up and are gone much faster than grasses."

Hanna said Merced rye seems to be the best for mulches. "Merced rye doesn't have many leaves, mostly stem tissues and it stays as a mulch without decomposing. It is especially adapted to the soils

and climate of the Central Valley."

The covercrops should be mowed with clippings placed on the berm several inches thick. This reduces light penetration and potential weeds.

Growers must be aware of the only side effect of using covers as weed suppression mulches. They can provide a good habitat



A mulching mower is used to clip the cover crop and throw it on the berms for weed suppression.

for voles, field mice, and snakes. So keep this in mind when using mulches.

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