

Developing Strategies to Terminate Winter-Grown Nitrogen Scavenger Cover Crops in Central California

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New California agriculture regulation offers nitrogen (N) credit to Central California growers who grow N scavenger winter cover crops. The regulation has three requirements: 1) cover crop must grow at least 90 days during October to April, 2) cover crop must produce at least 4500 lbs. dry biomass/ acre, and 3) cover crop shoot biomass has a carbon: nitrogen (C: N) ratio of at least 20:1. From these requirements, the last two cannot be quantified in the field. This project aims to identify plant traits related to dry mass and C: N ratio of oat (*Avena sativa*) at different developmental stages to provide guidance to growers for terminating oat cover crop to receive N credit. The experiment consists of pot and field studies.

In the pot study, Cayuse oat was sown in ½ gallon pots that contained potting mix soil and 1g of Vigoro Flowering Plant Food (NPK: 15-30-15). Pots were arranged in a completely randomized design (CRD with three top-dress N treatments of 2.5 g N /pot at tillering and 2.5 g pot⁻¹ at stem elongation, and non-treated control. The experiment has three replications. Leaf chlorophyll content has been estimated with a SPAD Chlorophyll meter, and plant height has been recorded weekly. The oat plants will be terminated at five different growing stages of 1) tillering, 2) stem elongation, 3) boot, 4) heading, and 5) physiological maturity. At termination, plant dry matter will be measured, and plants will be dried, grinded and their N and C content will be measured with the combustion method. Similar measurements have been carried out on Cayuse oat in the field.