

Evaluation of Almond Shell Application as a Soil Amendment to Alfalfa Stands

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Limitations on burning, a need to reduce organic matter in the waste stream from agricultural byproducts, and an increased interest in building soil carbon have led to some alfalfa producers applying almond shells to their fields from neighboring orchards. In addition, regulations and incentive funding programs in the state of California are leading to increased application of organic matter to farmland. However, the impact of almond shell application to the alfalfa stand has not been quantified. The objective of this project is to quantify the impact of almond shell application to alfalfa fields on alfalfa yield, stand, and soil health. In this project, 4-8 tons/ac of almond shells were applied to replicated research plots in a three-year old alfalfa stand. Baseline soil samples and stand counts were collected prior to almond shell application. The following data will be presented: percent cover of weeds, alfalfa, and bare soil collected prior to first cutting; alfalfa yield at first cutting; alfalfa stand counts after first cutting; soil compaction measurements one year after almond shell application. Though this project is in the first year of study, and data is preliminary, there are important implications for alfalfa producers in other regions who may be required to apply high-carbon organic amendments to existing stands. This includes the potential for an almond shell mulch to help with moisture retention and possibly mitigate negative effects of wheel traffic.

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