

CALIFORNIA YERBA SANTA LEAF PRODUCTION

Clinton C. Shock and Alicia Rivera, Malheur Experiment Station, Oregon State University, Ontario, OR, 2015

Introduction

California yerba santa (*Eriodictyon californicum*) is a chaparral shrub of southwestern Oregon and western California. California yerba santa is an early successional plant on unstable slopes and can be used for revegetation projects. Yerba santa was used as a medicinal by native peoples (Immel and Anderson 2006). More recently yerba santa has been of interest due to its secondary metabolite composition for medicinal products and for flavor modifiers.

Preliminary trials for leaf production at other locations in 2013 and 2014 had low dry leaf yields (1,000 lb/acre) due to seedling death from various organisms and *Verticillium* wilt of established plants. This trial tested whether or not California yerba santa could be successfully grown as an annual at Ontario, Oregon.

Materials and Methods

California yerba santa seed was collected from shrubs at Payne's Creek, California, and Bonny Doon, California. Seeds were treated and planted into the surface of trays filled with potting mix in the fall of 2014 in a greenhouse. Seeds were covered with row cover until seedling emergence. Small seedlings were transferred and grown in trays with 128 cells for eventual transplanting to the field. Diseases were controlled with organic fungicides.

A field of Owyhee silt loam was marked out in 30-inch beds with drip tape placed 4 inches deep in the center of each bed. On May 15 the plants were transplanted. Transplants from the two seed sources were planted in a randomized complete block design with five replicates. Individual experimental plots had four 30-inch rows 10 ft long with plants 12 inches apart in each row.

Plants were irrigated with the drip-irrigation system and the plots were weeded as necessary. The field received 50 lb/acre of nitrogen as urea and 0.012 lb/acre iron as an iron chelate (Sprint 138) twice during plant development. Pesticides were not used during field production.

The leaves were picked on August 27 and 28, 2015 from the middle two rows of each plot. Leaf samples were collected for chemical content. Green leaves without discoloration (upper leaves) were harvested separately from the lower leaves with dark spots at the bottom of the plants. Leaves were weighed wet, were dried, and were weighed again. Average dry leaf yields were determined and statistical differences in leaf yields between seed source sites were determined using analysis of variance. Means separation was determined using a protected Fisher's least significant difference test at the 5% probability level, LSD (0.05).

Results and Discussion

Transplanting was greater than 90% successful. The drip irrigation system watered the crop uniformly. Plants grew quickly. The results of the leaf samples sent to a laboratory for analyses were not received. Dry green leaf yield ranged from 3,548 lb/acre for the plants grown from Payne’s Creek seed to 4,129 lb/acre for the plants grown from Bonny Doon seed (Table 1). The yields of black discolored leaves and total leaves did not differ significantly between seed source.

Acknowledgements

This project was accomplished due to support from Oregon State University, Malheur County Education Service District, and Formula Grants nos. 2015-31100-06041 and 2015-31200-06041 from the USDA National Institute of Food and Agriculture.

References

Immel, D.L., and M.K. Anderson. 2006. California yerba santa (*Eriodictyon californicum*) plant guide. NRCS, National Plant Data Center.

Table 1. Leaf yield of California yerba santa (*Eriodictyon californicum*) grown at Malheur Experiment Station, Oregon State University, Ontario, OR in 2015.

Seed source	Dry leaf yield, lb/acre		
	Green leaves	Dark leaves	Total
Payne’s Creek, CA	3,548	805	4,353
Bonny Doon, CA	4,129	453	4,582
LSD (0.05)	534	ns	ns