

Cover Crops in Citrus – A Cost-Benefit Analysis

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Table: Costs of cover crop adoption in orange production

Costs	Applications/ Year	Materials Cost/Acre (\$)	Total Cost/ Acre (\$)
Total cost of production (no cover crops)			1988.74
Cover Crop cost items			
Seeds	2	80	160
Fuel costs	2	2	4
Labor	2	5.5	11
Drill	2	20	40
Other	5		
Total Cover Crops Costs			220
Savings from Cover Crops (no mowing)			75.47
Net cost (Total Costs + Cover Crops costs - Savings)			2133.27

Cover crops, or non-cash crops, have traditionally been used in row crop production to improve soil organic matter, nitrogen fixing, and for weed control. Citrus growers can potentially benefit from adopting cover crops since healthier soils (because of using cover crops in citrus) would in turn strengthen trees. Growers might however be uncertain about the costs and benefits associated with this adopted practice. In this study, we analyze whether adopting cover crops would be an economically feasible option for growers. We calculate the break-

even prices for citrus, specifically oranges, in terms of price per box and price per pound solids by considering additional costs and short-term savings from using cover crops in citrus groves across various yield and quality scenarios that are based on historical data. Cover crops increase cost of production by \$220 per acre per year. Cover crops, when not mowed, reduce soil disturbance, and keep the ground covered. Thus, the net cost of adopting cover crops, accounting for the \$75.47 per acre savings from not mowing, is \$144.53 per acre. This is

a 7.26% increase from the baseline production cost and constitutes 6.77% of the total production cost in the first year of its adoption. Adopting cover crops would be profitable at median yield-quality scenarios for ‘Valencia’ and non-Valencia oranges. Moreover, if cover crop adoption leads to improved fruit quality by 1-3 quartiles, or from 5.9 to 6.32 pound solids/box for ‘Valencia’ oranges, the break-even prices would be comparable to the last four years of market prices.

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