

N management for Tomato Growers to Incorporate Compost with Fertilizer N

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2021 California Processing Tomato Production,
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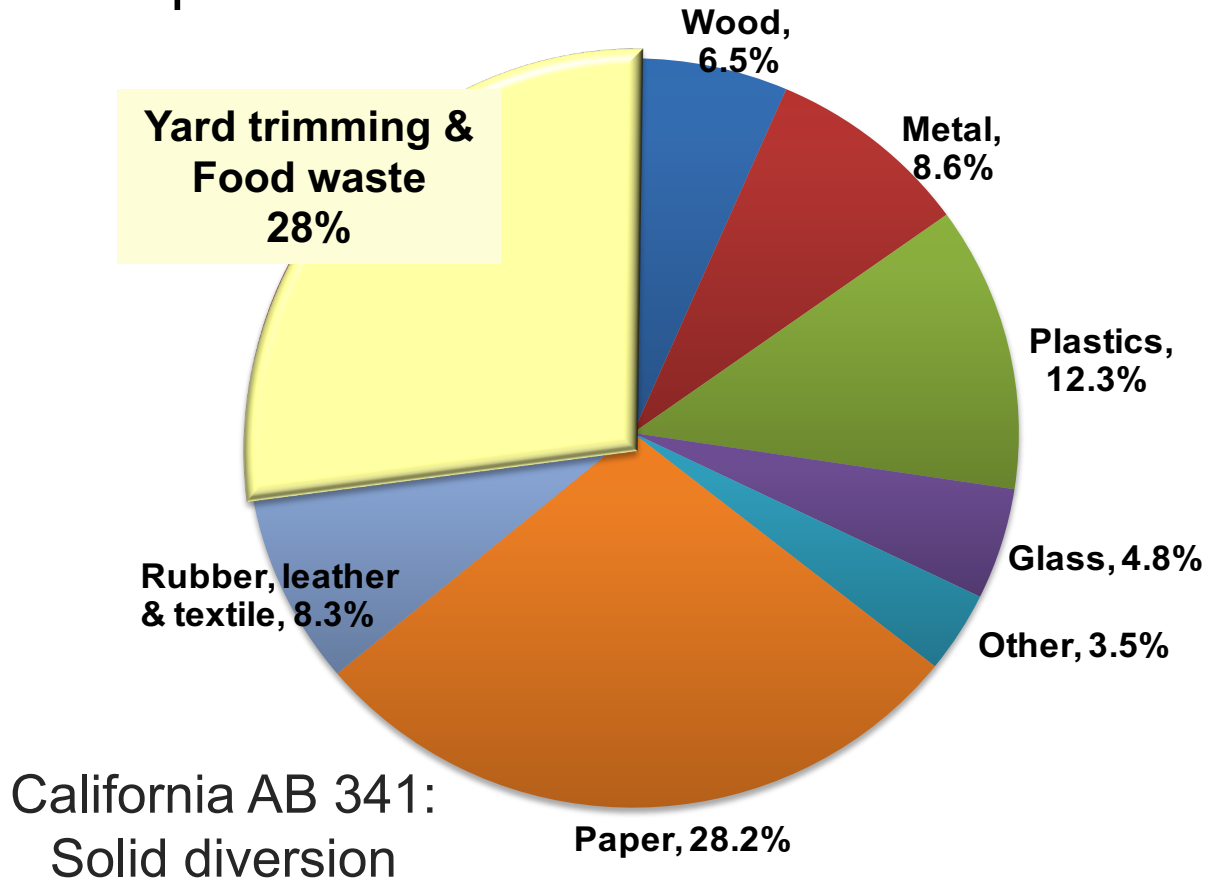


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The use of green waste and food waste

Multiple solid wastes in the United States



The agronomic benefits and environmental footprint of compost application is unknown.

Tomato Field Trials

- Compost type: Foodwaste compost (FW, 5% foodwaste composted with 95% greenwaste); Greenwaste compost (GW, 100% greenwaste composted)
- Compost application rate: 0, 4 and 8 tons/acre
- N fertilizer application rate: 0, 70%, 85% and 100% of recommended N at 180 lb/acre

Tomato fields



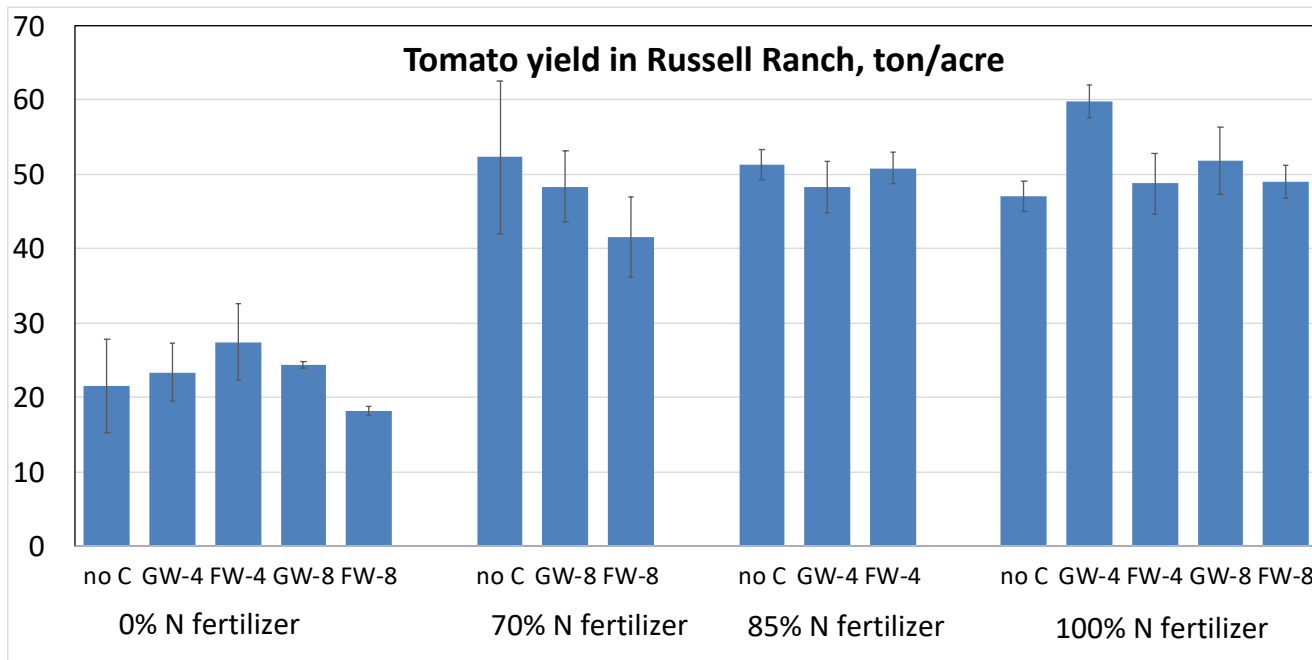
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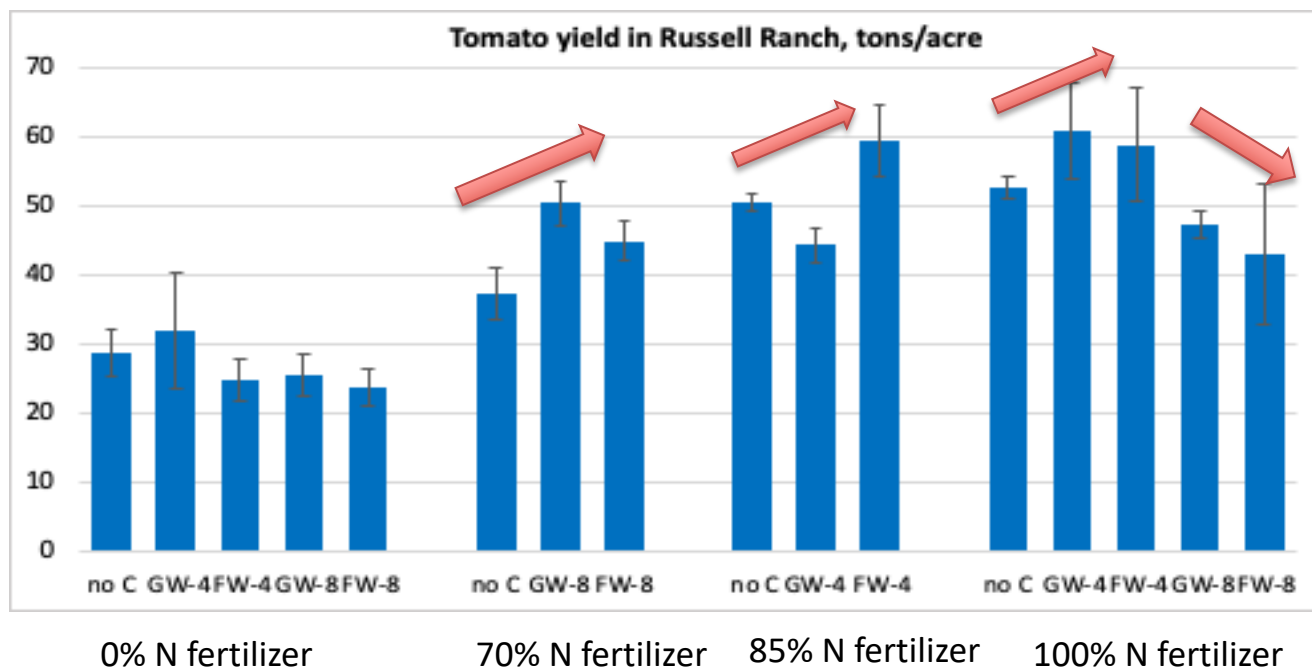


Tomato yield

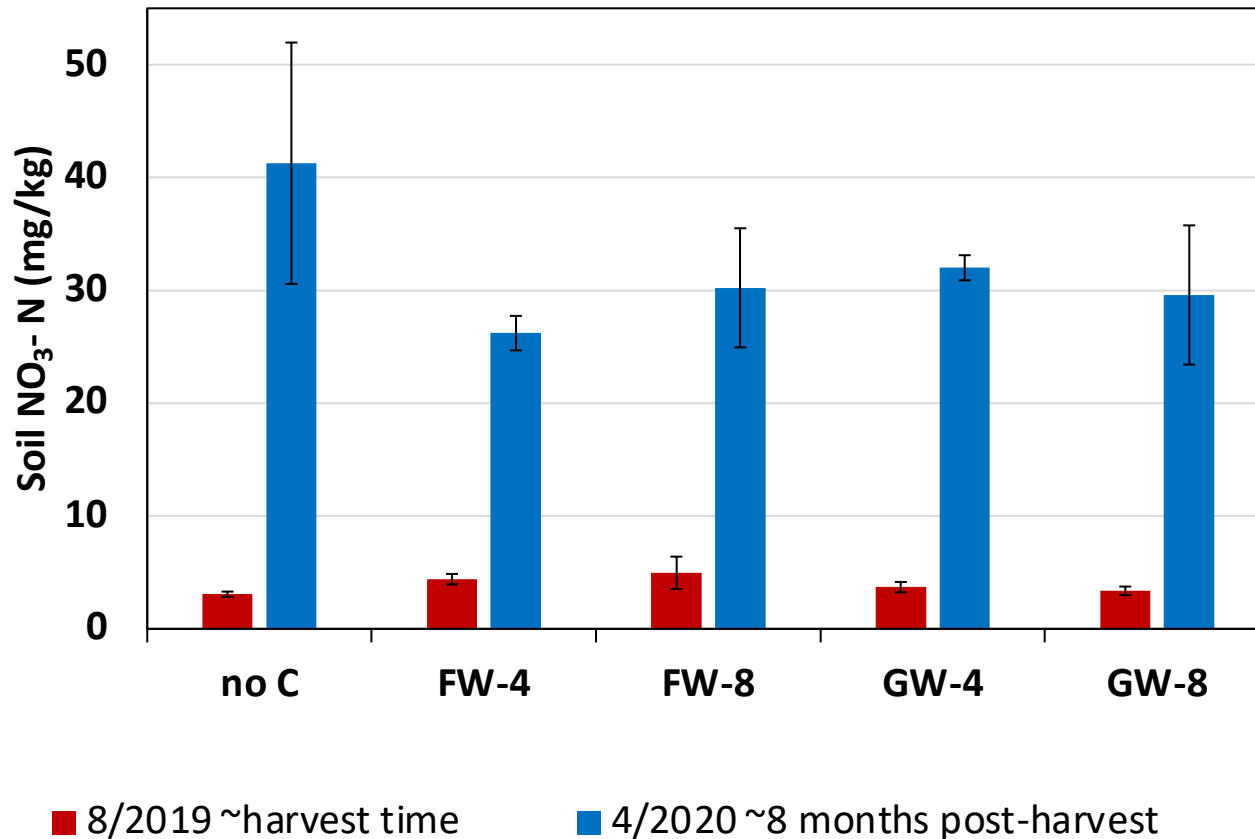
Year 1



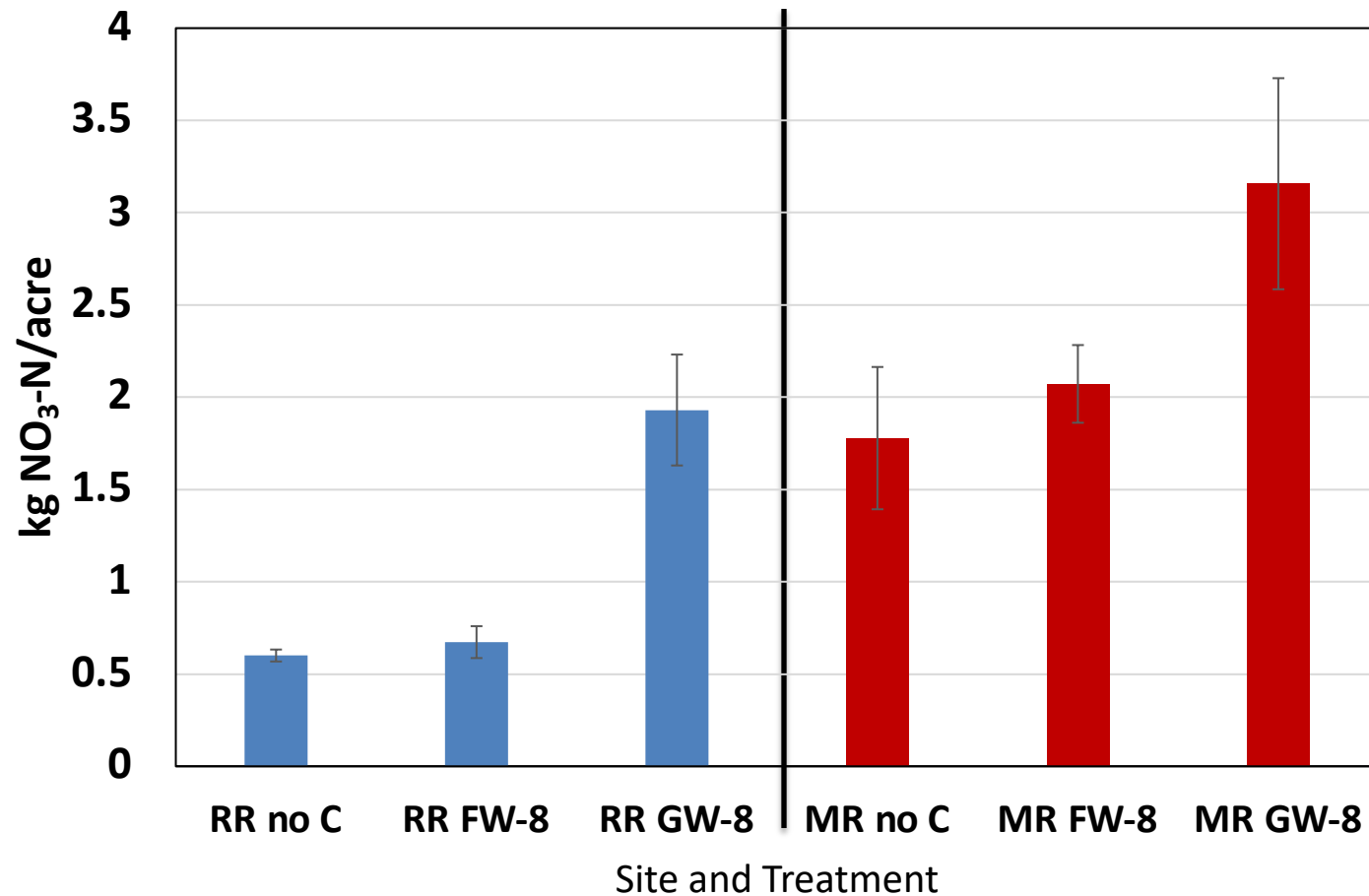
Year 2



Soil nitrate at the time of harvest and four months after harvest



NO₃⁻ leached from the top 30 cm of soil in the control and highest compost application plots



Take Home Messages

- Compost application has potential to increase crop yield, with higher rate of compost application needs to be combined with reduced N fertilizer.
- Less soil nitrate occurred in the food waste compost treatments compared to the control during the winter fallow period
- Nitrate leaching potential was lower in the food waste compost treatments than in the green waste treatments
- The use of food waste compost likely promoted soil N immobilization or decreased soil N mineralization

Research Team

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Thank you!



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