

Carbon Farming Efforts facilitated by the RCD of Greater San Diego County

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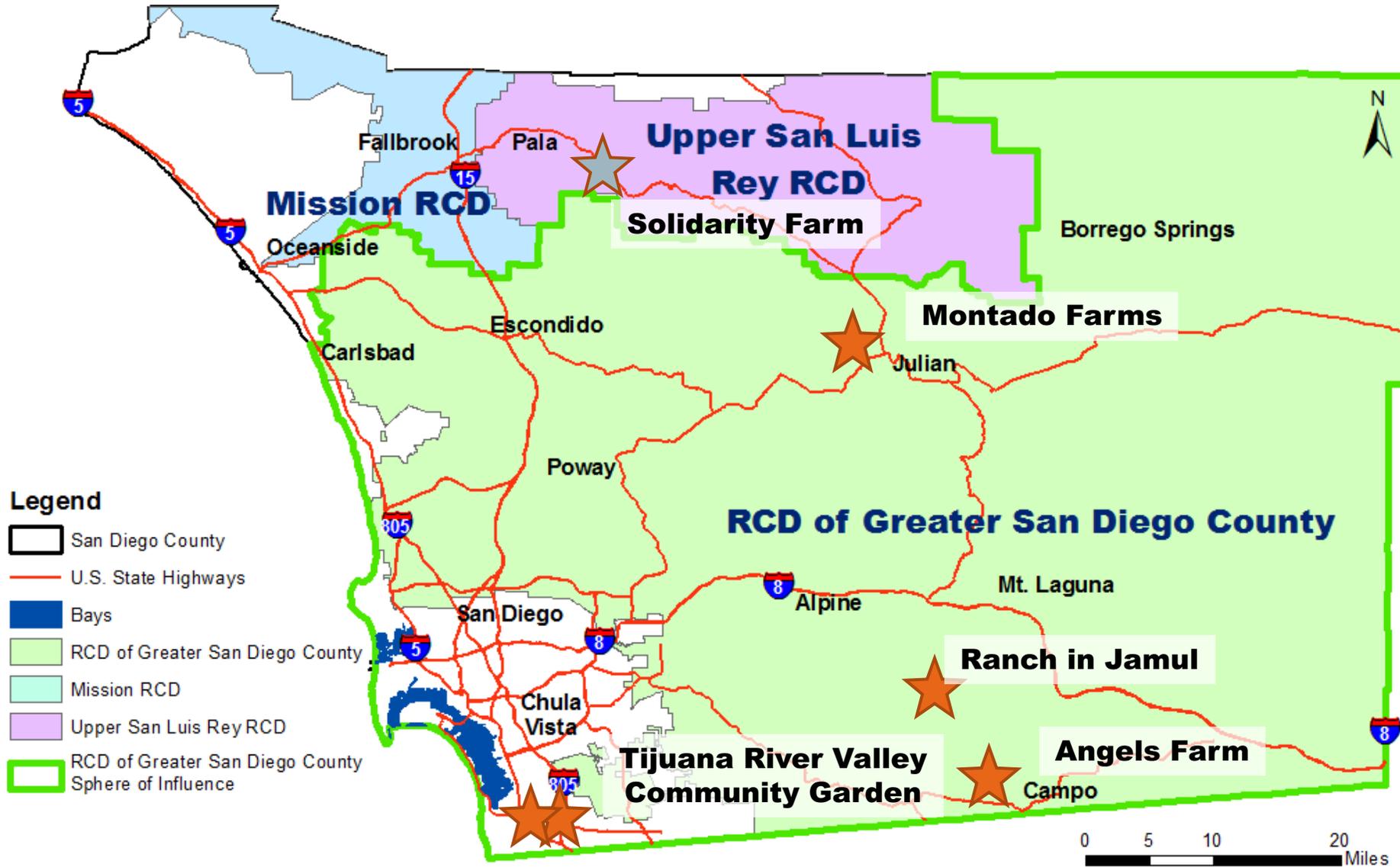
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San Diego: carbon farming projects

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The First Carbon Farm Plan in the county

was made the summer of 2017 by Dr. Chandra Richards

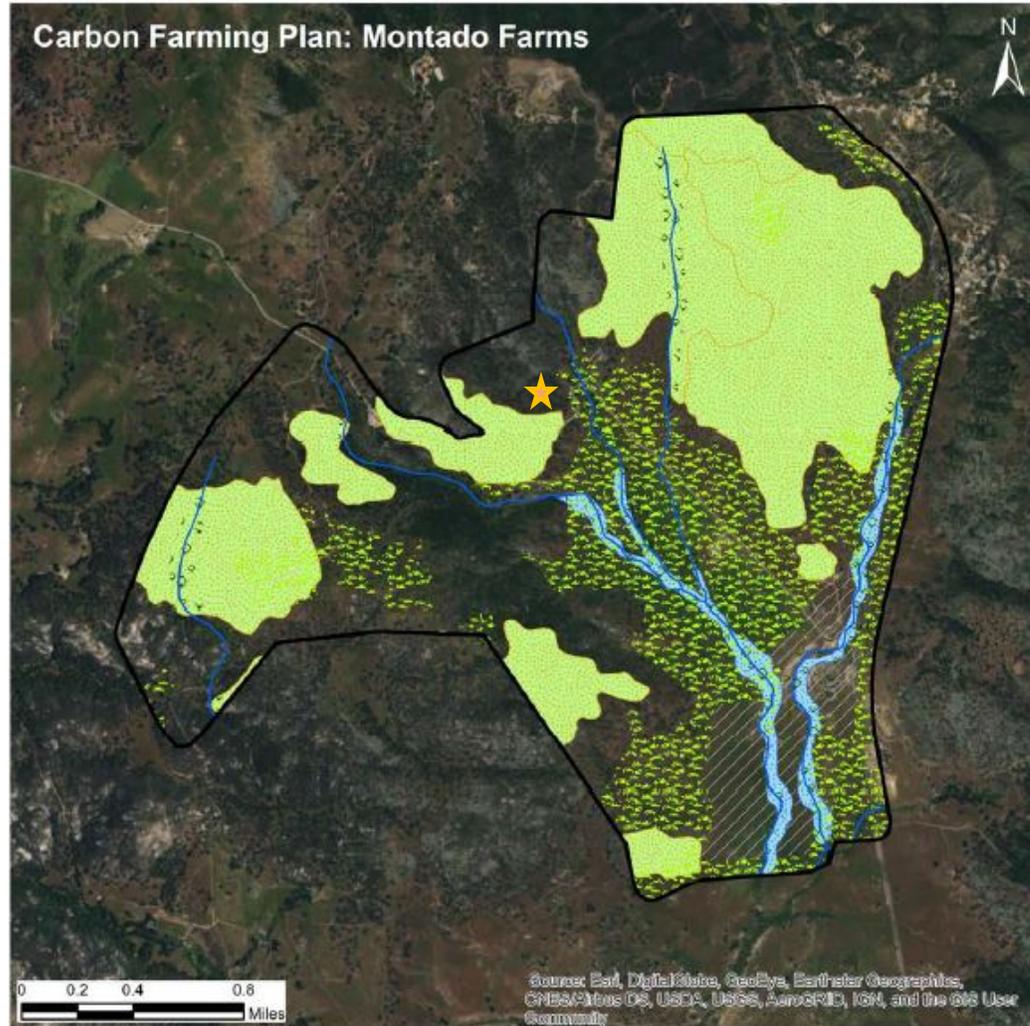
- ▶ The main goal of this carbon farming plan was to identify all the opportunities for carbon sequestration to improve soil health, and reduce GHG emissions.
- ▶ If implemented, the recommended practices could sequester approximately 30-900 MT CO₂ E annually. Over thirty years these potentials increase to 1,000-29,000 MT CO₂ E

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Montado farm



Legend

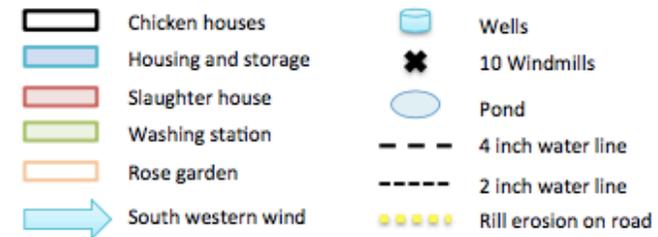
- Property Boundary of Montado Farms
- Rivers and streams
- Disturbed and developed areas

Carbon-Beneficial Practices Planned

- Riparian restoration, forest buffer, and habitat improvement, 115.2 acres
- Agroforestry (tree/shrub establishment) integration on grasslands, 860 acres
- Forage and permanent biomass planting in woodland areas, 1094.7 acres
- Forage herbaceous cover planting in riparian systems, 114.6 acres

Angels farm

- ▶ 40-acre farm owned by Belinda Xu
- ▶ Producers goal: to supply produce for her elementary school's food program
- ▶ 3 practices on 18 acres:
 - ▶ Hedgerows with native plants (1850 feet)
 - ▶ Compost application
 - ▶ Cover crops
- ▶ Angels Farm has the potential to sequester 20 - 25 MT CO₂ E per year or approximately 90 MT CO₂ E per acre per decade



Tijuana River Valley Community Garden Hedgerow Planting

Post-planting



Hedgerow

Quarter acre plots

Expansion of the
community garden



Hedgerow Planting

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January 2018
Planting day



One year later



Demonstration Plot

- ▶ Healthy Soils Type B Demonstration Project grant funded by CDFA
- ▶ Started August 2018
- ▶ Farmed by our Head Gardener, Gregg Cady
- ▶ 3 practices (with test and control plots):
 - ▶ Compost application
 - ▶ Mulching
 - ▶ Cover crops (legume, non-legume)



Starting from waist high weeds





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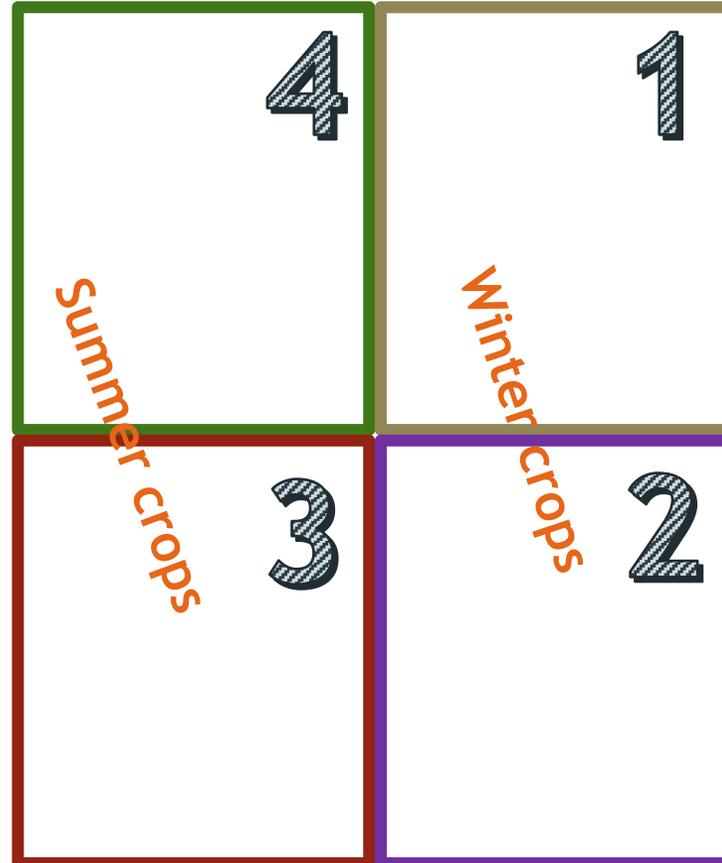


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Harvest

Fields 1 & 2

- ▶ Compost and mulch treatment
- ▶ First cycle of vegetables
 - ▶ Broccoli
 - ▶ Romaine lettuce
 - ▶ Daikon
 - ▶ Bok choy
- ▶ Donated >1000 lbs. to RCD partners and local groups
 - ▶ San Diego Food Bank
 - ▶ San Diego Rescue Mission
 - ▶ Food not Bombs
 - ▶ Feeding San Diego



Treatments



C

T

4

Cover Crops
Non-Legume

T

C

Compost

1

T

C

Cover Crops
Legume

3

C

T

2

Mulching

Cover crop

Fields 3 & 4

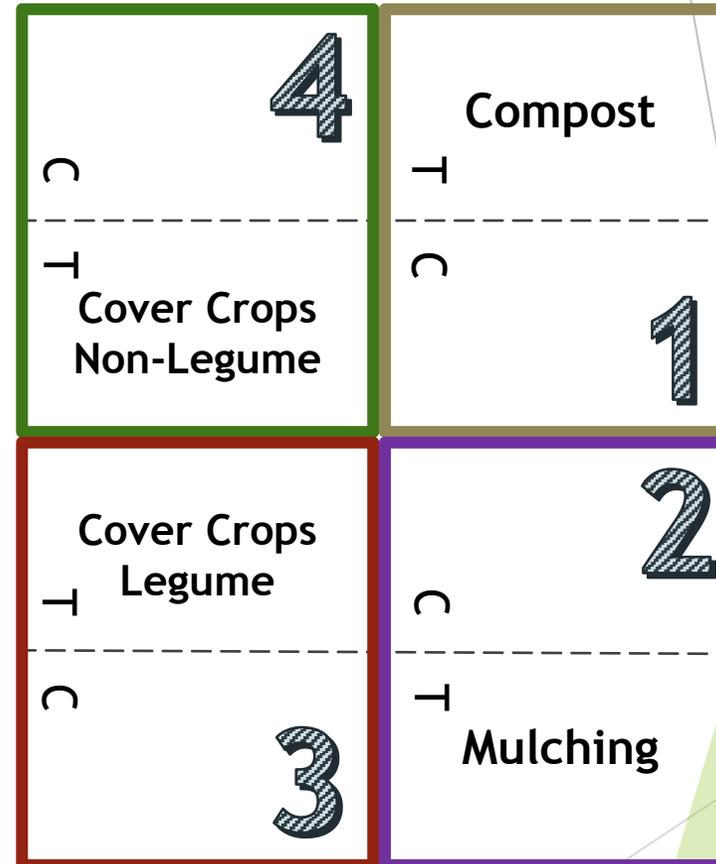
► Cover Crop composition

Field 3:

spring oat,
spring peas,
chickling vetch,
spring lentils,
chick peas,
common vetch,
flax,
crimson clover,
sunflower

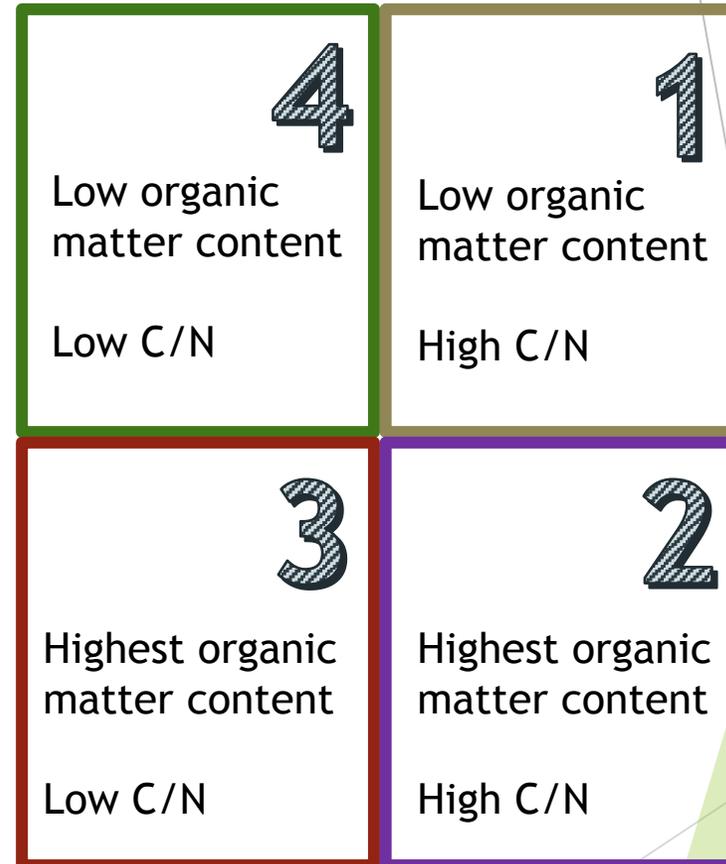
Field 4:

winter oats,
winter triticale,
flax,
safflower,
annual ryegrass,
smart radish,
brown mustard,
african cabbage



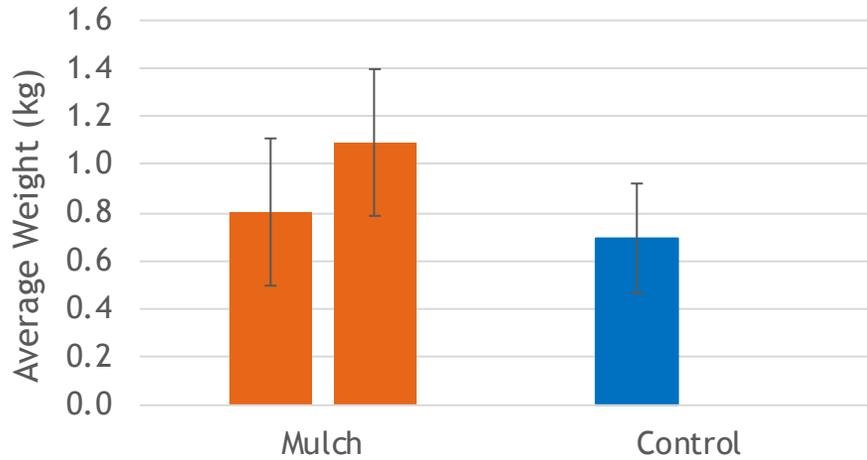
Environmental analyses

- ▶ Soil testing prior to implementation
- ▶ C/N Ratio: 12.5-15
- ▶ Organic matter content: 1.0-3.5%
- ▶ Soil moisture: results skewed by rainfall
- ▶ Next soil tests in August 2019

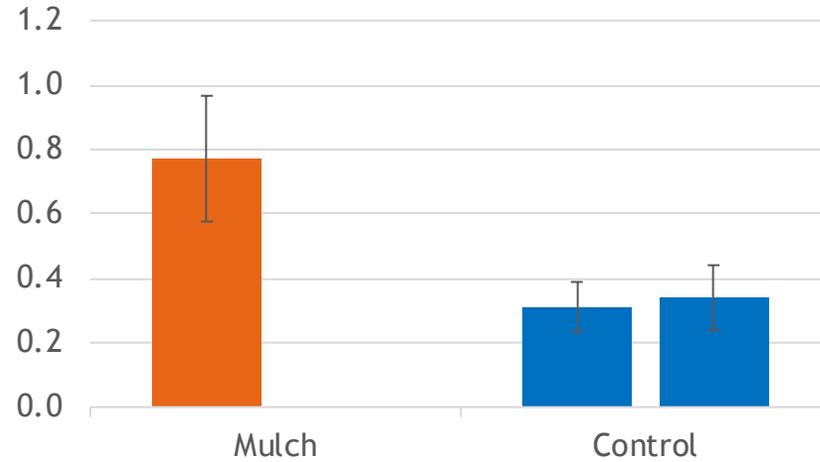


Higher crop yields for **mulch** than control

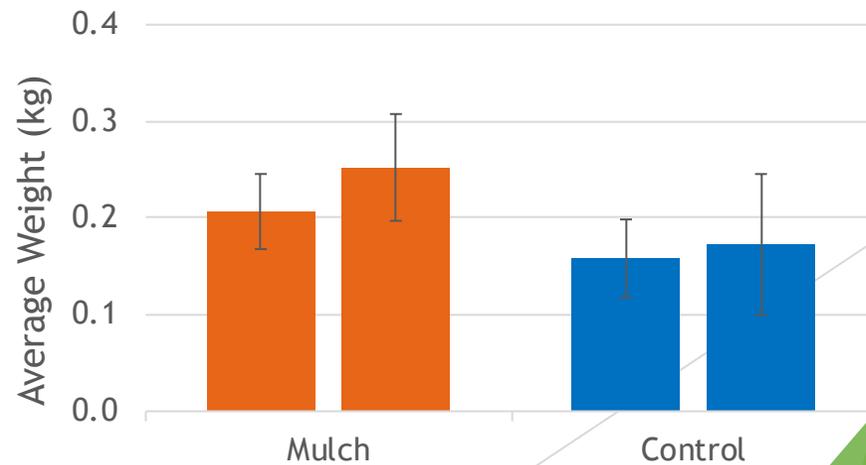
Bok Choy



Romaine



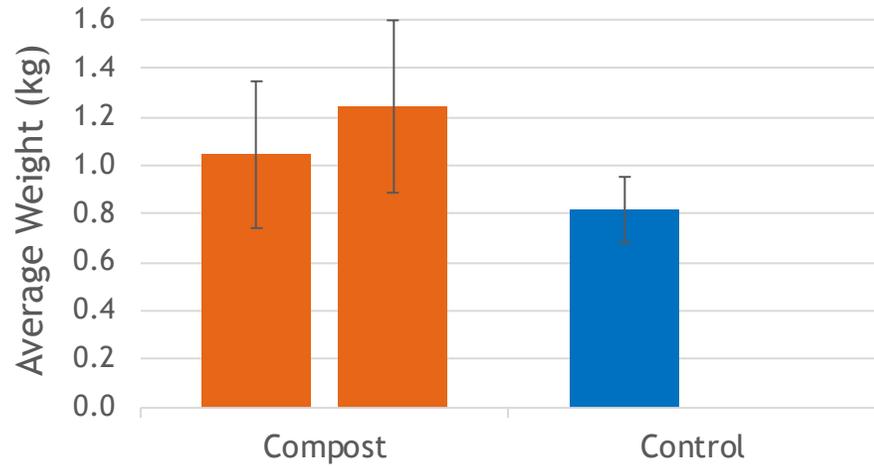
Broccoli



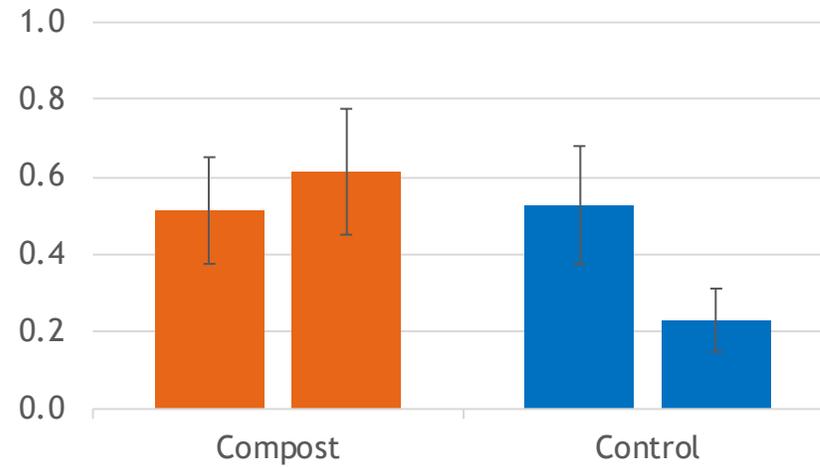
Mulch data for daikon is being processed

Higher crop yields for compost than control

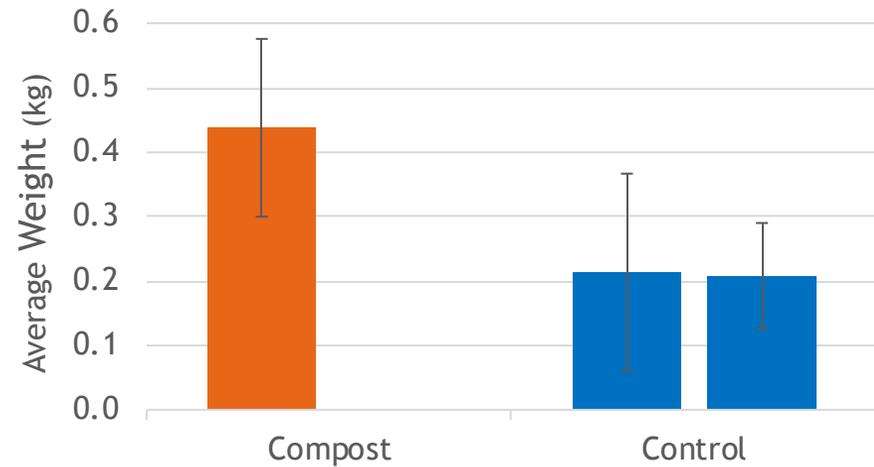
Bok Choy



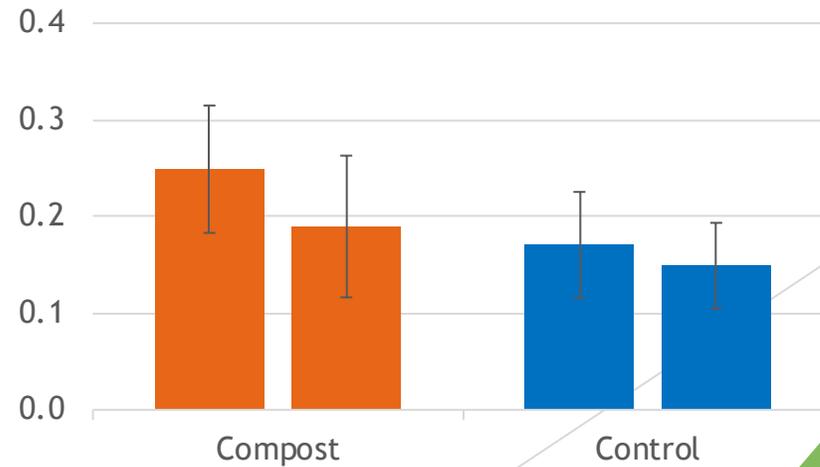
Romaine



Daikon



Broccoli



What's next?

How can carbon farming practices become mainstream and be scaled up?

What is the potential in offering Carbon Farm Plans?

How can we increase our support to farmers with implementation of these practices?

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Thank you

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