

Washington Tree Fruit Soil Health

Long Term Agroecological Research and Extension Site

Washington state produces 1/2 of apples in the US

WSU Wenatchee Tree Fruit Research and Extension Center - Sunrise Orchard



The Washington State Soil Health Initiative (WaSHI) is an ambitious plan that funds research, extension, and demonstration of soil health best management practices through a network of long-term agroecological research and extension (LTARE) sites across Washington state's diverse agricultural systems.

5 main objectives:

Establish best management practices

Reduce variability

Reduce fruit disorders

Test practices which buffer water stress

Manage soil borne disease



Apples and sweet cherries are a large driver of the economy in central Washington



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Core Objective:

Develop and evaluate management systems which optimize fruit yield and quality through sustainable soil health management practices.



WASHINGTON STATE UNIVERSITY



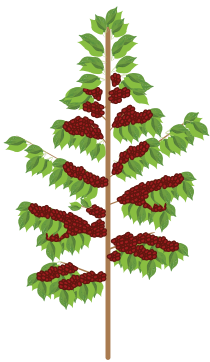
Washington State Department of Agriculture

Investigating practices to reduce variability, conserve water, and buffer environmental stress with organic matter applications

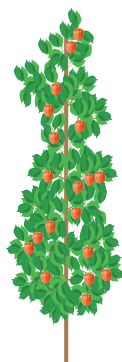
Apple Varieties: Honey Crisp & Gala

Cherry Variety: Skeena

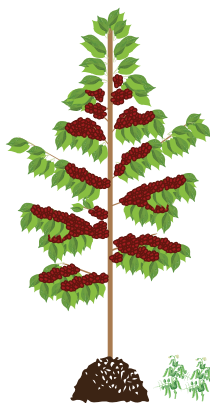
Standard



Typical synthetic nutrients and herbicides applied



Integrated Organic



Pre-plant compost application

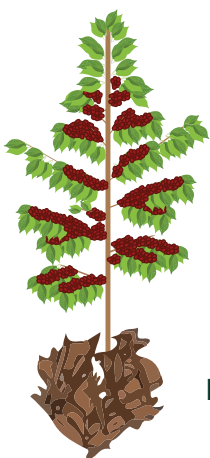


Alleyway cover and prunings mowed under trees

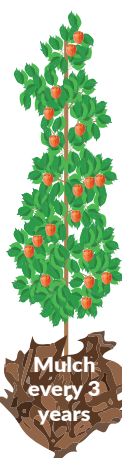


Spring forage pea planted in tree row

Mulch Additions

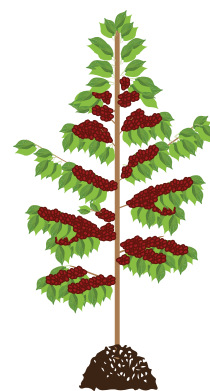


Typical synthetic nutrients and herbicides applied



Mulch every 3 years

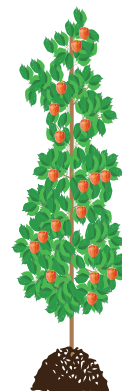
High Carbon Additions



Pre-plant compost application



Alleyway cover and prunings mowed under trees



Typical synthetic nutrients and herbicides applied

What is being measured at this LTARE?

Economic Performance



Carbon Stocks

Soil Health (Example metrics)

- Available water holding capacity
- Soil structure
- Carbon pools
- Biological activity
- Parasitic and beneficial nematodes
- Soil food web

Crop Performance

- Marketable Yield
- Fruit quality
- Disease incidence and severity

Root Health



Stay updated with WaSHI

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wasoilhealth.org

Learn more about soil health across Washington state in our roadmap



WASHINGTON SOIL HEALTH INITIATIVE ROADMAP 2021