



Dry farming refers to crop production during a dry season, utilizing the residual moisture in the soil from the rainy season, usually in a region that receives 20 inches or more of annual rainfall. Dry farming strategies will vary in different climates and soils to help grow food with less water.

Our food system has a water problem.

We depend on modern agriculture for the food we eat and yet modern agriculture consumes approximately 90% of all freshwater that is used globally.¹ This is especially the case in drought-prone, or seasonally-arid areas, where farmers tend to over-rely on modern irrigation practices, accelerating the depletion of waterways and aquifers, and decreasing food system resilience. Moreover, climate change is contributing to loss of freshwater due to hotter temperatures, more extreme droughts, and declines in snowpack.

For millennia, indigenous peoples have developed techniques and crop varieties to grow food within the constraints of their climate and soil — using little or no irrigation. To adapt to the current water crisis, we are exploring and reviving these old water-wise approaches and innovating them into the future.

At the Dry Farming Institute, we conduct dry farming research, promote education, and create marketing resources for food growers. Through collaboration with farmers, researchers, plant breeders, and chefs, we develop drought-resilient strategies to help our food system evolve.

¹ Hoekstra, Arjen Y., and Mesfin M. Mekonnen. 2012. "The Water Footprint of Humanity." *Proceedings of the National Academy of Sciences of the United States of America* 109 (9): 3232–37.



Dry Farming Explained

SPRING

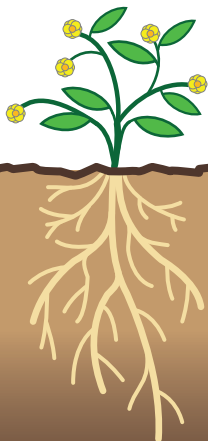
Early season planting into moist topsoil is essential for plant establishment.



Deep, water-holding soils can hold over 10 inches of plant-available water.

SUMMER

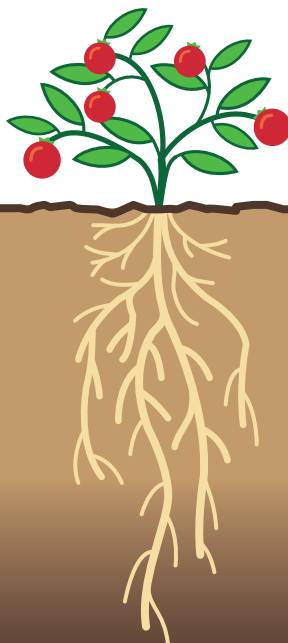
No irrigation during establishment ensures plants will root deeply to access subsoil moisture.



As the top soil becomes drier and water retreats, roots actively chase the available water lower down.

FALL

Suitable cultivars will efficiently use soil water to yield high quality produce.



Unrestricted roots will grow several feet deep to capture water throughout the soil profile.

▲ WATER SATURATION LEVEL

Our Mission:
To empower growers to thrive with less water.

Some common dry-farmed crops include:

- Tomatoes
- Potatoes
- Corn
- Beans
- Melons
- Squash
- Grapes
- Grains
- Orchard Crops



Roots from dry farmed tomatoes (left) compared to irrigated (right) shows increased root depth.

[OSU Dry Farming Project]



Roots & soil moisture observed, dry farm demo plot soil pit, August 2016.

[OSU Dry Farming Project]

Dry Farming Basics



DEEP SOILS

with high available water-holding capacity retain more water.



EARLY SOIL PREP

and planting allow plants' roots to penetrate deep into the soil.



SPECIFIC CULTIVARS

that are dry farm adapted or drought-tolerant will perform better.



LOW PLANTING DENSITY

and diligent weed control reduce plant competition for water.



SHALLOW CULTIVATION

or mulching prevents water loss from the topsoil.



INCREASED SOIL ORGANIC MATTER

and less soil disturbance improves soil health and water-holding capacity.



Who We Are

We are a group of farmers, scientists, entrepreneurs, and educators in the Pacific Northwest who are deeply motivated to find solutions to growing food in a hotter, drier climate.

We have multiple decades of experience in sustainable agriculture research and small-scale farming. We believe farmers are the ultimate knowledge-keepers and innovators that keep our food system strong and resilient.



Meet the DFI Board of Directors

Our Programs and Activities

THE DRY FARMING RESOURCE HUB



Enables growers to improve dry farming outcomes through:

- Engagement with growers for collaborative research and education about dry farming
- Freely-accessible online resources and educational materials about dry farming
- In-depth courses such as the [Dry Farming Accelerator Program](#)



Soil core analysis helps determine properties conducive to dry farming.



THE RESILIENT SEED STEWARDSHIP PROGRAM

Increases the accessibility of seed for crops that thrive when dry-farmed.

Program activities include:

- Adapting crop varieties to dry-farmed systems
- Maintaining the online [Dry Farming Seed Directory](#) to help farmers find seed from crop varieties that perform well when dry farmed.
- Partnering with local seed companies to improve resilient seed availability



MARKETING CAMPAIGN FOR DRY FARMED PRODUCE

Provides farmers with the tools and resources to market dry farmed produce, including:

- Marketing materials such as signs, handbills and “Dry Farmed” produce labels
- New marketing avenues with focus on the culinary value of dry farmed crops
- The [Dry Farmed Produce Directory](#) where dry-farmers can be listed as vendors



With your help, we can:

PRESERVE, ADAPT, AND
SHARE SEEDS FOR
DIVERSE, RESILIENT CROPS



SUPPORT
UNDERREPRESENTED
PEOPLE IN AGRICULTURE



BECOME A LEADING
DRY FARMING RESEARCH
INSTITUTE



MAKE DRY FARMING A
CORNERSTONE OF OUR
FOOD SYSTEM

- ✓ **Breed more diverse crops that thrive with less water**, including existing commercial crops, heirlooms and landraces.
- ✓ **Increase accessibility of resilient seeds to farmers** directly through our nonprofit, and through collaborations with seed companies.
- ✓ **Improve the livelihoods of people on land without water rights or limited water access** by facilitating adoption of dry farming practices.
- ✓ **Center indigenous knowledge and foodways** by promoting and supporting first peoples, traditional knowledge and first foods that are integral to the ecosystem.
- ✓ **Secure land and infrastructure** for long-term dry farming research and crop breeding.
- ✓ **Conduct cutting-edge dry farming research** including soil conservation and carbon sequestration practices that improve dry farming outcomes; exploring the potential of unconventional annual and perennial crops that thrive within our climate.
- ✓ **Launch a product labeling campaign** to increase consumer awareness of dry farmed produce and the benefits of dry farming.
- ✓ **Assess nutrition and flavor of produce** to substantiate knowledge that dry farmed produce can be healthier and tastier than irrigated produce
- ✓ **Develop economic strategies and incentives** for farmers to integrate dry farming into their operations where appropriate, through education and public advocacy work.



Together we can thrive with less water. Our future depends on it.