# Kasama Farm

Gresham, OR

## Western Water Resilience Case Study

Kasama Farm is a one-acre, no-till vegetable farm that grows Filipino, Southeast Asian, and East Asian crops for the diaspora, using traditional farming methods. They currently lease a quarter-acre plot at Headwaters Farm in Gresham, Oregon—a 10-acre incubator farm in the Portland Metro area. The site presents a mix of challenges, including heavy weed pressure, compacted soils, and a limited water supply for all farmers during the hot, dry summer months. Drawing from their experience with low-water and dry farming practices at their main farm in Hood River, they were motivated to explore how these techniques could perform in a more challenging, weed-prone environment. Farmers involved include Leilani Mroczkowski, Jihelah Greenwald, and Nae Nilo.

### Exploring Water Resilience: What was tried and learned

The season didn't go quite as planned. Most of the dry farmed melons and squash didn't make it; slugs and squash bugs took a serious toll, despite best efforts to manage the pests. But not everything struggled. The drought-adapted corn thrived, standing tall in the heat with minimal water. The straw mulch was a quiet hero, holding onto moisture, keeping weeds at bay, and offering a welcome, plastic-free alternative. While there weren't enough melons or squash to bring to market, a few determined plants survived. At the end-of-season demo tour, those survivors became seed, saved by the community. The tenacious few that made it will help shape the next season; stronger, more resilient, and better adapted to the challenges ahead.

## Farm at-a-glance

**TYPE**
Vegetable production

**AVERAGE ANNUAL PRECIPITATION**
48.9 inches

**SOIL TYPE**
Cornelius silt loam

Available water holding capacity: 12 inches

**CROPS**
Vegetables

**FARM SIZE**
1 acres total with ¼ acre at Headwaters Incubator farm

**LAND TENURE**
Leasing ¼ acre from East Multnomah Soil and Water Conservation District

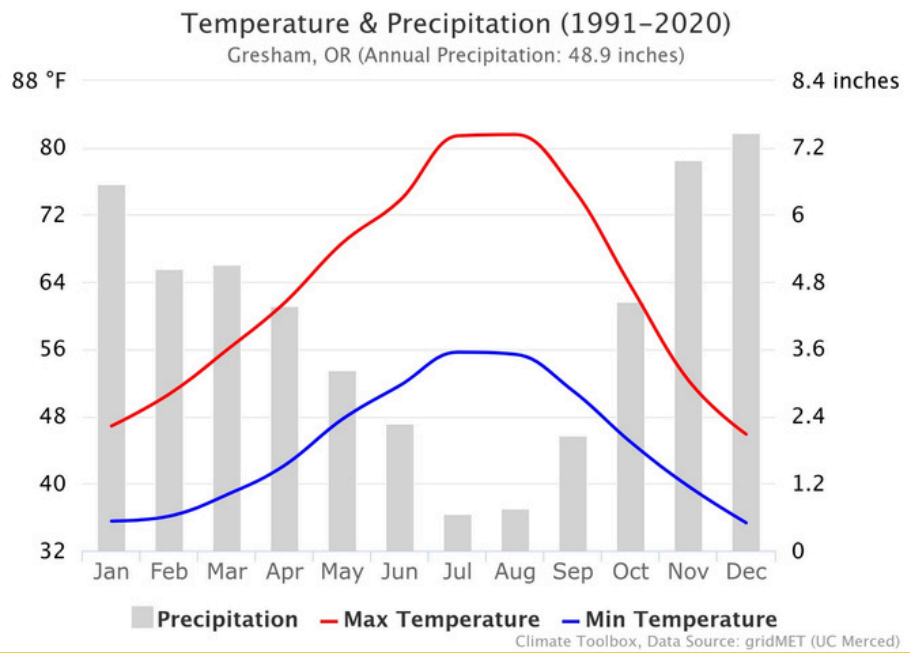
**2024 WATER RESILIENCE EXPLORATIONS**
Dry farming
Intercropping
Organic mulch

## Understanding Context: Water, Climate, and Soil

Water has been a constant challenge at the site, especially during the peak of vegetable season when the hot, dry summers hit. The farm is part of a shared incubator site with up to 11 other farmers, which means there's often not enough water pressure to go around. On the hottest days, it's particularly tough. Farmers take turns using the irrigation system, signing up on a shared board and waiting their turn to water.

Water and utility costs are included in the land lease—starting at a discounted rate for beginning farmers and gradually increasing over time, eventually reaching up to $750 per acre per year.

### Temperature & Precipitation




The site was historically a commercial nursery and struggles with low soil biology, compaction, and heavy weed pressure. A five-foot soil core taken early in the season offered a fresh perspective, revealing good parent material beneath the surface. The farmers think that the low yields experienced across the farm are likely due more to poor soil biology than to structural issues.

Dry farming had been discouraged by the site manager due to concerns about a restrictive clay layer (fragipan), but the core showed that layer was nearly four feet down—deeper than expected and less of a barrier than feared.

In winter, the compacted soil turns to thick mud, with water pooling across the site. These conditions underscore the need for strategies that build soil health to improve water infiltration and year-round resilience.

A highlight of the season was the in-depth soil assessment, which offered a new lens on both soil health and the broader landscape. For these growers, accustomed to focusing on the health of individual plants, from root hairs to leaf color, stepping back to consider the full system topography alongside a soil specialist sparked new insights: "*Having a broader view of everything was helpful to widening my skills as a farmer.*"

### Soil Health Practices & Preparation

Building soil biology through low-tillage practices is a central focus. With the added challenge of high weed pressure, they've been experimenting with dry farming as a way to suppress weeds—less water, fewer weeds.

To prepare the site, the team used a winter rye cover crop and terminated the crop by mowing and with a shallow pass with a power harrow.

They raked and used a scuffle hoe where it was needed to remove large rye stalks from the bed tops. Additional weed abatement included using scuffle hoes in the spring to remove the first round of annual weeds.

Larger perennial weeds like blackberry and bunch grasses were removed with shovels, and they mowed with a push mower in the aisles to maintain the pathways.

## Water Resilient Strategies Explored in 2024:

### Dry farming and Intercropping

After transplanting, the team ran drip lines for a couple of hours to water the plants in, then shut the system off entirely. From that point forward, the crops were left to grow without any additional water.

The field offered a natural testing ground, with two distinct microclimates. One half was exposed to intense sun and a strong crosswind, while the other was shaded and protected by a windbreak. The contrast created a clear drying effect on the sunnier side, and the farmers were curious to see how these conditions would influence crop performance without irrigation.

Interestingly, the sun-exposed section outperformed the shaded half. While the reasons aren't entirely clear, there's speculation that the soil on that side was enriched by a previous grower who had installed a greenhouse and added significant amounts of compost. That added fertility may have tipped the balance in favor of better crop health under dry conditions.

## Key Findings

**Corn** turned out to be one of the most successful dry-farmed crops. Both Dakota Black and Open Oak Party Mix varieties grew well in the sunnier, likely more fertile part of the field. These plants held up through the season with minimal insect pressure and produced enough seed to save for next year. To support the corn mid-season, the farmers applied a foliar spray of magnesium and boron to address early signs of nutrient stress.

Other crops didn't fare as well. **Squash** were decimated by squash bugs (even with insect netting!), and **melons** were eaten by slugs in their early stages. While some plants survived the summer without irrigation, few produced a viable yield.

**Soybeans** had mixed results. While plants were smaller and yielded less than typical irrigated crops, they still managed to produce enough to collect seed. Among the varieties, Chiba Green stood out as the most productive, followed by the hardy Chiba Black. The other varieties were less prolific.

The 4-innch deep layer of organic **straw mulch** was a success holding onto moisture, keeping weeds at bay, and offering a welcome, plastic-free alternative.

The season closed with a community demonstration tour focused on developing **seed-saving** practices. By saving seeds from the few plants that withstood challenging conditions, the farmers were able to transform the crop failure into an opportunity, as the few plants that survived under tough conditions may be the key to stronger, more resilient crops in the future

## Looking Forward

One takeaway was clear: this site may be better suited for fall and winter production. With its compacted soils and intense summer conditions, spring and summer presented significant challenges. Cooler seasons might offer more favorable conditions and fewer pressures from heat, weeds, and water scarcity.

Looking ahead, the farm team plans to keep experimenting with strategies that reduce water use and build long-term health in their system. That includes minimizing irrigation where possible, encouraging deeper root growth early in the season, and expanding straw mulching to retain moisture and suppress weeds. They also saved seed from the crops grown at Headwaters Farm in 2024 and look forward to seeing if these adapted seeds lead to increased yields over time.

## For More Information:

Dry Farming Institute Case Studies

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