

## **Dry Farm Perennial Systems Meeting**

July 25, 2017

**Purpose:** Bring together people with dry farming and/or perennial systems expertise to discuss interests, needs, ideas and potential collaborations.

**Attendees:** Amy Garrett, Dana Kristal, Heidi Noordijk, Victoria Martinez, Nick Routledge, Jeff Choate, Nik Wiman, Andrew Schwarz, Dan Schuler, Javier Fernandez-Salvador

### **Agenda**

- Introductions – experience and interest in dry farming and/or perennial systems
- Issues and common questions
- Ideas – resources, research, collaboration

### **Introductions**

- Amy Garrett – OSU Extension Small Farms Dry Farming Project Leader. Interest in facilitating the development of more dry farming resources to assist farmers all over the maritime Pacific Northwest in making decisions about dry farmed crop production (annual and perennial) from site assessment and management practices to crop varietal selection.
- Dana Kristal – OSU Extension Small Farms Program at Southern Oregon Research and Extension Center, host dry farm trial in 2016 and 2017 (tomatoes, melons, potatoes, squash, zucchini...), interest in dry farmed perennial systems
- Heidi Noordijk - OSU Extension Small Farms Program at North Willamette Research and Extension Center, hosted dry farm trial in 2016 (tomatoes, melon, potatoes), extension tree fruit knowledge and background.
- Victoria Martinez (AnOvation Group LLC) – Grew up around indigenous dry farmed systems, has minimally irrigated backyard orchard, and has been involved in the strategic planning and development of the Dry Farming Collaborative.
- Nick Routledge – leader in the Agrarian Sharing Network that has been working with tree fruit for more than a decade and have extensive knowledge and access to varieties that do well in our bioregion. Interested in ecological resilience and determining what varieties hold promise for our bioregion.
- Jeff Choate – Lane County OSU Horticulture Extension that has been working with tree fruit for more than 20 years and also has experience and background in irrigation efficiency research and management.
- Nik Wiman – OSU Extension Tree Fruit Specialist doing research with hazelnuts and cider apples at the North Willamette Research and Extension Center. Has seen impacts of drought, and noted that there are no good guidebooks on establishing a dry farmed orchard.
- Andrew Schwarz – has dry farmed orchard (mostly apples) in its' 3rd year down in the Applegate Valley (Ridgeline Meadow Farm) on a Central Point Sandy Loam and worked with Jacques Neukom (experienced dry farm orchardist in Willow Creek, CA) for several years. He irrigated in his orchard and hasn't irrigated since.

- Dan Schüler – establishing dry farmed orchard (apples and plums) in Springfield at Moondogs Farm on a Cloquato silty loam, and hosting a trial and field day with the Dry Farming Collaborative in 2017. Interest in exploring the role of companion planting and cover crop options for dry farmed orchards.
- Javier Fernandez-Salvador – OSU Extension Small Farms Program in Marion and Polk county, berry crop production expertise and interest dry farmed raspberry/blackberry systems with cover cropping and dry farmed olives. Planning to seek grant funding to support dry farmed olive research and establishing a total of 4 acres of dry farmed olives at two sites in the Willamette Valley.

## Notes

Most rootstocks are M-111 (15-25 feet in height)

Interest in ecological resilience for horticultural crops

Topics of interest and resources needed on:

- Soils
- Site preparation
- Nursery availability
- Establishment and timing
- Spacing
- Rootstocks – which ones are most conducive to dry farming (e.g. deep, tap rooted nature) and where are they available?
- Pruning, thinning
- Varieties
- Weed Control
- Disease and Pest Pressure
- Storage Quality and Flavor (storage less nitrogen)
- Advantages
- Marketing flavor

Side discharge flail mower used in orchards for mulching in row.

Timing for reduced irrigation -Trees need water after bloom for cell division, but it can be withheld later in summer. “The trick is to slow down shoot growth of the tree without affecting fruit size.”

Andrew has the most experience of attendees in managing a dry farmed orchard. Notes about his system:

- Would have liked to start with deep tillage (ripper bar or shenk) and cover crops but got started right away at his site. Ideal time for planting is the fall, but Andrew planted in February.
- Soil Type: Central Point sandy loam
- Used auger to drill 2-foot deep holes for planting
- Planted bare root, 5/8<sup>th</sup> caliper.

- Amended with Azomite, calcium and pruned to a twig in year 1 and 2
- Establish dust mulch after planting
- Planted cover crop in the fall
  - Oats and rye cover crop in 1<sup>st</sup> year
  - Peaceful valley soil builder in year 2 on (peas, vetch, oats and rye) – planted with hand spreader and disced in late October.
- Pruned off most things, tying down trees to get earlier fruit set
- Watered trees in the first year
- Ideal spacing 16 x 16, but Andrew planted at 8' x 16' with the plan to harvest from every other tree in year 3 and then thin to 16' x 16'
- Pest issues: fire blight

Dan Schuler has buckwheat, sudan mix planted where his orchard will be planted this fall (plums and apples). This cover has received one rain and is looking great. Interest in living mulches for dry farmed systems.

- Opportunity to case study Dan's dry farmed orchard from establishment on

### **Issues and Common Questions**

There are no good resources on establishing a dry farmed orchard.

What are the varieties and rootstock most conducive for dry farming?

What soil types support dry farming?

What role can companion planting and cover cropping play in a dry farmed orchard system?

What are the best options for a middle ground? Timing and method for reduced irrigation?

How to prepare and manage risk in extreme years?

### **Ideas for resources, research, opportunities**

What resources are available or info could be gleaned from Italy and other countries with like or even drier climates?

Categorizing rootstocks available by vigor and rooting pattern (taprootedness) – to assist dry farmers to select rootstocks that are more likely to be successful in dry farmed system.

Potential Collaboration/Resources with authors of new extension publication, [Advances in Dryland Farming in the Inland Pacific Northwest](#) (EM 108)

David Granastein (WSU Extension) has dryland farming and orchard management background.

Devon Penã – WSU Professor of Anthropology

Maziar Kandelous – OSU Professor, Soil Water Quality Specialist – working on decision-making model that integrates soils, fertilization, irrigation, and pest control

Research the economics of dry farmed orchard - Cost-study, inputs eliminated, what yield decrease will you see.

- AgBizLogic (Clark Seavert) - advanced enterprise budgeting tool that has the ability to customize number for your situation – potentially pilot this tool in dry farmed orchard system

Western SARE Prof + Producer Grant - case study dry farmed orchards in our region for 'Dry Farming in the maritime Pacific Northwest' extension publication series. Monitor tree growth and vigor in newly established dry farmed orchard

- Javier Fernandez-Salvador – applying for this grant to research dry farmed olives. Potential collaboration?