

1855 Tomales Road  
Petaluma,  
California

# *Little Organic Farm*



Dry Farming Method for Potato Production  
*Rhianna Frank*

## *Background:*

David Little is a third generation roofer that was born in Marin County and was raised in San Anselmo. He fell in love with farming while helping out on his friend's ranch in West Marin and has been growing his own potato crops since 1995. He sought out the wisdom of organic farmers to help educate him about farming but was introduced to the method of dry farming "through the school of hard knocks" when his water truck broke down during one of his primary years. He was cultivating a small field of tomatoes at the time and thought that he was going to lose the crop when he noticed that "their vines started coming back". When it came time to harvest, the tomatoes "didn't look so good but produced the most wonderful taste"; this same crop of tomatoes was featured on the Martha Stewart show which made David want to learn more about dry farming. Currently, David has approximately forty acres which he uses for cultivating a variety of certified organic crops, such as potatoes, tomatoes, strawberries, squash, broccoli, kale and chard. Although he has had success at growing an assortment of crops, his primary focus is his selection of over twenty varieties of dry farmed potatoes. He chose to concentrate on potatoes because West Marin has a history of cultivating dry farmed potatoes.



## *Dry Farming:*

According to David Little, dry farming is a set of soil tillage techniques that are used to control the moisture content in any given soil condition or micro climate. He suggests that if you have a flat area of land or a valley below a hill that has natural sources of water that travel through the hill and into your field most of the season, you might want to use a technique of disking, then plowing, then disking again or rototilling to get the desired results.

He also states that if you're growing on top of the hill, you would most definitely use the previous methods and then for a final application you would go over the field with a disk and roller. This will create a crust that retains the moisture for longer periods of time. He likes to use the example of a cookie sheet with water on it: if you place a sponge on the cookie sheet and cover it with plastic, the water will remain in the sponge without evaporating for a longer period of time. He says that the cookie sheet is the field, the sponge is the part of the field that you work up with the disk or rototiller and the plastic is the roller. Additionally, the specific types of crops should be considered individually because different crops require different applications. For example, if you're planting tomatoes, you would use a roller because tomato plants have longer roots and require longer sustained moisture. Alternatively, if you are planting potatoes he suggests not using the roller but leaving the soil "open slightly" so the potatoes grow in a moist soil that becomes drier over time. Another aspect to dry farming that most people don't consider are the effects that phases of the moon have on the water table: a full moon will pull moisture up and make it more accessible while a waning moon will make it

less so. The coastal climate is beneficial for dry farming and the influences of the fog and moisture are also important; although, he states that you could get great results inland as well. The results may not be identical but you would achieve some degree of water conservation.

Determination of specific techniques to use depends on the type of vegetation being planted, soil, climate and the desired results of the farmer. Techniques that may be used in the modern system of dry farming include: bunding, strip cropping, seasonal fallowing, mulching and considerations to timing and depth of plowing.

### *Specific Tillage Techniques Used on Little Organic Farm:*

**Disking:** a plowing technique that uses concave circular steel blades to break up surface crust and residue of soil which can help control the growth of weeds. This technique can be used as a primary or secondary procedure.

**Rolling:** a tool used for “flattening land or breaking up large clumps of soil, especially after plowing,” reducing potential moisture loss while making harvesting and weed control easier by “sealing” the top layer of soil.

**Dust Mulching:** a layer of dry surface soil, which is cultivated to trap moisture of soil layers underneath.

**Plowing:** a technique primarily used to blend the top layers of soil with nutrients from underneath while burying weeds and crop debris.

**Rototilling:** a process of using a motorized garden tiller to break up and turn over the soil in order to prepare it for planting seeds

# *Ideal Conditions:*

## *Climate:*

Dry farming can be used in a variety of climates with modest precipitation; however, David believes that the Northern California coast is the perfect climate for dry farming due to its seasonal precipitation, temperate summers and ample fog which regularly replenishes the moisture in the soil. The climate of this coast is similar to that found in the Mediterranean regions where this technique has been used to grow grapes and olives for thousands of years (CAWSI).

## *Soil:*

According to David, dry farming works best in sandy loam soils due to their ability to retain water. Sandy loam soils tend to be 40% sand, 40% silt and 20% clay and “generally contain more nutrients, moisture and humus than sandy soils, have better drainage and infiltration of water and air than silty soils, and are easier to till than clay soils” (Wikipedia). David amends his soil with compost to help nurture root growth and plants cover crops to increase nitrogen content in the soil.

## *Vegetation:*

Dry farming works best with plants that are drought tolerant with growth cycles that have adapted to limited water resources; such adaptations include deep extensive root systems that have the “ability to gather water over a wide area” (Creswell). Adaptive plants may also have waxy or small leaves to “protect from water loss”. Potatoes work well with dry farming

because they have a “very aggressive root system” (The Natural Gardening Company) and do really well in dry soil. When potatoes are stressed from lack of water the size and yield declines but the skin becomes thicker and the potato is more flavorful.

### *Pest Management:*

David takes a “live and let live” stance on pest management; however, he has been known to use gopher traps from time to time. He prefers to use beneficial insects, such as lady bugs and he has discovered from years of farming that aphids prefer kale to most of his other crops and he will often times plant some kale amidst his crops to distract the aphids. Additionally, he rotates his crops to reduce any potential outbreaks of viruses, molds, blights, and selective insect pests. When crops are consistently planted in the same place, it increases the chances for “pest build-up”.

### *Types of Potatoes Grown on Little Organic Farm:*

**Yellow Flesh Potatoes:** *Carola, Yukon Gold, Yellow Finn, German Butterball, Red Gold, Nicola Markie’s*

**White Flesh Potatoes:** *White Rose, Katahdin, Russet Norkotah, Red Lasota, Kennebec, Purple Viking, Maris Piper*

**Purple Flesh Potatoes:** *All Blue, Purple Peruvian*

**Red Flesh Potatoes:** *Mountain Rose*

**Fingerling Potatoes:** *Russian Banana, Rose Fin Apple, French, Princess Larate, Ozette*



## *Quality and Yield:*

David estimates that he harvests approximately 7,000 pounds of potatoes per acre which he says is less than conventional farmers; however, the quality of his product is superior to conventional potatoes. The skin of dry farmed potatoes tends to be thicker and the flavor is more concentrated which has enabled David to sell his potatoes to several prestigious restaurants and high-end markets. The market price of his potatoes is about \$2.50 per pound which is an increase when compared to prices of conventional potatoes from markets from the same locale which range from \$1.49 to \$1.99. David believes that this may make his potatoes a hard sell unless the customers are willing to pay for quality and appreciate the ethical value of his work. Fortunately, consumers are increasingly choosing to purchase food that is locally and sustainably grown.



*Restaurants and Markets that Feature  
Little Organic Farm Potatoes:*

*Restaurants:*

*Napa:* French Laundry, Bardessono, Redd, Auberge  
Du Soleil, Don Giovanni, Angele, Solage, Martini  
House, Jole, Trinchero

*San Francisco:* Abbot's Cellar, Greens, Millennium,  
Quince, Range, Delfina, A-16, Jardiniere, One Market,  
Market Bar, Zuni, Coi, Manresa, Waterbar

*Markets:*

*Whole Foods:* Sebastopol, Santa Rosa, Petaluma, Mill  
Valley, San Rafael, Berkeley

*Monterey Market:* Berkeley

*Market Hall:* Oakland

*Bí-Ríte:* San Francisco

*Good Earth:* Fairfax

*Comforts:* San Anselmo



## *Resources Cited:*

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