

High County Conservation



2016

LARAMIE RIVERS CONSERVATION DISTRICT

Winter Edition

LRCO Annual Tree Sale - By Martin Curry



Laramie Rivers Conservation District will host their 29th annual tree sale on **May 6th and 7th**, 2016 at the Albany County Fairgrounds. I would like to encourage all those that are interested in our tree sale to place their orders as soon as possible. Some of the species that we have listed may be in high demand, so the sooner you order the better the chance we can fulfill your request. The deadline for turning-in pre-order forms is **March 31st**.



An example of a shrub that does very well in our climate is the Golden current (*Ribes aureum*). The growth form is round to irregular to a height of 7 feet and a spread of 3 feet, is rapid growing, and does best in moist soils. In the spring will have showy yellow flowers and fall foliage is red to orange. The fruit is edible and preserves very well. Golden Current is a native shrub to our area.

I would also like to remind everybody that this is a good time to purchase tree survival aids such as weed barrier, hydro-source and fertilizer. Tree orders can be mailed or placed in person at 5015 Stone Rd. We will also accept orders via telephone. If you are you interested in installing a Living Snow Fence, there is still time to apply for a Cost Share. The deadline for the LSF application is March 1st. For more information contact Martin Curry at 307-721-0072 Ext. 109.

Cost Share for Raised Garden Beds - by Trish Penny

Are you interested in starting a vegetable garden? Our Cost Share program can assist with construction costs for raised beds. These beds are above the surface of the ground and are supported by some sort of frame or enclosure. You can design them with a trellis for vining crops or netting to keep the birds away.

Using raised beds for gardening has many benefits:

- Improved Soil composition due to better control over soil texture, better overall drainage, and no compaction since you are not walking on the soil inside the bed. Soils in a raised bed will also warm up faster allowing you to plant sooner.
- Less maintenance and weeding when using good quality soil. Just be careful choosing manure or compost and use sources that have tested weed-free.
- Accessibility – the height of the bed is helpful when inspecting your plants for insects, disease, watering and harvesting. This can be a great benefit to anyone with physical limitations.
- Higher yields – since you are using quality products in your beds, the amount of vegetables you can harvest increases.
- Extended Season—Installing hoops and/or blanket covers to the beds protects crops from frost.
- Portability - they can be moved if necessary.

Some suggestions from my experience are:

- ◇ Build side height between 16.5"-22" tall.
- ◇ Add mulch to retain moisture because raised beds tend to drain faster than conventional beds and Wyoming winds dry the soil.
- ◇ Install a heavy galvanized wire bottom or fill the bed with 3-4 inches of 1 ¼+ crushed gravel before adding the soil to discourage pests, such as pocket gopher or rabbits. This is not a guarantee that these animals won't find their way into your vegetables but it does help to minimize their impact.

The Regular Cost Share program reimburses up to 50% on raised beds and approved gardening supplies (\$1000 max). Garden plans and budget must be pre-approved by LRCO staff. If you are interested in building a raised bed please contact Trish Penny at 721-0072 Ext. 108.



Refinery/Yttrium Plant Reclamation Update



It has been four years since LRCD first purchased the 5.6 acre Midwest Refinery site on N. Cedar Street. In that time we have engaged the EPA

and Wyoming DEQ to have the property extensively characterized to determine what needs to be done to ensure public safety and the safety of those who might someday work on or live near the property. In 2014 we partnered with City to obtain a federal grant to have the buildings demolished and removed on the north half of the property. Since then we have been waiting for WYDOT to purchase the southern half of the property for the landing of the new Harney Street Viaduct which will end at a new stoplight on Cedar. WYDOT completed the purchase in December 2015 and they should demolish the rest of the structures this coming summer for bridge construction in 2017.



Meanwhile, we will be moving forward with the \$200K EPA Brownfield cleanup grant later in the summer. Cleanup activities will include excavating and backfilling the most contaminated soil areas and capping the entire property with more impermeable soil (than the gravelly native floodplain soils) to prevent further leaching of contaminants into the shallow water table. Please stay tuned to our newsletter, our Facebook page or the local newspaper for public announcements regarding the cleanup.



ZUCCHINI ISSUES

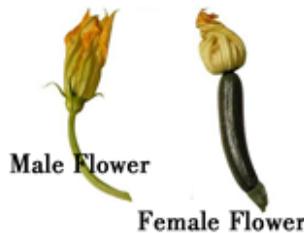
By Trish Penny



Normally, zucchini grows very well in our area, but last year there were a few problems. In addition to the shorter growing season, limited rainfall and alkaline soils, there may have been additional reasons zucchinis were withering and dropping off the plant at a very young stage or showing signs of blossom rot.

- ◆ Amend the soils with at least six inches of quality compost or well aged manure before you begin gardening. Annually thereafter, dig an additional two inches of compost into your soil. This will help to improve drainage and fertility.
- ◆ Is the variety of zucchini appropriate for our climate and conditions? Look at the seed packet and see how much time the fruit takes to mature. The Hardiness zone for Laramie is Zone 4B. I think you will have more luck with plants suitable for 4A and 3. We have approximately 90 days of growing season. Part of the time frost protectors will be needed.
- ◆ Drip irrigation and soaker hoses conserve water by delivering it right to the plants' roots. Water early in the morning before the heat of the day. Keep about 1 inch of the soil evenly moist and remember to mulch to retain moisture.

- ◆ Zucchini is a monoecious plant, meaning each plant has both male and female flowers. A female flower has a small swelling (the ovary) at the base of its short-stem. A male flower has a long, thin stem. Plants will drop the small zucchinis that do not get pollinated. Either plant more flowers to attract pollinators or do the pollinating yourself. Use a Q-Tip or small paintbrush



and transfer pollen from the male bloom to the golden stigma of the female flower. If the plant canopy is too dense for pollinating insects to get to the blooms, prune some of the leaves to open up the plant.

- ◆ Insecticides can eliminate pollinating insects.
- ◆ Zucchini are considered heavy feeders and may need additional fish or kelp fertilizer (high in phosphorous). Stay away from fertilizer high in nitrogen because it may diminish your yield.
- ◆ The plant will abort some fruit if there are more than the plant is able to support.
- ◆ Blossom-end rot can be caused by irregular watering and poor water uptake caused by a soil calcium deficiency. Use ground oyster shell or calcium rich fertilizer.



FYI: In addition to the squash fruit, small tender leaves and blossoms are edible.



Soil Health Principles for Producers

Roger Stockton, Ph.D. Crop Physiology and Production
Wyoming NRCS State Agronomist
307-233-6767 roger.stockton@wy.usda.gov

THE REASONS FOR INCREASED PLANT DIVERSITY

Synergism can be defined as two or more organisms sharing resources for mutual benefit. As an example legumes give carbohydrates (sugars) and a home (nodule) to rhizobia (bacteria) which give nitrogen to the legume. The seedling legume exudes a chemical signal in the soil which the rhizobia respond to with their own chemical signal to the legume. The legume builds the first nodules before the bacteria arrive.

All plants “leak” carbohydrates from roots into surrounding soil to attract beneficial microbes because it takes less energy than growing extra root

length to explore the rhizosphere and because the beneficial microbes help defend against pathogenic microbes. Different species of plants attract different species of microbes. The microbes help bring water and nutrition into the plant root. Mycorrhizal fungi form networks that extend in all directions from the plant 10 to 20 times further than the root could grow. The fungi are small enough diameter to extract water and nutrients from soil micropores that roots would be too large to enter. The fungi have a phosphatase enzyme that allows them to release phosphate from chemical compounds that immobilize it in higher pH soils. Several sources report that the global supply of phosphate fertilizer will be exhausted before the year 2050.

Nature works best in diverse plant cultures (native range has 50 to 500 species growing on one section). We have forced monoculture of one or a few crops to be able to harvest a salable commodity. We need to increase plant species diversity in crop rotations to stimulate microbial diversity in the soil. That diversity will ensure dependable nutrient cycling from residues, increase soil aggregate stability, improve soil structure, improve water infiltration, and improve soil water holding capacity (SWC). Because the number of commodity crops is limited by our geography, the most efficient way to increase species diversity is with multi-species cover crops. A typical mix might include two legumes, two grasses, and brassicas (turnips, radishes, rape seed) and should cost around \$30/a. The legume N production can range from 50 to 150 lb./a (multiply this by the local price of N fertilizer). Commercial fertilizers are all salts, which degrade soil health and many of our soils are naturally high in salt.

THE REASONS TO LIMIT SOIL DISTURBANCE

We were taught that we had to till soil to “open it up for water infiltration” and weed control. Tillage destroys soil structure, decreasing pore space in the soil and allowing it to become compacted after a rainfall event. This happens because tillage breaks soil structure which allows microbial access to the organic glues that held the soil particles together and an improved oxygen supply from the tillage. Tillage also speeds residue decomposition which increases erosion on fragile soils. Tillage also destroys fungal populations by fracturing their networks.

THE REASONS TO KEEP LIVE ROOTS IN THE SOIL AS MUCH AS POSSIBLE

Live roots feed the soil biology to keep it healthy and active. The amount of carbohydrate they exude into the soil can be as much as 1/3 of total carbohydrate produced by the plant. It quickly becomes stable organic matter, which can increase SWC. Organic matter in the top two to three inches of the soil came from plant residues, OM deeper than that came from root exudates.

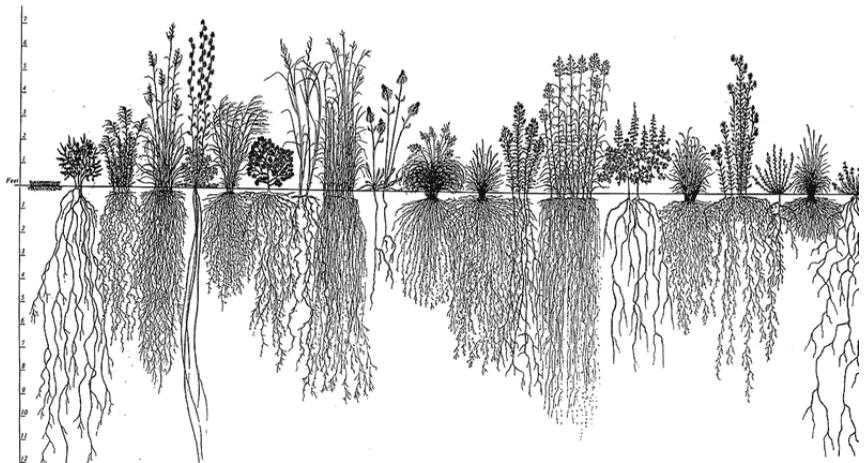
REASONS TO KEEP SOIL SURFACE COVERED WITH RESIDUE and/or LIVING PLANT CANOPY

Residue decreases evaporation by 2 to 5 inches/year. It keeps soil temperatures 5 to 10 degrees cooler in the summer. It reduces or eliminates soil erosion from wind and water. Living plant canopy can decrease

summer soil temperatures by 20 to 30 degrees, which keeps the soil biology healthier and decreases evaporation associated with higher soil temperatures. Each inch of evaporation that is saved is one more inch of available plant transpiration (growth and yield).

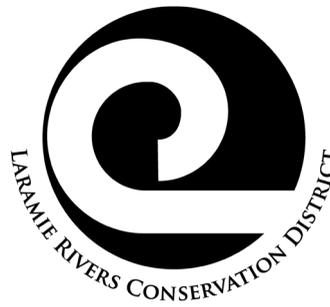
Improving soil health allows the producer to reduce input costs, which are mostly tied to petroleum and will not get any cheaper in the foreseeable future. It is one of the few opportunities to improve profitability and sustainability for the agricultural producer.

For more information about soils you can go to the website www.nrcs.usda.gov/wps/portal/nrcs/site/soils/home/ or stop by the Laramie field office located at 5015 Stone Road. Phone 307-745-3698.



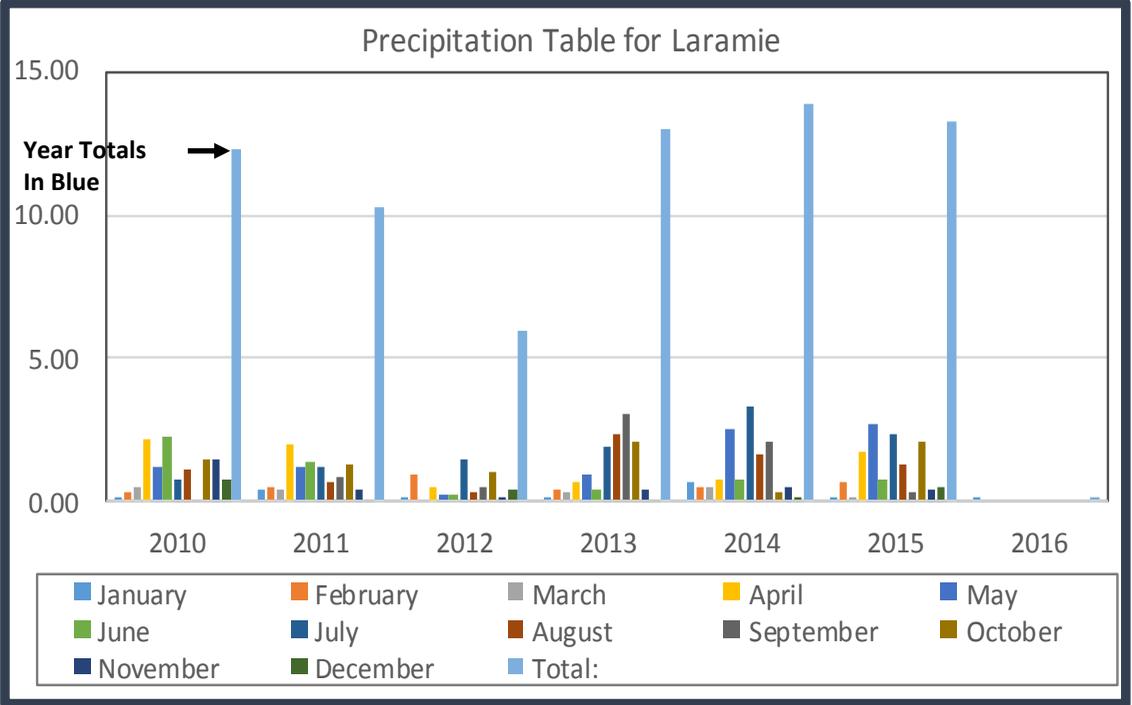
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**LARAMIE RIVERS
CONSERVATION DISTRICT**
5015 STONE ROAD
LARAMIE, WY 82070
PHONE: (307) 721-0072



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Take advantage of our newest Cost Share grant!!

Soil, Water, and Plant Analysis
Cost-Share Program

This program provides incentive for residents to understand their natural resources by cost sharing on expenses for tests at recognized analytical labs

Who is Eligible?: Albany county residents, businesses, and land-owners

Project Examples

- ⇒ Soil testing for gardens or crops, for nutrient information or contamination
- ⇒ Potable water tests
- ⇒ Trace metals in water
- ⇒ Irrigation/livestock water testing
- ⇒ Forage testing for nutritional value

50% Cost Share for test costs.
Please call for more info 721-0072