EXTENSION
UtahStateUniversity

vegetable IPM ADVISORY

UTAH PESTS

Pest and Production Update, Utah State University Extension, **April 22, 2016**

Production

Too Busy to Plant Your Garden? Consider a Cover Crop.

Are you feeling overwhelmed by the thought of planning your garden this year? Or will you be leaving a portion of your field or garden empty? Consider planting a cover crop. Cover crops have many soil health benefits. Utah soils are inherently low in organic matter which results in poor soil structure, water holding capacity, tilth (ease of tilling), and water infiltration and percolation.

Cover crops are grown for the purpose of being incorporated back into the soil to increase organic matter levels. They also aid in control of erosion, weeds, insects, and diseases, and prevent compaction. The benefits don't end there, cover crops provide a habitat for beneficial insects, improve soil fertility, stimulate soil biological activity, penetrate hard pans, and absorb and help to recycle plant nutrients, especially nitrogen, between growing seasons. Cover crops have also been shown to increase crop yields and exhibit resilience to erratic and increasingly intensive rainfall or drought conditions. They are affordable (save money on fertilizers, herbicides, etc.) and provide an organic option for soil fertility.

Jennifer Reeve, USU associate professor of organic and sustainable agriculture and the faculty advisor for the USU Student Organic Farm in Logan, UT, gave us insight on how the Student Organic Farm keeps their soil healthy with cover crops.

Hairy vetch (*Vicia villosa*)

> The Student Organic Farm uses fall and summer cover crops. Our fall cover crop is a hairy vetch + winter wheat mix (70% and 30% respectively) and our summer cover crop is buckwheat. We grow vegetables only every other year [one acre in production and the other acre in cover crops, rotating each year] due to the fact that the fall cover crop planted after vegetables is typically planted so late it does not have sufficient time to generate much biomass.
>
> Buckwheat is one of my favorite summer cover crops because it grows so quickly it out-competes weeds well and is also attractive to beneficial insects. Typically, we plant it in early to mid-June a couple of weeks after incorporating our fall cover crop. We terminate the buckwheat at flowering about 6-8 weeks later and then plant our second hairy vetch + winter wheat cover crop in late August to early September. We apply compost (~5-8 tons per acre) once every other year prior to seeding this second winter cover crop.
>
> So the full sequence goes like this:
>
> Year 1: Vegetables → hairy vetch + winter wheat (Oct. planted)
> Year 2: Buckwheat (June planted) → hairy vetch + winter wheat + compost (early Sept. planted)
> Year 3: Return to season 1.
>
> All cover crops must be terminated at flowering before they go to seed to avoid them becoming weedy.
>
> Switching the timing of fall planted cover crops (from early to late) helps disrupt winter annual weeds which can otherwise be a problem.

This is just one example of how cover crops can be used. Timing and crop selection can be adjusted to fit your specific needs and goals. So when you feel like leaving your soils fallow, consider planting a cover crop instead.

Consult the resources below to find out more:

- SARE Cover Crops
- USU Extension Cover Crops for Utah Gardens
- Oregon State Cover Crops for Home Gardens
- Cornell Improve Your Soil with Cover Crops
- Purdue Winter Cover Crops Their Value and Management

Planting Dates...It's Not Too Late!

VEGETABLE PLANTING CHART

Vegetable	Planting Dates*	Days to Maturity	Weeks from Seeding to Transplanting	Planting Depth (in) Seed Only	Planting Spacings (in)		Suggested Row Length (ft)‡
					In Row after Thinning	Between Row	
Asparagus (crowns)	Mar 1-May 1	2 years	10-12	6-8	12-18	36-60	100
Beans							
Bush (green/wax)	Mar 1-Jul 1	65-90		1-2	3-4	18-24	100
Dry	Mar 1-Jun 1	50-70		1-2	3-4	18-24	100
Lima	Mar 1-May 1	90-100		1-2	3-4	18-24	200
Beets	Mar 1-Jul 1	50-70		½-1	2-3	12-18	50
Broccoli	Mar 1-Jul 15	55-75	4-6	¼-½	18-24	24-30	50
Brussels Sprouts	Mar 1-May 15	90-100	4-6	¼-½	18-24	24-30	30
Cabbage	Mar 1-Jul 1	60-90	4-6	¼-½	18-24	24-30	30
Carrots	Mar 1-Jun 1	60-80		¼-½	1-2	12-18	100
Cauliflower	Mar 1-Jul 1	60-95	4-6	¼-½	18-24	24-30	50
Celery	Mar 1-Jun 15	100-125	10-12	¼	4-6	18-24	25
Cucumber	Mar 1-Jun 1	50-70	4	¼-½-1	9-12	36-48	50
Eggplant	Mar 1-Jun 1	60-80	8-10	¼-½	18-24	24-30	30
Endive	Mar 1-May 15	80-100		¼-½	8-12	12-18	20
Garlic†	Mar 1-Apr 15	100-120		1-2	3-4	12-18	20
Kale†	Mar 1-Aug 1	50-60		¼-½	8-15	18-24	30
Kohlrabi	Mar 1-May 1	50-70		¼-½	4-8	18-24	25
Leek	Mar 1-May 1	100-130	6-8	¼-½	2-3	12-18	25
Lettuce							
Head	Mar 1-May 1	70-85	4	¼-½	8-15	18-24	25
Leaf	Mar 1-May 1	45-60	4	¼-½	6-8	18-24	25
Muskmelon	Apr 15-Jun 15	80-90	4	¼-½-1	24-36	36-48	40
Mustard	Mar 1-May 15	35-45		½	6-8	18-24	25
Okra	May 1-Jun 15	50-60		½-1	12-15	24-30	25
Onions							
Seeds†	Mar 1-Apr 15	100-120		¼-½	2-3	12-18	50
Sets	Mar 1-May 1	90-100		1-2	2-3	12-18	
Transplants	Mar 1-May 1	90-100	6-8	1-2	2-3	12-18	
Parsnip	Mar 1-May 15	100-120		½	3-4	18-24	50
Peas	Mar 1-May 15	50-70		1-2	2-3	12-18	50
Peppers	Apr 15-Jun 1	60-80	6-10	¼-½	15-18	24-30	50
Potatoes	Mar 1-May 1	100-130		4	9-12	24-36	200
Pumpkin	May 1-Jun 15	90-120	4	1-2	36-48	48-60	40
Radish	Mar 1-Sep 1	25-35		½	1-2	6-12	25
Rhubarb (crowns)	Mar 1-May 1	1-2	10-12	4-6	18-24	24-36	20
Spinach†	Mar 1-May1†	40-50†		¼-½	3-6	18-24	25
Squash							
Summer	May 1-Jun 1	40-60		1-2	24-36	36-48	25
Winter	May 1-Jun 15	80-100		1-2	24-48	48-60	40
Sweet Corn	Apr 1-Jun 1	65-95		1-2	9-12	30-36	400
Swiss Chard	Mar 1-Jul 1	50-60		¼-½	4-8	18-24	25
Tomato	Apr 15-Jun 15	60-90	4-6	¼-½	24-36	36-48	120
Turnip	Mar 1-May 1	40-60		¼-½	4-6	18-24	25
Watermelon	Apr 15-Jun 15	85-95	4	¼-½	24-48	36-48	40

* Planting dates cover most areas of Utah. Consult your County Extension Office to determine best planning date.
† Plant these vegetables from ind-August to late September for early harvest the following year. Plants may require some protection.
‡ Row length recommended to supply enough produce for fresh consumption and preserving.

For more information see:
Home Vegetable Garden Variety Recommendations for Utah, Dan Drost, Vegetable Extension Specialist 1996

Average Frost dates for Various Utah locations

City	Last (Avg)	First (Avg)	Frost-free days (Avg)
Alpine	May 15	Oct 02	104
Blanding	May 13	Oct 12	153
Cedar City	May 22	Sep 30	132
Delta	May 19	Sep 27	132
Farmington	May 05	Oct 09	157
Fillmore	May 16	Oct 03	140
Huntsville	Jun 12	Sep 08	89
Kanab	May 09	Oct 18	166
Lake Town	Jun 14	Sep 10	88
Logan	May 15	Sep 27	136
Morgan	Jun 06	Sep 11	97
Moroni	Jun 02	Sep 18	109
Ogden	May 05	Oct 10	159
Orem	Apr 22	Oct 20	181
Park City	Jun 12	Sep 13	95
Pleasant Grove	May 07	Oct 11	158
Price	May 12	Oct 02	143
Provo	May 01	Oct 13	167
Roosevelt	May 18	Sep 25	130
Salt Lake City Intl AP	Apr 25	Oct 19	178
Spanish Fork	May 01	Oct 13	166
St. George	Apr 03	Oct 29	207
Tooele	May 07	Oct 15	162
Tremonton	May 05	Oct 07	156

For other Utah locations and dates see:
Utah Climate Center, 2016 Utah Freeze Dates

Diseases

The Early-Season Disease—Damping-Off

One of the first problems of the growing season is a disease known as "damping-off". Damping-off is most commonly associated with seedling production, but it can also occur in field soils. It is caused by a number of soil-inhabiting pathogens, including Pythium, Rhizoctonia, Fusarium, and Phytophthora. Damping-off is most likely to occur in cold, wet soil, and disease increases with poor soil drainage, planting too deep, and the use of green compost.

Symptoms include: failure of plants to emerge, soft and mushy seeds that turn dark brown and decay, shriveled and/or darkened seedlings, decayed or weakened stems near the soil line, toppled or dead seedlings, and decayed roots.

Root rot/damping from the soil pathogen *Rhizoctonia* spp.

Control damping off with:

Good sanitation

- clean all tools, containers, and planting benches of soil debris and then sanitize them with a chlorine-water solution (1 part household chlorine bleach to 9 parts water)
- after items are sanitized, rinse them with clean water and allow to air dry.

High quality planting material

- when starting seeds indoors, use sterile, disease-free medium
- sphagnum moss added to soilless media has been shown to produce chemicals that inhibit the growth of pathogenic fungi that cause damping-off such as Pythium, Rhizoctonia, and Fusarium.

Proper environmental and cultural controls

- avoid planting in wet and compact soil
- keep soil as dry as will allow for good plant growth
- use a well-aerated potting soil when germinating seeds in containers
- avoid excessive fertilization, as this may injure seedlings or cause soft growth that is more vulnerable to damping-off (very little fertilizer is needed at germination)
- use new seeds each year or saved seeds that have been properly stored in tightly sealed packages in a refrigerator
- test old seeds for the ability to germinate
- plant seeds at the recommended depth and planting time
- sow thin plant stands and thin crowded seedlings
- allow for good ventilation when growing indoors

For more information see:

UC Davis Controlling Damping Off Diseases

UC Davis IPM Damping-off Diseases in the Garden

USU Damping-Off

Insects

Plan Early for Squash Bug Control with Trap Crops

Squash bugs seem to be the most pernicious pest of Utah cucurbits. Every year, growers are curious about the latest research on managing squash bugs. One option is the use of trap crops. If you are planting cucurbits this year, begin your squash bug defense by planning a space in your garden/field for a trap crop.

Trap crops are used to attract the pest insect, and keep them away from the primary crop. Yellow straightneck and crookneck squash grow quickly and attract overwintering adult squash bugs. Squash bugs actually prefer to lay eggs on these cultivars over acorn, zucchini, butternut, and spaghetti cultivars.

An entomologist checking a trap crop (squash plants) used to lure squash bugs away from developing melons.

Squash bug mass feeding on a pumpkin.

Plant one of these cultivars along the borders of the field or planting area. Overwintered adults emerge in the spring (typically during April in Southern Utah and during May in northern Utah). Once adults have been lured to the straightneck or crookneck squash, apply an insecticide or mechanically destroy the trap crop before eggs begin to hatch. This will reduce squash bug populations that would later attack the main crop.

For more information on squash bug management see:

USU Squash Bug

UC Davis IPM Squash Bug

Precautionary Statement: Utah State University Extension and its employees are not responsible for the use, misuse, or damage caused by application or misapplication of products or information mentioned in this document. All pesticides are labeled with ingredients, instructions, and risks. The pesticide applicator is legally responsible for proper use. USU makes no endorsement of the products listed herein.

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