JUNE 25, 2020 | VOL. 2 ISS. 3

AG Talk Report

UNIVERSITY OF IDAHO, U.S. DEPARTMENT OF AGRICULTURE, AND IDAHO COUNTIES COOPERATING

INSIDE THIS ISSUE

Join us for the next Ag Talk Tuesday—July 7

Kasia Duellman, Extension Seed Potato Specialist

Four sessions of Ag Talk Tuesday remain for the summer—don't miss out! The next Ag Talk Tuesday session will be held on July 7, from 11:00 AM to 1:00 PM (MT). Registration is required to join this discussion.

To register, please click here or copy and paste this link into your broweser:

https://uidaho.zoom.us/meeting/register/vpAkc-uvqTwpZF4DIEg_ZcN8xYE9ezZSkQ.

Crop Updates kick off each session—listen and contribute to this timely discussion. Featured topics presented by guest speakers follow the crop updates. At the next session, you can hear a presentation by Dr. Xi Liang, the cropping systems specialist housed at the University of Idaho Aberdeen Research and Extension Center. She will highlight new data from her trials this year.

Remaining featured topics and guest speakers are listed in the table (right) and a current schedule can be found at https://webpages.uidaho.edu/extension-seed-potato/ATT.html .

Ag Talk Tuesday Featured Topics 2020

July 7	Field projects of cropping systems of alfalfa, quinoa, barley, and wheat	Xi Liang
July 21	Update by the Dean of UofI-CALS	Dean Michael Parrella
August 4	Economics/cost of production/ markets forecast	Ben Eborn
August 18	Starling management on dairies Soil Health Assessment	Jason Thomas Linda Schott

University of Idaho Extension

Fate of Weeds and Herbicides in Compost vs. Manure

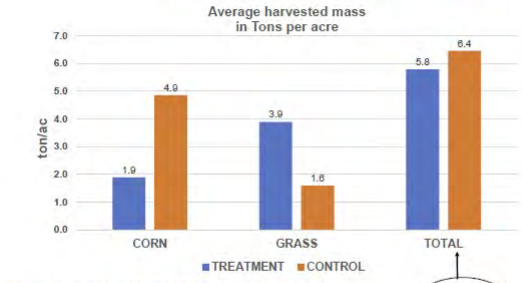
Mario E. de Haro Martí, Ph.D., Extension Educator, Dairy/Livestock Environmental Education, Gooding County Extension

The following slides were presented by Mario during Ag Talk Tuesday on June 16, 2020.

Manure and compost, the good stuff!

- Both are an excellent source of nutrients, organic matter, and active biological addition
- Manure has some disadvantages compared to composted manure and some relative advantages
- Both need to be sampled representatively and analyzed for nutrient content
- Calculate your application rates and apply timely (4Rs)

Manure application example



Sweet corn stubs chopped after ears harvested
"Grass" includes all non-corn species (former cover crop)

de Haro-Martí. 2017. Unpublished data

Is piling corral manure considered composting?

The answer is NO. You can leave it there for some four years and it will look somewhat like compost, but you will need to worry about nutrient content, pathogens, weeds, and air emissions!

Compost application example

Know your compost history from production to storage, to delivery!

Manure application example

Barnyard grass anyone?

Where are my corn and cover crop?

Why we have weeds in compost?

- Weeds' seeds were in some "feed stock" material and weren't killed or inhibited during the composting process
- Weeds' seeds were "acquired" during the storage period
- Contamination of compost during processing, storage, transport, application
- Weeds were already on your field!

(Weeds and Herbicides in Compost vs. Manure, cont'd)

How to avoid weeds in compost?

- Remember: stockpiled manure is not compost
- Proper composting techniques
  - PFRP
  - C:N ratio, temperature, moisture, curing
  - Storage free of weeds
  - Screening
- Avoid contamination
- **Control weeds on your field prior to application!**

COMPOSTING PROCESS

- PFRP works if we start with and maintain proper moisture during the process
- Initial mix C:N ratio as close to 30:1 as possible
- Do not add feedstock (contaminants) after the process has started
- Did I say screen it?
- TEST it!

CFR Title 40, 503 Appendix B, Sec. B

PFRP= Process to Further Reduce Pathogens

Composting using the windrow method (mechanically turned)= 131 ˚F (55 ˚C) or higher for 15 days or longer. During the period when compost is maintained at 131 ˚F (55 ˚C) or higher, there shall be a minimum of five turnings of the windrow. (3 days x 5 turns minimum)

Composting using in-vessel, or static aerated method= Maintain 131 ˚F (55 ˚C) or higher for three days

PFRP assumes the worst-case scenario and build a safety net from there

COMPOSTING DEGRADES MOST PESTICIDES

Herbicide	Trade Name	Reported Half Life in Soil (days)	Estimated Composting Half Life (days)	Plant Safe Conc. in Soil (ppb)
2,4-D	Weed-B-Gon, Hi-Dep®, Weedar® 64 Weed RHAP A-4D®, Weed RHAP A	7	7-14	500
Atrazine	AAtrex®, Atra(ol)®, Atrazine	100-300	21-50	nd
Clopyralid	Stinger®, Reclaim®, Transline®, Confront, Curtail, Millenium Ultra	15-287	1-2 years	3
Diazinon	Basudin, Dazzel, Gardentox, Kayazol, Knox Out, Nucidol, Spectracide, Diazinon	14-28	1-2	na
Dicamba	Banvel®, Banex®, Trooper®	7-42	nd	50
Glyphosate	Roundup®, Rodeo®, Accord®	3-130	nd	nd
MCPP	Kilprop, Mecopar, Triester-II, Mecomin-D, Triamine-II, Triplet TriPower, Trimec-Encore, U46 KV Fluid	< 60	nd	600
Pendimethalin	Prowl, AC 92553, Accotab, Go-Go-San, Herbadox, Penoxalin, Sipaxol, Stomp and Way-Up.	90	7-14	100
Picloram	Tordon®, Grazon®, Access®, Pathway	20-300	Nd (months/yr?)	10

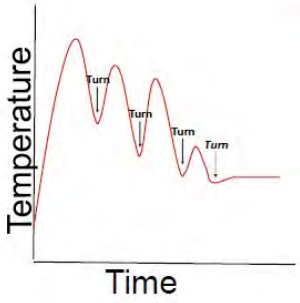
Abbreviations: nd=no data, na=not applicable, a=limited data

Source: U.S. Composting Council

TEMPERATURE CYCLES

Important temperatures:

- Maintain between 110 to ~150 ˚F (43 to 60 ˚C)
- 131 ˚F (55 ˚C) = Regulatory Critical T˚ for destruction of human pathogens
- 145 ˚F (63 ˚C) = destruction of most weed seeds
- > 160 ˚F (71 ˚C) = risk of auto-combustion



WHAT HERBICIDES RESIDUES IN COMPOST WE NEED TO WORRY ABOUT NOWADAYS?

Pyridine family of herbicides

Persistent in plant residues, compost and manure

- **Picloram**
- **Clopyralid**
- **Aminopyralid**
- **Aminocyclopyrachlor**

Low persistence in plant residues

- Triclopyr
- Fluroxypyr

(Weeds and Herbicides in Compost vs. Manure, cont'd)

CONCERNS

- Picloram, clopyralid and aminopyralid herbicides:
- Remain active in
  - Plant material
  - After going through animals' digestive system
  - After composting
- Depending on conditions, remain active for years
- Very low concentrations trigger plant response (ppb)

Avoiding persistent herbicides in compost

- **Follow label instructions!**
- Limit use of these herbicides to absolutely needed, closed loop systems, or isolated applications
- Be conscious of where plant residues or manures could go
- Clearly document and communicate when these herbicides have been used
- Herbicide carryover advisories must follow feedstock, plant material, manure, compost, etc.

USES AND SENSITIVE PLANTS

The Pyridine family herbicides are used to control broad leaf weeds in pastures, turf, hay, and grains, including corn

Crops known to be sensitive to clopyralid, picloram or aminopyralid

Beans	Carrots	Compositae family
Cotton	Dahlias	Eggplant
Flowers, in general	Grapes	Legumes
Lettuce	Marigolds	Mushrooms
Peas	Peppers	Potatoes
Roses, some types	Spinach*	Sugar beets*
Strawberries*	Sunflowers	Tobacco
Tomatoes	Umbelliferae family	Vegetables, in general

Source: DOW AgroSciences

HERBICIDE CARRYOVER ADVISORY

THIS HAY WAS GROWN IN A FIELD TREATED WITH _____, an EPA LABELLED AND APPROVED HERBICIDE for GRASS HAY PRODUCTION. THIS HERBICIDE CAN KILL BROADLEAF PLANTS.

HAY and MANURE PRODUCED AFTER FEEDING HAY GROWN in a FIELD TREATED with _____ SHOULD ONLY BE APPLIED TO GRASS HAYFIELDS AND PASTURES.

DO NOT APPLY THIS HAY or the MANURE PRODUCED AFTER FEEDING THIS HAY TO ANY BROADLEAF CROP.

DO NOT USE COMPOST MADE with MANURE PRODUCED AFTER FEEDING THIS HAY or HAY RESIDUES on BROADLEAF CROPS or PLANTS.

The manure from livestock fed this hay will usually be clear of residual herbicides four days after the animal stops eating this hay. Fresh or composted manure can then be used for broadleaf plant production.

CONSULT the _____ LABEL for COMPLETE DETAILS on SAFE USE and RESTRICTIONS.

PLEASE PROVIDE THIS INFORMATION TO ANYONE BUYING, ACCEPTING OR USING THIS HAY or the MANURE PRODUCED AFTER FEEDING THIS HAY.

SELLER NAME _____ DATE _____

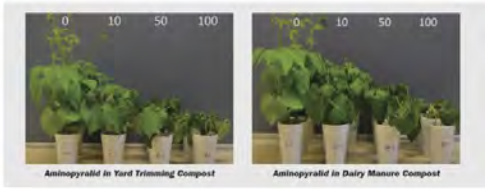
BUYER NAME _____ DATE _____

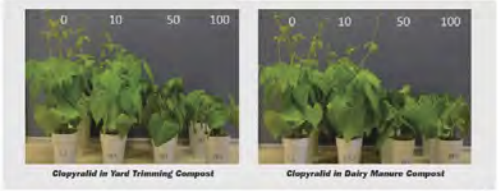
Sample of herbicide carryover advisory form

Source: NC State University Extension

HOW BAD IT IS?

Concentration values at the top of the photos are ppb in the media



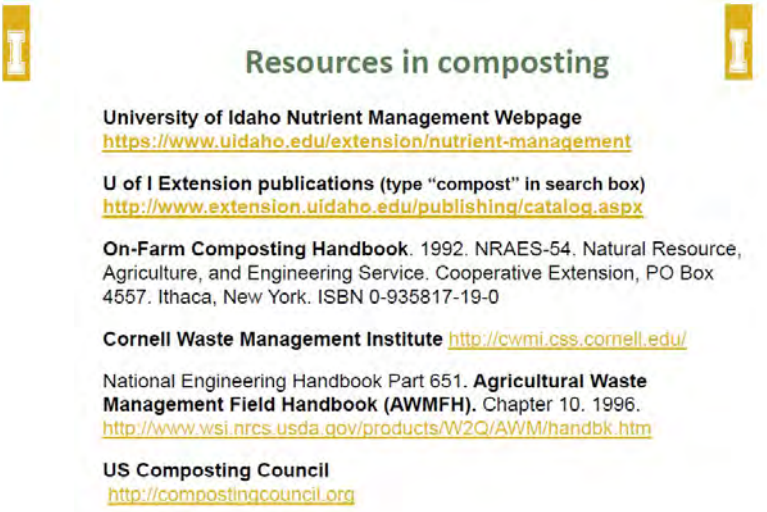


Source: U.S. Composting Council

TESTING FOR PYRIDINES

- If pyridines are suspected in feedstock, manure or compost, **test it!**
- If compost is sold for horticulture or gardening use, **test it!**
- **Bioassay** test is sensitive and can be done in-house
- WSU Extension and U.S. Composting Council have bioassays test step by step factsheets
- Lab test is expensive and may be less sensitive. Leave it for special cases or to ID herbicide

(Weeds and Herbicides in Compost vs. Manure, cont'd)



Teff as an emergency forage crop

Joseph Sagers, Extension Educator, Jefferson and Clark Counties

Teff is a warm season annual grass traditionally grown in Ethiopia for grain and forage. It is used in Idaho as an alternative annual forage crop. There are many pros and cons of growing teff grass in Idaho. It offers high yielding, high quality forage with relatively low water requirements and other inputs. It can be prepped and harvested like most other forage crops already produced in Idaho. It is a very small plant for the first part of its life, and weeds can be a major problem if they are not controlled. Once established it grows very quickly and can outcompete most weeds. The seed can be difficult to work with. Unlike other annual forages it has a very small seed. Each pound of seed contains approximately 2.2 million seeds. Its fine stems can lead to lodging in late maturity. If allowed to go mature past the boot stage the quality of the forage declines dramatically, as the plant moves resources into the grain.

Joseph Sagers and Reed Findlay conducted trials in Kimberly Idaho to further establish common agricultural practices with this new crop being grown for hay production. Teff was planted across 3 different planting dates, 3 different cutting heights and 2 planting rates. The three planting dates were mid-May, first of June, and Mid-June. There was no statistical difference between the mid-May planting and the first of June planting. The mid-June planting did have a significant difference in yield on the first harvest of the year. The plots were also harvested at 3 different cutting heights: 4 inches, 6 inches and 9 inches. Cutting lower did impede teff's ability to regrow before the second harvest, however the average overall tonnage across the two harvests evened out to be the same. The planting rates used were 5 lbs./acre and 2.5 lbs./acre. For normal teff production 5 lbs./acre is the recommended rate. There was no statistical difference between the recommended rate of 5 lbs./acre and half that rate. Two harvests were taken in July and September. Trials are being repeated again in 2020.

There are many uses in which teff could be a great fit for Idaho. It can be used as a new rotation between other crops. It can still get a full yield following alfalfa's first harvest. It could be used as a double crop following winter grain or other short growing crops. It would also work well as an emergency crop. It can be planted as late as June 1st and still get 2 full harvests. This is valuable for growers who need to plant something after an initial planting has failed for whatever reason. University of Idaho is looking to answer questions as this crop slowly grows in popularity.

Herbicides and teff

The information below is from an email from Pamela J.S. Hutchinson to Ag Talk Tuesday registrants. We include it here for your information.

THE QUESTION:
Someone asked during the call (on June 16) that if a herbicide is labeled for hay could it be used in Teff being grown as a hay crop...
The correct answer is No.

THE CORRECT ANSWER and supporting information.
(Paraphrased from **Ronda Hirnyck**, University of Idaho Extension - Statewide Pesticide Program Coordinator.)
Teff is NOT considered a grass or grass hay. It is legally defined in Crop Group 15, with representative crops being wheat and barley (though, per Cathy Wilson, the Idaho Wheat Commission does not collect wheat tax on teff—Wheat tax is only collected on species in the genus *Triticum*). The thinking that teff is a grass hay is a common mistake, but an illegal one. Most teff in our region is grown as hay, so it is a bit confusing. It has been physiologically defined internationally, as Crop Group 15 (wheat and barley).

Gotta' have the residue data:
EPA requires residue data for all of the representative crops in a group in order to specifically list that Crop Group on the label. Newer labels will often have the the Crop Grouping on the label. So if the crop is in that Crop Group, then the specific crop does not need to be listed on the label. If the Crop Group is not listed on the label, but instead, specific crops are listed, then that means the residue data. was completed ONLY for those specific crops, The herbicide can only be used on teff if teff or Crop Group 15 is listed on the label i.e. you cannot make your own extrapolation on adding a crop if the crop isn't specifically listed or the Crop Group in which that crop is included isn't stated in the label.

The Good News:
We have lots of residue data on wheat and barley for various herbicides! Codex and EPA is allowing "bridging" of residue data from wheat and barley studies to teff, so new residue trials are NOT needed for teff.

Teff is included on the Latigo label (premix of dicamba and 2,4-D).

HOWEVER:
Teff has not been added to other herbicide labels more than likely because of phytotoxicity concerns, nothing to do with residues since bridging to Crop Group 15 has been allowed.
Registrants are concerned. The problem is that there are always phyto concerns with adding new crops that don't have phyto data collected!

Thank you Ronda for this important information!!!

Hope for the Future without Worries About Phyto:
Sulfentrazone might be labeled for Teff - we are double checking and will let you know.

Gold Sky—still no label, again we will double check. The tolerance was established by EPA back in 2018, The most recent Corteva label, however, does not have teff or "Crop Group 15" stated on the label. Joel Felix is working with Corteva for the labeling.

As mentioned, a few years ago, *Ronda and her group* worked with Codex and EPA to move *t*eff into Crop Group 15. So future labels that can be used on wheat and barley, could easily have teff added (from a residue side of things). But again, teff herbicide labels = residue data AND phyto data! So let's encourage and support Joseph Sagers and Reed Findlay (and your local weed scientist) to conduct herbicide tolerance injury research with teff.

Aphids are on the move

Kasia Duellman, Seed Potato Specialist

You might notice some yellow buckets around the region along edges of fields. These 2-gallon buckets are filled with a solution of water amended with a little copper sulfate and a drop or two of dish soap (one with no scent or color). Once a week, someone with the University of Idaho, the Idaho Crop Improvement Association, or a cooperating grower or agronomist will sieve the contents of the buckets and send them to our lab in Idaho Falls to count the number of aphids captured. We hope to connect the number of aphids in flight with the risk of PVY.

The aphid numbers since June 1 indicate that these pests are on the move, albeit at low numbers. We have not yet observed a peak. As we hone our aphid identification skills, information on the types of aphids will also be made available in the future.

Watch for this column in upcoming Ag Talk Reports for updates. You can also check out the website cropalerts.org where this information is posted weekly, along with the weekly Spore Trap program that monitors Idaho for selected plant pathogens that attack foliage of potato and sugarbeet.

Location	Trap Type	6/1-6/8	6/8-6/15	6/15-6/22
Aberdeen - North	bucket	--	0	--
Aberdeen - South	bucket	--	1	--
Arco 17	bucket	--	0	0
Arco 26	bucket	0	0	0
Arco 4	bucket	--	0	0
Ashton #1 - South	bucket	0	0	1
Ashton #2 - Central	bucket	0	0	0
Ashton #3 - East	bucket	0	0	0
Ashton #4 - Northeast	bucket	0	0	2
Ashton #5 - West (bucket)	bucket	4	4	0
Ashton #5 - West (suction trap)	suction trap	1	1	0
Blackfoot	bucket	4	0	5
Grace 1 - east	bucket	--	1	--
Grace 2 - near suction trap	bucket	--	1	--
Grace 2 - suction trap	suction trap	pending	pending	--
Hidden Valley	suction trap	0	0	0
Idaho Falls	bucket	1	3	9
Rexburg	bucket	0	1	6
Richfield R6	bucket	--	0	--
Tetonia Back (by spore trap)	bucket	0	2	1
Tetonia Front (by suction trap)	bucket	1	0	2
Tetonia Front (suction trap)	suction trap	0	0	0
Dietrich - East 11	bucket	0	0	0
Dietrich - East 3	bucket	3	0	0
Dietrich - East HVW3	bucket	--	0	--
Arco - South	bucket	0	0	1
Dietrich - East 23	bucket	1	0	--
Richfield - North	bucket	0	0	0
Arco - East	bucket	0	0	2
Arco - West	bucket	0	0	0
Holbrook 1	bucket	--	--	--
Holbrook 2	suction trap	--	--	--
Holbrook 3	bucket	--	--	--
Holbrook 4	suction trap	--	--	--
Driggs 1	suction trap	--	--	0
Driggs 2	suction trap	--	--	0
Driggs 3	bucket	--	--	2
Driggs 4	bucket	--	--	3
Driggs 5	bucket	--	--	0

AG Talk Report

UPCOMING EVENTS

AG TALK TUESDAY

July 7 and 21| 11:00 AM

Ag Talk Tuesday session, live and online.

MORE EVENTS CAN BE FOUND AT:

HTTPS://WWW.UIDAHO.EDU/EXTENSION/NEWS/CALENDAR

Idaho Falls Research & Extension Center 1776 Science Center Drive Idaho Falls, ID 83401 (208) 529-8376
Aberdeen REC 208-397-4181
Kimberly REC 208-423-4691
Parma REC 208-722-6708
Entomology, Plant Pathology & Nematology 208-885-3776
Plant Sciences 208-885-2122
Soil and Water Systems 208-885-0111

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