Field Notes
San Joaquin County
November 2021

University of California
Agriculture and Natural Resources

PRACTICAL • CONNECTED • TRUSTED

Using N-Rich Reference Zones in Wheat to Guide Fertilizer Management

In the Spring 2020 newsletter, I wrote an article introducing a project about using nitrogen (N) rich reference zones in wheat. The goal of the project is to show how N-rich reference zones can be used to guide N fertilization in small grains to increase crop productivity and N use efficiency. This is a three-year project funded by the CDFA Fertilizer Research and Education Program, and UCCE has implemented several demonstration sites, including a site in the Delta. As we move into the 2021-22 wheat season, I wanted to provide an update on the project and share that we have published case studies (https://ucanr.edu/sites/deltacrops/files/359212.pdf) about the Delta site. The purpose of the case studies is to describe how local conditions influenced how we used N-rich reference zones to guide N management.

The N-rich reference zone is a small area within a field where extra N fertilizer is added at the beginning of the season. This extra fertilizer ensures that the reference zone will not be N-limited after planting. Reference zones are most useful to growers who can apply the majority of their seasonal N budget during or after the tillering stage of growth. Previous work has shown that in-season N applications can improve yield and/or protein under some conditions. When a grower is determining whether and how much N fertilizer to add in-season, measurements from both the reference zone and the broader field are compared to understand whether the broader field is sufficient in plant-available N.

We have used a soil nitrate quick test (SNQT), handheld canopy reflectance devices, and drone and satellite imagery to evaluate the N status of the reference zones and the broader field. The SNQT is performed in the field and provides a quick, inexpensive estimate of nitrogen availability in the soil. The proximal and remote sensing allow us to see differences in green vegetation that the human eye cannot detect. We collect data from both the N-rich zones and the broader field, and then we can evaluate N sufficiency in the field relative to the N-rich zone. Our team has developed a N Fertilizer Management Tool (https://smallgrain-n-management.plantsciences.ucdavis.edu/?page=landing_page), which can help with in-season N fertilizer decision making.

At the Delta location on Tyler Island, we have trialed these practices on high organic matter soils. In the 2020-21 wheat season, we found that the additional fertilizer in the N-rich zones did not improve wheat yield at this site. We did find, however, that in-season N fertilizer improved wheat protein by about 0.5 percent. More details can be found in the case study. Many thanks to Dennis Lewallen for collaborating on this trial.

Implementing N-rich reference zones allows growers to get real-time knowledge to inform N fertilizer management in small grains. This information can help them make fertilizer applications when increased yield and/or protein benefits are likely and avoid them when they are not. Please reach out if you would like more information on how to implement N-rich zones in your fields this season.

Michelle Leinfelder-Miles, Delta Farm Advisor

Field Corn Variety Trial Results

The 2021 UCCE Delta field corn variety trial, located on Tyler Island, was planted on April 20th by air planter and consisted of three replicate blocks of sixteen varieties. The varieties included ten varieties submitted by seed companies and six submitted by the grower. All varieties were glyphosate tolerant. Each plot consisted of four 30-inch beds on an average row length of 1130 feet. Seed was planted approximately two inches deep and six inches apart down the row. The soil is a Rindge mucky silt loam with approximately 20 percent organic matter in the top 15 inches of soil. The Rindge series is a mucky peat soil down to about 60 inches, and approximately 55,600 acres in the Delta are described by the Rindge classification. The previous crop in the field was corn. Subsurface irrigation by “spud ditch” was employed twice. The fertilizer program consisted of pre-plant UN-32 (113 lb N/acre) and at-planting 8-24-6 with zinc chelate (31 lb N/acre). Weed control was by cultivation and glyphosate herbicide program, and Onager miticide was applied. The field was harvested on October 1st.

(Continued on page 2)

Table of Contents:

Table 1. 2021 UCCE Delta field corn variety trial

Entry Name	Variety Source	Stand Count (Plants/A)	Days to Bloom	Fusarium Ear Rot (%)	Head Smut* (%)	Common Smut (%)	Plants Lodged (%)	Ear Height (in)	Moisture (%)	Bushel Wt. (lbs/bu)	Yield‡ (lbs/acre)
P 1366	Grower	34848	73 cde	0	1 c	0	0	48 ab	12.4 abc	61.4 abc	13095 a
A 647-42TRC	Agrigold	33687	72 ef	0	3 bc	0	0	48 ab	14.2 a	59.4 c	13086 a
BAG SX5543 RR	Baglietto Seeds	32815	74 bcde	0	1 c	0	0	45 ab	14.3 a	62.4 a	12890 a
P 1213AM	Corteva Agriscience	31654	72 ef	0	2 bc	0	0	43 b	13.6 abc	61.5 abc	12826 a
INT 6588	Grower	31073	76 a	0	1 c	0	0	51 a	14.2 a	61.8 abc	12679 ab
P 1359AM	Corteva Agriscience	31363	76 a	0	0 c	0	0	48 ab	13.1 abc	62.0 ab	12662 ab
LG 61C48VT2PRO	LG Seeds	31654	72 ef	0	4 abc	0	0	49 ab	12.2 bc	59.8 bc	11425 abcd
DKC 6916	Grower	31944	75 abc	0	1 c	0	0	48 ab	14.1 ab	61.4 abc	11311 abcd
LG 5643VT2PRO	LG Seeds	31363	73 def	0	0 c	0	0	51 a	12.8 abc	60.4 abc	11199 abcd
INT 6811VT2P	Wilbur-Ellis	33977	75 abcd	0	4 abc	0	0	48 ab	13.4 abc	60.5 abc	10772 abcd
INT 6533VT2P	Wilbur-Ellis	34558	72 ef	0	1 c	0	0	51 a	12.0 c	61.5 abc	10539 abcd
CP 5370VT2P/RIB	Winfield United	32815	76 ab	0	2 bc	0	0	47 ab	11.8 c	59.5 bc	10309 abcd
A 646-12VT2RIB	Agrigold	35138	72 ef	0	13 ab	0	0	50 ab	12.9 abc	60.1 abc	8784 bcd
LG 66C32	Grower	35429	72 ef	1	19 a	1	0	49 ab	12.9 abc	59.8 abc	8612 cd
LG 66C11	Grower	33977	71 f	0	17 a	0	0	46 ab	13.4 abc	59.6 bc	8210 d
INT 6720	Grower	33106	76 a	0	20 a	0	0	47 ab	12.4 abc	60.9 abc	7466 d
Average		**33088**	**74**	**0**	**6**	**0**	**0**	**48**	**13**	**60.8**	**10992**
Coefficient of Variation (%)		**6**	**3**	**-**	**137**	**-**	**-**	**6**	**8**	**2.0**	**19**
Significant variety effect (P value)		**0.7632**	**<0.0001**	**N/A**	**<0.0001**	**N/A**	**N/A**	**0.0160**	**0.0001**	**0.0008**	**<0.0001**

Results for each variety are expressed as the average across three replications. * Data were transformed for analysis. Arithmetic means are presented.
‡ Yield adjusted to 15% moisture.

Stand counts were made approximately two weeks after planting. The stand was assessed in the center two rows of each four-row plot, counting the plants along a 10-foot length. All varieties reached bloom between June 30th and July 5th (71-76 days after planting). We monitored head smut, common smut, and Fusarium ear rot (Fig. 1), as well as plant lodging and ear height, in mid-September. The three diseases are generally managed by variety selection. Incidence of head smut was similar to previous years, and common smut is not generally observed at this site. Fusarium ear rot incidence was the lowest observed over the last 8 years of this trial. This year, average incidence across varieties was 0 percent, and it has ranged from 1 percent (2014) to 10 percent (2018).

Figure 1. Diseases monitored in the UCCE Delta field corn variety trial: A) Fusarium ear rot, B) head smut, and C) common smut. Fusarium ear rot and common smut incidence was very low in 2021.

Table 1 presents mean values for the three replicates. The statistical method used to compare the means is called the Tukey's range test. Varieties were considered statistically different if their P value was less than 0.05, or 5 percent.

What this means is that when differences between varieties exist, we are 95% certain that the two varieties are actually different; the results are not due to random chance. Twelve varieties have the letter "a" following their mean yield, which means that those twelve varieties all performed similarly in the trial. In other words, based on this research, we cannot attribute numerical differences to varietal differences.

In addition to yield, there were also statistical differences among varieties in days to bloom, head smut, ear height, grain moisture, and bushel weight. The CV, or coefficient of variation, is the standard deviation divided by the mean, or a measure of variability in relation to the mean. For head smut, the variability among the three replicates was very high, and yield variability across replicates was also high relative to previous years.

Special thanks go to the cooperating growers, Gary and Steve Mello, and the participating seed companies.

Michelle Leinfelder-Miles, Delta Farm Advisor

Look out for Thousand Cankers Disease in Your Walnut Orchard

Thousand cankers disease (TCD) is a newly recognized fungal disease of various walnut (*Juglans*) species transmitted by a tiny beetle – the walnut twig beetle (WTB). The disease was first confirmed in Yolo County in 2008, and since then, it has been found in many walnut growing counties of the Central Valley.

(Continued on page 3)

Although black walnut appears to be highly susceptible, the disease incidence has increased in English walnut trees and Paradox rootstock throughout the state. Therefore, the potential economic impact of TCD has become an increased concern to growers because of the lack of effective control measures for the disease and the vector. During the last two years, we have received several calls from PCAs and growers reporting TCD infections and symptoms in San Joaquin and Stanislaus counties. Previous walnut literature/observations indicated that stressed trees (i.e., older, over or under irrigated, crown gall infected, etc.) might become more vulnerable to TCD. Generally, those trees will eventually succumb to severe infections and beetle colonization. Also, we recently documented the spread of TCD from diseased old walnut blocks to neighboring healthy orchards. Early detection is one of the key management options; thus, documenting the disease symptoms is critical for taking timely actions to manage this disease. In this article, we provide some background to help growers detect the disease, identify the vector beetle, and track the disease progression in walnut orchards.

What are the causes and symptoms of the disease?

Thousand cankers disease is produced by the combined activity of the canker-producing fungus, *Geosmithia morbida,* introduced into trees by the insect vector*,* the walnut twig beetle, *Pityophthorus juglandis.* The disease appears when WTB tunnels under the bark of walnut trees and transmits the fungal pathogen that produces the canker disease. Over time, when beetles become abundant, they tend to colonize other parts of the same tree or move to different trees, resulting in patches of thousands of cankers on the tree, as the disease name suggests. The canker disrupts the movement of water and nutrients, resulting in the dieback of scaffold branches and limbs, leading to tree decline and death. (Fig. 1).

How to diagnose TCD in walnuts

The disease results from repeated infestations of the *Geosmithia*-carrying twig beetles (Fig. 2) and produces cumulative wounds that lead to progressive decline of the tree. Since both organisms – fungus and twig beetle – are more likely to be found together, the identification of either organism can be used in diagnosing TCD.

Detection of cankers is difficult in the early stages of the disease (Fig 1A), but other symptoms, such as branch dieback and eventual tree death, are more obvious at the later stage of disease development (Fig. 1D). The presence of the twig beetle in the trees can be confirmed by a close examination of symptomatic branches or trunk of the tree. You can see pinhole-sized WTB entrance or emergence holes and sap staining, which are frequently near cankers in the underlying phloem (Fig. 1C). WTB galleries are about 1-2 inches long; often there is dark brown to black dust/sap in these galleries. Cankers can be seen after peeling the bark with a knife from symptomatic branches. Make sure not to cut too deeply; the beetle galleries and fungus initially are found in the bark (phloem) and not in the cambium or sapwood. Individual cankers may initially be only a few millimeters in diameter but eventually become large canker patches because of the WTB activity. The beetles produce a shallow tunnel near the center of the individual cankers, which eventually coalesce to damage more areas of the bark. Ultimately, these cankers extend to the vascular cambium from the bark, resulting in a brown to black discoloration of the sapwood. With the smooth-barked texture of the English walnut, the sap staining of the trunk/branches is evident from a distance.

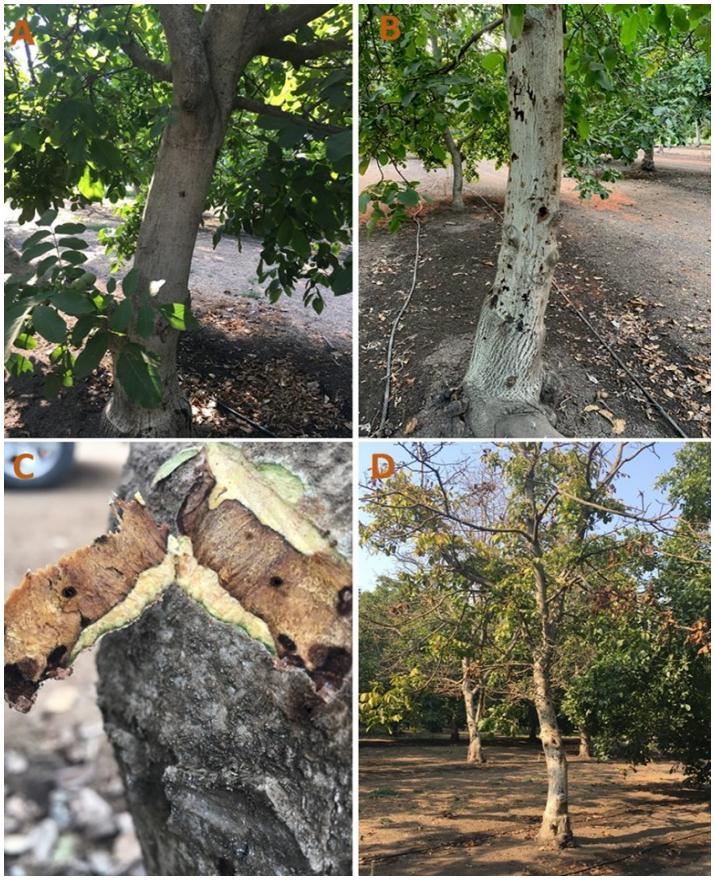


Fig. 1. Symptoms in walnut trees associated with Thousand Cankers Disease (TCD) infection; (A) early stages of TCD infection; (B) numerous dark cankers from TCD caused by *Geosmithia morbida*; (C) pinhole-sized WTB entrance or emergence holes and sap staining near cankers in the underlying phloem; (D) branch dieback and eventual tree death at a later stage of disease development.

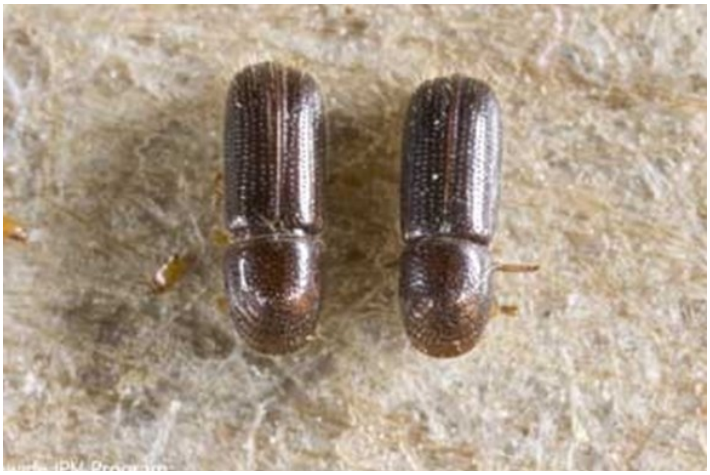


Fig. 2. Walnut twig beetle, *Pityophthorus juglandis*, approximately 0.06 inches long (Photo credit: University of California, UC IPM).

(Continued on page 4)

Can trees survive this disease?

It is not well known how long it takes for the disease to kill the tree from the initial colonization by the beetles that carry the fungus. However, the TCD could kill trees from the cumulative effects of coalescing cankers that develop around individual entry wounds made by the WTB. These numerous cankers cause disruption of phloem-transporting nutrients resulting in a progressive depletion of energy. The ultimate tree mortality might result from multiple factors such as overall tree health, as stressed trees are more susceptible to damage and decline than healthy trees.

Are there any ways to treat these cankers?

There are no chemical treatments that will eliminate this disease, which means that once the disease appears, there is not much that can be done to stop the disease. The diseased branches can be removed by pruning to reduce the chance of the disease spreading. Well maintained trees may recover from early and low-intensity infections, especially under a low beetle population; however, there is always a risk of disease spread once beetles and fungus inoculum are present. Preventing tree cankers is the best method of protection.

Are there any insecticides or traps for the insect vector WTB?

Theoretically, methods that could prevent colonization by WTB (e.g., applying insecticides) could prevent further spread of TCD; however, it is very difficult to control the vector beetles. Currently, the use of pesticides as a control method is not available to manage this disease. Recent observations showed that the beetle generally has two to three overlapping flights in winter or early spring. The primary flight is between late April and July, and the secondary flight is from September to October. Since they have overlapping flights, there is no period when beetles are not active during the active walnut growing period (April to November). That poses a challenge to do any kind of insecticide treatment targeting the beetles. Also, their life cycle is much more complicated than other insect pests that walnut growers deal with. These beetles and their immatures are inside the wood, so it is difficult to use contact insecticides. Also, their numbers tend to be in the thousands, and theoretically, a single beetle can transmit the disease. Walnut twig beetles overwinter primarily as larvae and adults beneath the bark. Male beetles attack the trees first, creating small galleries under the bark and then releasing pheromones that attract females to the phloem tissue of the tree's trunk/branches, where they tunnel, feed, and produce offspring. Since beetle pheromone is involved in host colonization, some research has been done to look at the effects of some chemical compounds in repelling the bark beetles and has found some candidate compounds. However, the commercial use of these compounds in managing WTB in commercial walnut orchards takes multiple years of research.

What should be done with infected branches or trees?

Most importantly, all wood from TCD-affected trees should be retained locally to prevent the further spread of the disease. The infested wood can carry these tiny beetles underneath the bark for a long time, over 6-7 months, and can infest new trees after their emergence. So, the most effective cultural practice is destroying infested wood and prunings, either by burning or shredding during the winter months before the twig beetle flight begins in spring. In the orchard, removal of highly infected trees early can help minimize WTB population build-up and stop the spread of disease inoculum.

Mohamed Nouri, Orchard Systems Advisor
Jhalendra Rijal, IPM Advisor, Stanislaus, San Joaquin, and Merced counties

2021 Delta Rice Recap

In 2021, rice acreage in the Delta, south of the Yolo Bypass, was roughly 6,600 acres. Most of the Delta acreage is in San Joaquin County, with a few hundred acres in Sacramento County. Delta rice acreage has been steadily increasing over the last several years (Table 1). Most of the acreage was planted with variety M-206, but I have heard that a small amount of M-105 was also planted.

Table 1. Rice acreage and yield according to the San Joaquin County Agricultural Commissioner's crop reports. County rice production is predominantly (if not entirely) in the Delta region. The 2021 acreage estimate includes a few hundred acres in the Sacramento County Delta.

San Joaquin County Rice					
	2021	2020	2019	2018	2017
Acreage	6600 (est.)	4990	4360	3620	3060
Average Yield (cwt/ac)	Not available	87	81	86	82

The season was influenced by the severely dry winter that preceded it. Delta rice is entirely drill-seeded (Figure 1). The fine, organic soils present challenges for water-seeding; namely, soil particles go into suspension and then bury the seed too deeply, resulting in poor germination. Growers who were planted by mid-April were generally able to plant to moisture. These growers were starting to harvest by late September and early October and beat the late-October rains.

Pest pressure was not especially high across the region in 2021, but I consulted with growers and consultants on a handful of pests. Watergrass, barnyardgrass, and sprangletop can be problematic weeds. These are generally controlled by a spray program applied by ground pre-flood, when the rice has 3-4 leaves. Windy conditions can compromise optimal timing for herbicide applications, and this year was no exception. Typically, a second application is not made, but some growers contemplated it this year for escaped grasses.

(Continued on page 5)

Over the last two years, I have conducted trials to evaluate the efficacy of a new product, Loyant (florpyrauxifen-benzyl; Corteva Agriscience), on these grasses in the Delta drill-seeded system. (See https://ucanr.edu/sites/deltacrops/files/343805.pdf for project reports.) This year, we evaluated product efficacy on nutsedge, and those results will be forthcoming.

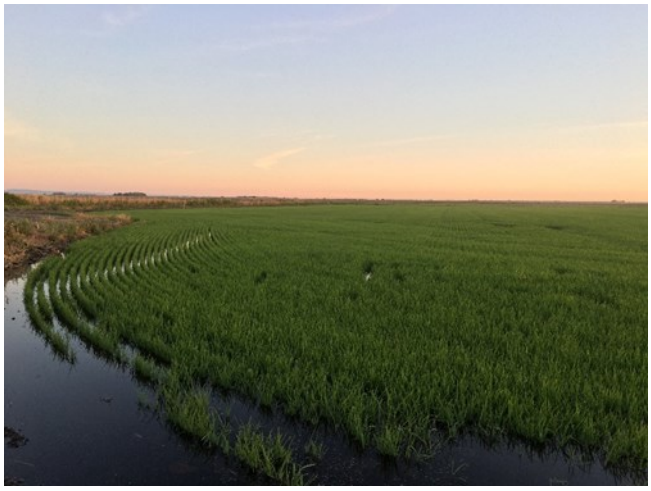


Figure 1. Delta rice is entirely drill-seeded, in contrast to the water-seeding done in the Sacramento Valley

I have been trapping armyworms in the Delta since 2016, and like in the Sacramento Valley, armyworm populations were very low this year. Some growers indicated needing to treat some of their acreage, particularly where rice was neighbored by riparian or wetland vegetation, but other growers did not treat. Annual trap counts for the Delta are available on my website (https://ucanr.edu/sites/deltacrops/Rice/Armyworms/).

Last year, we started observing stem rot (Sclerotium) on some farms but not until late in the season when the fields were drained. We developed post-harvest straw management programs, which appear to have mitigated the problem but not eliminated it. Next year, we will monitor for the disease early in the year, and a fungicide application may be necessary on some farms. There is a tendency for stem rot to be more severe on low potassium soils, and most Delta soils are naturally low in potassium.

For a few years, we have been monitoring some ranches where we have identified weedy rice. On one farm that had a light infestation, it appears that the grower has eliminated weedy rice with in-season rogueing, post-harvest management that included straw chopping but no incorporation, and winter flooding. These appear to be important practices, especially with light infestations, and in particular until a herbicide is approved for spot-spraying. We also advise that growers pay attention to equipment sanitation – harvesting weedy rice fields last (if possible) and thoroughly cleaning out equipment after harvesting fields with weedy rice.

Cooler temperatures in the Delta, compared to the Sacramento Valley, make the Delta a challenging place to grow rice. Growers are limited to using only very-early and early maturing varieties. In 2021, we revived the UCCE variety trial in the Delta location, which will help in the identification and advancement of cold-tolerant varieties. (See https://rice.ucanr.edu/Yield_Summaries/San_Joaquin_rice_variety_trial_results/ for past reports.) Low night time temperatures can cause blanking, which results in empty grains. We expect blanking to occur when the developing pollen grains are exposed to nighttime temperatures at or below 55º F for several hours. I am aware of a late-planted ranch that may have experienced some blanking due to cooler temperatures at the time of panicle development, but blanking should not be a problem for the majority of fields which were planted by mid-April.

Overall, 2021 was a successful year for Delta rice growers. Thank you to all my colleagues in the industry, and especially to my trial cooperators.

Michelle Leinfelder-Miles, Delta Farm Advisor

Managing *Fusarium falciforme* Vine Decline of Tomato

I have been collaborating with the Swett lab in the Department of Plant Pathology at UC Davis on a project to develop an integrated management strategy for *Fusarium falciforme*, the cause of a relatively new vine decline problem in tomatoes. This pathogen can cause a rot of the roots, crown and stem and causes unique foliar symptoms that can sometimes resemble tomato spotted wilt virus or other problems. Sometimes the disease is fairly mild and other times it progresses and results in vine decline and death; stress factors appear to play a role in determining the severity of the disease.

Our overall goals are to provide growers with information and practical tools to help them with decision making and crop management. We are also looking to improve our diagnostic capabilities so that we can provide more timely diagnoses that can discriminate between the different Fusarium diseases, which can be challenging to separate in the field. The project is ongoing, but I wanted to provide an update on where we are at currently.

Crop rotations

We are continuing work on evaluating rotation crops to determine there are hosts that contribute to the survival of the pathogen in the absence of a tomato crop. This includes surveying commercial fields when they are rotated out of tomatoes – and looking for the disease in the rotation crop as well as in the tomato crop when the field rotates back to tomatoes again. There are also field and greenhouse trials at UC Davis that are looking closer at the host status of various crops. At this point, we know that the pathogen can cause disease in safflower, sunflower and potato. Some other crops are potential hosts and further work is underway to better understand the risk (e.g., alfalfa, garbanzo, cucurbits). Locally important rotation crops that do not appear to be hosts include corn, wheat and rice. Cucurbits are a potential host, but I have not seen local cucumbers, pumpkins or watermelons with disease problems caused by this pathogen.

(Continued on page 6)

Table 1. Summary of three years of field trials including evaluations of K-Pam (metam potassium) for control of Fusarium diseases of tomato in local commercial fields in the Delta.

		Fusarium (% incidence)	*Yield (tons/ac)*	*Yield difference*
2019 trial	*F. falciforme* vine decline			
	K-Pam (32.4 gal)	1%	54.7	7.2 tons
	Non-treated	23%	47.5	
2020 trial	Fusarium wilt and *F. falciforme* vine decline			
	K-Pam (30 gal)	12%	59.8	10.7 tons
	K-Pam (15 gal)	15%	53.8	4.7 tons
	Non-treated	19%	49.1	
2021 trial	Fusarium wilt and *F. falciforme* vine decline			
	K-Pam (31 gal)	17%	53.5	25.9 tons
	K-Pam (15.5 gal)	22%	41.2	13.6 tons
	Non-treated	30%	27.6	
Average of three trials 2019-2021				
	K-Pam - 30 to 32.4 gal	10%	56.0	14.6 tons (35% increase)
	Non-treated	24%	41.4	
Average of two trials 2020-2021				
	K-Pam - 15 to 15.5 gal	19%	47.5	9.2 tons (24% increase)
	Non-treated	25%	38.4	

Tolerant varieties

Many of our commercial processing tomato varieties are now resistant to Fusarium wilt race 3 (over a third of California acreage is now of race 3-resistant varieties). This is wonderful, but unfortunately this resistance does not translate into any protection against *Fusarium falciforme* vine decline.

There are also a few varieties with resistance to Fusarium crown rot (e.g. Harris Moran 5522, 4909, 5511 & 8237; Seminis 9018, 9021, 9025 & 9032), but again this resistance does not seem to correlate with any tolerance to *F. falciforme*, which can also cause a crown rot but is a different species of Fusarium. We have no known host resistance to *Fusarium falciforme* among our commercial varieties, but we do have a range of susceptibility to the disease.

Some varieties seem to yield well despite being infected. We have information from three years of field trials conducted at the UC Davis farm and in commercial fields in Yolo, Colusa, San Joaquin and Fresno counties. This fall/winter we will be working on summarizing all the data we have on variety susceptibility and will make that available as soon as we can to help guide planting decisions this spring.

Chemical control

We have been evaluating fungicides and the fumigant K-Pam (metam potassium) for efficacy against Fusarium diseases. Chemical control has limited efficacy against these diseases and should not be the primary focus of a management strategy. That said, most of our field trials have shown yield increases from K-Pam fumigation and sometimes even from early-season soil-applied fungicides. See the table for a summary of the impacts of K-Pam in recent field trials in this county.

I get asked commonly, “Don’t fumigants kill the soil microbial community?” It is a common misconception that metam fumigation kills all life in the soil. Research has shown that soil microbiological activity rebounds rather quickly, although of course there may be shifts in the makeup of the microbial community. And with drip fumigation, we are only treating a portion of the soil profile, so there is a huge reservoir of soil microbes in non-treated areas. Of course, this also means that we are not eliminating the pathogen, just temporarily holding it at bay in the area around the drip tape.

Figure 1. *Fusarium falciforme* vine decline just prior to harvest.

(Continued on page 7)

If you are planning to treat tomato acreage with K-Pam via the drip system and are willing to leave out a few rows from the applications, I might be interested in documenting the yield differences in your field. Please let me know if this might be possible at your site. It is important to remember that K-Pam is a restricted use pesticide that must be used with the upmost care to protect workers, neighbors and the environment. It should only be handled by properly trained personnel. Always follow the label and observe permit conditions laid out by the county agricultural commissioner.

Brenna Aegerter, Vegetable Crops Farm Advisor

UC/ANR Announcements and Calendar of Events

Weed Management in Agronomic Crops for a Changing Environment
Monday, November 15, 2021
9:00am – 12:00pm
Online event. Agenda and registration available here: https://wric.ucdavis.edu/events/agenda_WeedMgmtinAgronomicCropsforaChangingEnvironment.pdf

Western Alfalfa and Forage Symposium
November 16-18, 2021
Reno, NV
For more information and to register, please visit: https://calhaysymposium.com/.

Nematode Management in Walnut
Tuesday, November 30, 2021
12:00pm – 4:00pm
Kearney Agricultural Research and Extension Center,
9240 S. Riverbend Ave., Parlier, CA 93648
Registration for this event is required: https://surveys.ucanr.edu/survey.cfm?surveynumber=35743.
The event is limited to 100 people.

Nematode Management in Almond
Wednesday, December 1, 2021
8:00am – 12:00pm
Kearney Agricultural Research and Extension Center,
9240 S. Riverbend Ave., Parlier, CA 93648
Registration for this event is required: https://surveys.ucanr.edu/survey.cfm?surveynumber=35743.
The event is limited to 100 people.

SJC and Delta Field Crops Meeting
Friday, January 14, 2022
8:00am – 12:00pm
SJC Cabral Agricultural Center
2101 E. Earhart Ave. Stockton, CA 95206
Save the date! More information to come on the Delta Crops blog: https://ucanr.edu/blogs/sjcfieldcrops/.
Contact: Michelle Leinfelder-Miles, 209-953-6100 or mmleinfeldermiles@ucanr.edu.

Northern San Joaquin Valley Tomato Production Meeting
Thursday, February 3, 2022
8:00am – 11:00am
Modesto Centre Plaza/DoubleTree Hotel, 1000 L St., Modesto, CA 95354
in conjunction with the California Tomato Growers Association Annual Meeting
For info on educational portion, contact Scott Stoddard (209) 385-7403 or csstoddard@ucanr.edu.
For info on CTGA luncheon meeting and exhibition contact CTGA (916) 925-0225 or info@ctga.org.

UC Nitrigen Management Course Online
Registration open to all interested parties starting November 8th

Are you interested in learning more about Nitrogen Management? Are you a Certified Crop Advisor seeking Continuing Education Units and/or preparing for the new California Nitrogen Specialty Exam? Have your grower clientele asked you if you are eligible to sign off on a Nitrogen Management Plan? Registration for the UC Nitrogen Management course is now open at http://ucanr.edu/NitrogenCourse. The UC Nitrogen Course is taught online through a video series delivered by UC Researchers and Extension Specialists. Each module is eligible for Certified Crop Advisor (CCA) continuing education units (CEUs). The course is open to anyone interested in learning more about N management in California.

The curriculum addresses all the learning objectives set forth by the American Society of Agronomy (ASA) for the new California Nitrogen Management Specialty Exam. The video series opens next week November 8, 2021.

Register at http://ucanr.edu/nitrogencourse/. You may join the course at any time up until December 31, 2021. For more information contact Sat Darshan Khalsa at sdskhalsa@ucdavis.edu or 707-205-7007 or visit their FAQ page [https://ucanr.edu/sites/nitrogencourse/FAQ/].

SEEKING FARMERS

HELP SAVE BIRDS BY FLOODING YOUR FIELDS AND GET PAID TO DO IT!

APPLY BY NOVEMBER 15

Short-term flooding for the BirdReturns-Delta Farmlands Program

The BirdReturns Program creates short-term wetland habitat that migratory birds desperately need by paying farmers to flood their fields. Since 2014, BirdReturns has generated over $2 million in direct payments to farmers and created over 60,000 acres of seasonal wetland habitat. **Apply at BirdReturns.org! BIDS NOW DUE ON NOVEMBER 15!**

WHO IS ELIGIBLE?

Farmers with row or field crops who can manage shallow flooding in the Sacramento-San Joaquin Delta Region *(see map on page 2)*.

WHAT IS REQUIRED?

Manage crop stubble post-harvest, flood and hold water for a minimum of 35 days between **December 1, 2021** and **April 30, 2022**. Flooding periods start the first Monday of each month.

HOW AND WHEN TO APPLY?

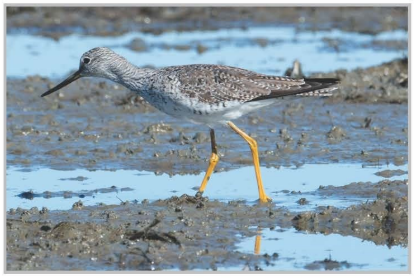
Submit an easy 1-page online bid form at BirdReturns.org with the field location, preferred timing and duration of flooding (35 days +), crop type of harvested fields, and your best price per flooded acre. **Application Period opens Monday, Oct. 11, 2021** and **closes Monday, Nov. 15, 2021, at 12 noon at birdreturns.org.**

WHY IS THIS PROGRAM IMPORTANT TO FARMERS?

- Millions of ducks, geese, swans, cranes and shorebirds depend on wetland habitat in the Central Valley. With post-harvest flooding, privately owned farmlands create surrogate wetland habitat that migratory birds now depend on as they make their long journey from Alaska to California and beyond, then back again in the spring.
- California's Sacramento-San Joaquin River Delta is an important place for waterbirds and the drought is dangerously reducing wetland habitat
- Shorebirds are in steep decline, and if they don't get a place to stop and rest during migration this year, population levels may drop even further
- Without our help, other waterbirds that overwinter in the Delta are also likely to suffer including the iconic Sandhill Crane

FOR MORE INFORMATION, GO TO BIRDRETURNS.ORG OR CONTACT US:

- Dawit Zeleke at 530-518-7244 dzeleke@tnc.org
- Julia Barfield at 916-449-2852 jbarfield@tnc.org

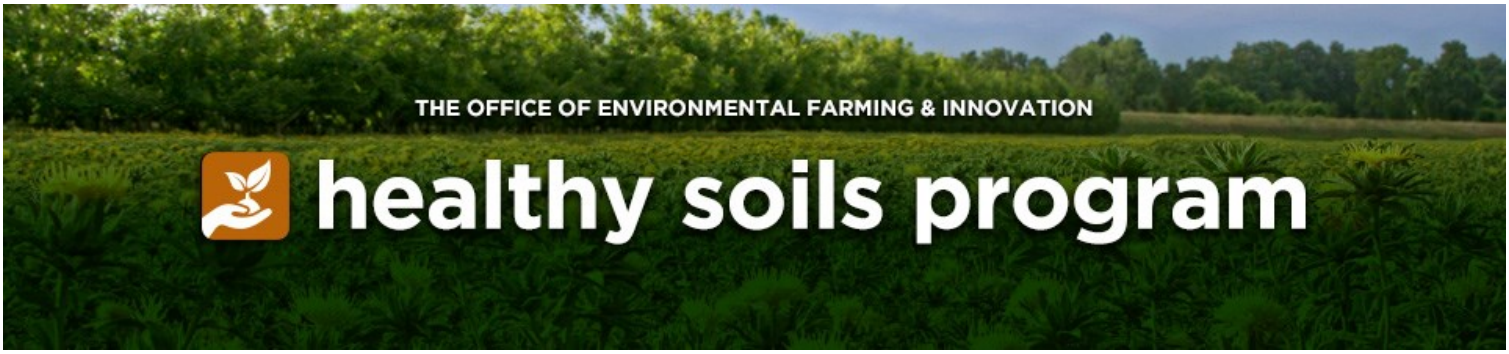


The Nature Conservancy

SACRAMENTO - SAN JOAQUIN DELTA CONSERVANCY
A California State Agency

Point Blue Conservation Science

Audubon CALIFORNIA



The California Department of Food and Agriculture (CDFA) is now accepting applications for its Healthy Soils Program (HSP). The program incentivizes implementation and demonstration of on-farm soil health practices that sequester carbon, reduce greenhouse gases, and improve soil health. CDFA appropriated $75 million from the General Fund and the Greenhouse Gas Reduction Fund (GGRF) through the Budget Act of 2021 to support the HSP.

“We are excited to offer a significant amount of funding toward the effort of building soil health on California’s farms and ranchers”, said CDFA Secretary Karen Ross. “It is a much-needed step toward climate change mitigation and resiliency especially after a one-year funding gap due to the COVID-19 pandemic.”

HSP Incentives Program
The HSP Incentives Program will accept applications on a rolling basis until 5 p.m. PT on Friday, February 25, 2022 or until available funds are expended, whichever is earlier. California farmers and ranchers, as well as federal and California-recognized Native American Tribes are eligible to apply. For additional information on eligibility and program requirements, prospective applicants should visit www.cdfa.ca.gov/oefi/healthysoils/incentivesprogram.html.

CDFA will hold three no-cost webinar-based workshops to provide information on incentive program requirements and the application process. Participants can attend remotely by registering for webinar access:

• Thursday, November 18, 2021 9:00 a.m. – 11:00 a.m. PT

• Thursday, December 16, 2021 9:00 a.m. – 11:00 a.m. PT

• Thursday, January 20, 2022 9:00 a.m. – 11:00 a.m. PT

Registration link: https://us06web.zoom.us/webinar/register/WN_p6Kxg55GTbSdXU5ddpsNGw

Attendees can register once and attend any of the webinar sessions.

Additionally, there is free technical assistance for prospective incentive program applicants provided by CDFA-funded Technical Assistance Providers and Climate Smart Agriculture Community Education Specialists at the University of California Cooperative Extension. For details, please visit: https://www.cdfa.ca.gov/oefi/healthysoils/IncentivesProgram.html and https://www.cdfa.ca.gov/oefi/technical/index.html.

The Healthy Soils Program is part of California Climate Investments, a statewide program that puts billions of Cap-and-Trade dollars to work reducing GHG emissions, strengthening the economy, and improving public health and the environment – particularly in disadvantaged communities. The Cap-and-Trade program also creates a financial incentive for industries to invest in clean technologies and develop innovative ways to reduce pollution. California Climate Investments projects include affordable housing, renewable energy, public transportation, zero-emission vehicles, environmental restoration, sustainable agriculture, recycling and much more. At least 35 percent of these investments are located within and benefiting residents of disadvantaged communities, low-income communities and low-income households across California. For more information, visit the California Climate Investments website at *www.caclimateinvestments.ca.gov*.

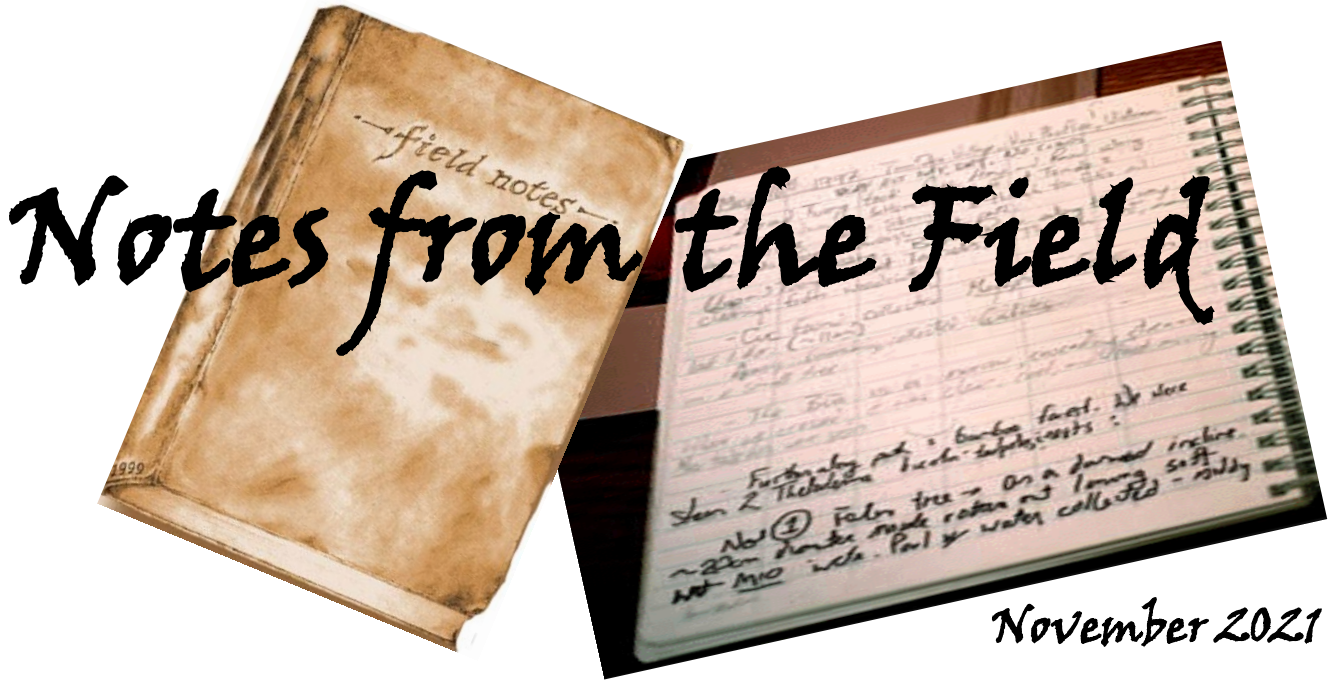
cdfa CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE
Healthy Soils Program

UC CE

University of California
Agriculture and Natural Resources

Cooperative Extension
San Joaquin County

2101 E. Earhart Ave., Suite 200
Stockton, CA 95206-3949



Notes from the Field

November 2021

The University of California working in cooperation with San Joaquin County and the USDA.