

Field Notes

San Joaquin County
August 2023

University of California
Agriculture and Natural Resources

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Meet Our New Advisor, Giuliano Galdi



My name is Giuliano Galdi, and I am the new Agronomy and Weed Management Advisor located in Merced County, also with responsibilities in Stanislaus and San Joaquin counties. In San Joaquin County, my primary responsibility will be in weed management. I received my B.S. in Agricultural Engineering at the University of Sao Paulo and my M.S. degree in Plant Sciences at California State University, Fresno.

I'm back in the San Joaquin Valley after spending four years of my early career as the Agronomy and Crops Advisor in Siskiyou County. My previous research and extension program in Siskiyou County was focused on alfalfa, pasture, small grains, pest control, and water management. I worked on projects such as cool season perennial grass deficit irrigation, dryland small grain and alfalfa variety trials, winter groundwater recharge, Roundup Ready alfalfa injury, and soil moisture sensing.

My first goal in this new position is to understand the needs of my local clientele and tailor my research program accordingly. My ultimate objectives are to be a source of science-based information, guarantee sustainable and long-lasting agriculture, and help to protect natural resources. Collaborating with growers, PCAs, and industry partners is key to a successful research program, so I look forward to meeting my clientele and integrating with the counties' community.

Giuliano Galdi, Agronomy and Weed Management Advisor, Merced, Stanislaus, and San Joaquin counties

Field Diagnostics in Field Crops

Diagnosing problems in the field is never an easy task, but it is one of the most interesting aspects of my job because I usually never encounter the same set of circumstances twice. This summer, I have been called out on a few interesting diagnostics calls, and I wanted to share some observations.

I visited a blackeye bean field that was planted at the end of June. Since June was unusually cool this year, the grower's planting was delayed. Blackeyes shouldn't be planted until the soil temperature reaches at least 65 degrees F, and the cool spring conditions kept the soil cool. About six days after planting, the beans were only sporadically emerged. The plants that had emerged looked healthy, but the overall stand was poor. The grower said that soil moisture was good at the time of planting. I scratched down and found the seed about three inches deep, which is perhaps a little bit deep for blackeyes. Seed had germinated, and the germinated seed looked healthy with no apparent seedling diseases. Seedling diseases include Pythium and Rhizoctonia. Pythium symptoms appear as [water-soaked lesions](https://ipm.ucanr.edu/PMG/P/D-BN-PYSP-ST.001.html) (https://ipm.ucanr.edu/PMG/P/D-BN-PYSP-ST.001.html), and the hypocotyl eventually 'dampens off'. Rhizoctonia symptoms appear as [reddish-brown lesions](https://ipm.ucanr.edu/PMG/R/D-BN-RSOL-ST.017.html) (https://ipm.ucanr.edu/PMG/R/D-BN-RSOL-ST.017.html) that can girdle the stem. We felt better that it didn't appear to be a disease problem. I reached out to my farm advisor colleague, Rachael Long, to get her take on the situation, and she agreed that this was likely delayed emergence due to cool soil and a deeper planting depth. In the end, we decided to test our patience, wait a few more days, and see what would happen. After another five days, the grower let me know that the plants had emerged, and the stand looked good!

In mid-July, I was walking through a rice field and observed reddish-brown spotting on leaves that were above the water (Figure 1 pg. 2), and older leaves had turned brown and were in the water. I thought about stem rot, which is a disease we have observed on some Delta farms, but I wasn't observing black lesions at the water line. I contacted my colleague, Luis Espino, who has done disease

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management work in the Sacramento Valley. He didn't think the symptoms resembled a disease, but rather, a nutrient deficiency, like possibly potassium. I think a potassium deficiency is a reasonable hypothesis. We know that soil potassium is low in some Delta soils. Also, potassium is removed from the system in large quantities after harvest, especially in fields where the straw is baled. UC Rice Specialist, Bruce Linquist, has researched this and summarized it in this [fact sheet](https://agronomy-rice.ucdavis.edu/sites/g/files/dgvnsk11966/files/inline-files/328498.pdf) (<https://agronomy-rice.ucdavis.edu/sites/g/files/dgvnsk11966/files/inline-files/328498.pdf>). For a 90-cwt yielding crop, approximately 26 lb K/ac is removed in the grain, but about 28 lb K/ac is removed for **every** ton of straw. At this field, we advised leaf tissue testing. Between tillering and panicle initiation, the Y-leaf should have a K concentration of at least 1.5%. At heading, the flag leaf should have a K concentration of at least 1.2%. Bruce has also created a [fact sheet](https://ucanr.edu/sites/RiceTestSite/files/330509.pdf) (<https://ucanr.edu/sites/RiceTestSite/files/330509.pdf>) on rice tissue nutrient concentrations. If growers are baling straw, I would advise soil sampling to determine whether soil K concentrations are declining over time.

In late July, I visited a corn field with my new Agronomy Advisor 'neighbor', Giuliano Galdi. Throughout much of the field, there were plants that were drying up and dying. We didn't have a soil analysis, and what information we had on field history was limited. We noticed that manure had been applied to the field. One of our initial thoughts was salinity injury, but the symptoms didn't seem quite right. With salt damage, we would have expected to see necrosis along the leaf margins. Instead, what we were observing were leaves that were fused and unfurled (Figure 2). We called our colleague, Nick



Figure 1. Leaf spotting on rice from suspected K deficiency.



Figure 2. Suspected heat damage on corn due to hot soil temperatures at emergence.

Clark, and Nick noted that he had observed symptoms like this in the southern San Joaquin Valley. He noted that when extreme weather heats up the soil, it can cause these symptoms when the plants emerge. Symptoms will vary based on the amount of plant emergence when the hot weather (i.e. hot soil) occurs. If the growing point of the plant is above the soil at the time of the heat, the plants may only have minimal damage, like a band across the older leaves. However, we suspect that the burned-up plants met their demise because the growing point was at the soil line at the time of the heat. Of course, it wouldn't hurt to get the soil analyzed just to make sure there aren't other conditions impacting the crop.

The UCCE network has a breadth of experience to help identify problems and provide potential management solutions. Please don't hesitate to contact me if you'd like help with diagnosing problems in the field.

Michelle Leinfelder-Miles, Delta Farm Advisor

UC ANR Announcements and Calendar of Events

UC Dry Bean Field Day
Tuesday, August 15, 2023
9:30am – 11:30am
UC Davis, Bee Biology Road (38.537080, -121.787661), Davis, CA 95616
Contact: Michelle Leinfelder-Miles, mmleinfeldermiles@ucanr.edu
See attached agenda.

Nematode Management in Walnut: Field Visit
Thursday, August 17, 2023
Event begins at 8:00am
26165 E. River Rd., Escalon, CA 95320
Contact: Brent Holtz, baholtz@ucanr.edu
See attached flyer.

Field Workshop for Rice Growers
Wednesday, August 23, 2023
10:00am – 12:00pm
Staten Island, 23319 N. Staten Island Rd., Thornton, CA 95686
Contact: Michelle Leinfelder-Miles, mmleinfeldermiles@ucanr.edu
See attached agenda.

Rice Experiment Station Annual Field Day
Wednesday, August 30, 2023
7:30am-12pm (lunch included)
Rice Experiment Station, 955 Butte City Hwy., Biggs, CA 95917
For more information, visit <https://crf.org/event/california-rice-experiment-station-field-day/>.

UC Alfalfa and Forage Field Day
Friday, September 29, 2023
7:30am-12:30pm (lunch included)
Kearney Agricultural Research and Extension Center, 9240 S. Riverbend Ave., Parlier, CA 93648
Contact: Michelle Leinfelder-Miles, mmleinfeldermiles@ucanr.edu

Western Alfalfa and Forage Symposium
December 12-14, 2023
Sparks, NV
For more information and to register, please visit: <https://calhaysymposium.com/>.

UC Dry Bean Field Day

Tuesday, August 15, 2023

9:30am – 11:30am

UC Davis, [Bee Biology Road](#) (38.537080, -121.787661), Davis, CA

Agenda

- | | |
|---------|--|
| 9:30am | Sign-in, welcome, and introductions
Christine Diepenbrock and Antonia Palkovic, UC Davis
Michelle Leinfelder-Miles, UC Cooperative Extension |
| 9:35am | How can we further improve lima bean? A project funded by the USDA to improve breeding resources
Paul Gepts, UC Davis |
| 9:50am | Walk through and discussion of lima breeding material
Antonia Palkovic and Christine Diepenbrock, UC Davis |
| 10:00am | Field diagnostics – bean pest identification and management
Sarah Light, Michelle Leinfelder-Miles, Nick Clark, UC Cooperative Extension |
| 10:30am | Travel to Veg Crops location (38.534222, -121.782222) |
| 10:35am | Blackeye varietal improvement: update on new pest-resistant varieties
Bao-Lam Huynh, UC Riverside |
| 10:55am | Results from round one of “speed breeding”, and testing nutritional alongside agronomic traits in limas
Christine Diepenbrock, UC Davis |
| 11:00am | From farm to (robot) stomach: what are the trait profiles of California beans after harvest?
Tayah Bolt, UC Davis |
| 11:05am | Screening for drought resilience in common and tepary beans
Matthew Gilbert, Tom Buckley, Troy Magney, Paul Gepts, Chris Wong, Antonia Palkovic, Travis Parker, UC Davis |
| 11:20am | Evaluating productivity and quality of cowpea and interspecific common/teparry bean in Davis and Parlier (contrasting temperatures)
Sassoum Lo, Jonny Berlinger, UC Davis |
| 11:25am | Developing low-cost phone apps/drone and rover platforms to measure agronomic traits
Earl Ranario, Heesup Yun, Vivian Vuong, UC Davis |
| 11:30am | Discussion and evaluation |

DPR continuing education credits approved (1.0). CCA credits approved (1.0 PM, 1.0 CM)

Our programs are open to all potential participants. Please contact UCCE San Joaquin County (209-953-6100) if you require special accommodations. The University of California Division of Agriculture & Natural Resources (ANR) prohibits discrimination or harassment of any person in any of its programs or activities. (Complete nondiscrimination policy statement can be found at <http://ucanr.org/sites/anrstaff/files/107778.doc>). Inquiries regarding ANR's equal employment opportunity policies may be directed to University of California, Davis, Agriculture and Natural Resources, 2801 Second Street, Davis, CA 95618-7774, (530) 752-0495.



Field Visit: Nematode Management in walnut



Where?: Robert Longstreth Farming operation, 26165 E. River Rd, Escalon, CA 95320



When?: August 17, 2023 8:00 AM

Who?: Field research representatives, farm advisor, PCAs, growers, consultants DPR credits (CEU other(O): 1.0 hour pending)

What?: Pre-plant soil treatments followed by post-plant treatments:

- * Non-treated
- * Dominus (biofumigant)
- * Velum One
- * ASD -- Brassica cover crop
- * ASD – Sudangrass ‘Piper’
- * Telone-chloropicrin co-applied
- * Salibro
- * ASD -- Rice bran
- * ASD -- Sunnhemp (Crotalaria)

For questions about this event contact Andreas Westphal # 559 646 6555

The gracious support by Robert Longstreth (Growers Choice), several chemical companies, UCANR and the California Walnut Board, nurseries, and TriCal, NIFA-Hatch 1010599, made the experiment possible.



August 23, 2023, 10 am -12 pm Field Workshop for Rice Growers **Workshop will be held at Staten Island, 23319 N Staten Island Rd, Thornton, CA**

Staten Island, with funding through the Fish Friendly Farming Program, Delta Conservancy and State Water Resources Control Board, has installed a water recirculation pump to allow rice growing with less water. Come and see this project and discuss how state funds might be used to fund more of these pumps to reduce water needs for rice growing. Our agenda will be:

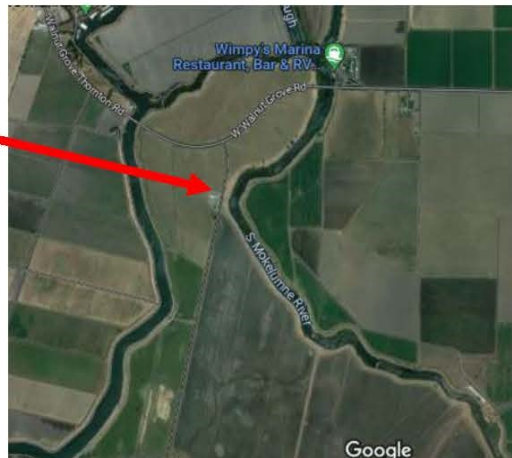
1. Introductions
2. Fish Friendly Farming and Delta Conservancy/Regional Board funding – Laurel Marcus, Fish Friendly Farming
3. Recirculation pump system - how the new system works and the economics of using one of these systems – Jerred Dixon, Farm Manager Conservation Farms and Ranches
4. Discussion of recirculation system and questions and answers - all
5. Can funding programs such as SWEEP or others be used for recirculation pumps and pipelines – Laurel Marcus
6. Bird Returns Program - Julia Barfield
7. UC Cooperative Extension Programming in Delta rice– Michelle Leinfelder-Miles, Delta Crops Resource Management Advisor



Please RSVP to connorb@fishfriendlyfarming.org

For more information contact Laurel Marcus at laurelm@fishfriendlyfarming.org, 7078692760

Park on Staten Island next to the grain silos. We will travel to the project site from there





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