



In This Issue

- Weedy Rice Workshop
- Mid-season arthropod and disease update
- 2021 Season Update
- Propanil 101: Do's and Don'ts
- Annual California Rice Field Day

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Weedy Rice Workshop: 2021

August 3, 2021

UCCE Sutter-Yuba Office
142A Garden Highway, Yuba City

Meeting Agenda

9:00–9:30 am	Research Updates 2020-2021 (Whitney Brim-DeForest, CE Rice Advisor)
9:30–10:00 am	Weedy Rice Survey 2020 (Luis Espino, CE Rice Advisor)
10:00-10:15 am	Weedy Rice Identification (Luis Espino, Whitney Brim-DeForest, CE Rice Advisors)
10:15–10:30 am	—BREAK— (plants to view)
10:30–10:45 am	Non-conventional Path to Pesticide Registration (Roberta Firoved, California Rice Commission)
10:45-11:00 am	Preventing Spread of Weedy Rice with Certified Seed (Timothy Blank, California Crop Improvement Association)
11:00-11:15 am	Weedy rice emergence under various environmental conditions (Liberty Galvin, PhD Candidate, UC Davis)
11:15 am	—LUNCH—

This project is sponsored with funding from the California Rice Commission.

CE credits (CCA, DPR) pending



Mid-season arthropod and disease update

Luis Espino, Rice Farm Advisor, Butte and Glenn Counties

Rice seed midge

This year there were several reports of reduced stands due to rice seed midge. Midges are small flies that look like mosquitoes but do not bite. They swarm over water and lay their eggs on the surface of flooded rice fields. Larvae emerging from these eggs establish themselves in the mud and can feed on diatoms, algae, and other vegetation. Midge larvae build protective silken cocoons that get covered with algae and mud; they can be seen on the surface of the mud. When rice is seeded, midge larvae attach the cocoons to the seed and feed on the seed content, resulting in hollow seeds. They can also clip roots and shoots, just like tadpole shrimp does, and can feed on leaves after seedlings are established. This feeding does not cause damage.



Midge cocoons in the surface of the soil near injured seeds



Hollowed rice seed and rice seed midge.

Midge injury tends to be spotty, affecting only sections of fields. Damage by midge is unpredictable; however, it seems more common in late planted fields due to higher temperatures during late spring. Higher temperatures coupled with long flood times can give the midge enough time to develop and begin feeding on rice seeds as soon as fields are seeded. Management of midge is difficult. If damage is detected soon after seeding, draining the field will kill the midge larvae. It is unclear how effective insecticides used soon after seeding are against midge.

Bakanae

Higher than usual levels of Bakanae were also reported this spring. In some cases, Bakanae was detected in fields planted with seed that had been treated with sodium hypochlorite. If treated seed is held for long before seeding (for example, waiting for wind to die down), the temperature in the holding tank can increase, leading to the Bakanae pathogen to produce spores and spread in the seed, even if it was treated. Bakanae is mostly a seed-borne pathogen, but it has been documented that the pathogen can survive in the soil. However, its survival in soil is low, leading to low infections in the field.

Armyworms

The number of moths caught in the pheromone traps this year are much lower than in the previous three years. In 2018, 2019, and 2020, the Sacramento Valley average peak armyworm moth catches per day were 26, 27, and 30, respectively, which occurred during the last week of June and first week of July. For 2021, our average for the last week of June was 6 moths per day (but most sites had lower counts than the average). This is a good indicator that armyworm defoliation may not be an issue this year.

Blast

The past two years have seen high levels of blast in the northern part of the Valley, especially in Glenn and Butte Counties. One reason that may have contributed to higher levels of blast is the occurrence of heat waves during July and August. Warmer nighttime temperatures, coupled with dew formation during the early hours of the morning, allow for blast spores to germinate and infect plants. During cool nights, blast spores germinate slowly and are not able to produce an infection before the dew dries.

Usually, leaf blast starts in areas of the field with high N levels, such as N overlaps. In general, it is not recommended to treat leaf blast. Presence of leaf blast should be taken as an indication that a heading fungicide treatment will be needed. If leaf blast is severe, a strategy that can help reduce the production of spores that can infect panicles later is to use a fungicide in areas of the field where most of the leaf blast infections occur (basically, treating the headlands). However, blast can move with air currents, and infected fields nearby can serve as inoculum sources. Even if headlands are treated, a heading treatment is recommended when leaf blast was present.

M-210 is resistant to blast. However, we will be monitoring M-210 fields in Glenn and Butte Counties to confirm that no blast is developing in this variety. If you are growing M-210 in these counties or in fields with a history of blast, let me know (laespino@ucanr.edu or 530-635-6234).

2021 Season Update

Bruce Linqvist, UCCE Rice Specialist

Early planting

With the dry spring and favorable weather, planting got off to an early start. According to USDA statistics, 50% of the rice area was planted by May 7. That is almost a week earlier than the long-term average (May 13). The planting date may have been considerably earlier had it not been for some problems in water deliveries (for flood-up) early in the season. Early planting dates, along with what is appearing to be a warmer than normal season, will mean earlier harvest. Furthermore, in the short term, the critical time during booting when plants are susceptible to blanking will also occur about a week earlier than normal. The critical time period for early duration medium grains planted on the average date (May 13) is mid-July to end of July. Temperatures below 58 F during this period can cause blanking. To help protect against this, raise water between PI and heading to help “blanket” the emerging panicle.

Thinking about this upcoming winter

It is not too early to start thinking about the upcoming winter. Everything I have been hearing is that there is going to be limited or no water available for straw decomposition. If you are in a position where you do not have water and you cannot burn or bail the straw, it will be important this year to make extra effort to incorporate your rice straw. The goal is to achieve good soil-straw contact. This may mean chopping and an extra pass over the field with a disc. The good news is that if you are able to do this, the rain we get will usually provide adequate moisture for decomposition of the straw during the winter months. You want to avoid leaving all the straw on the surface. Also, on the positive side, given the early planting date, harvest will be earlier (if no rain) and give more time to do three additional operations.

Yield Contest

This year we will again be running the UCCE Rice Yield Contest. Information will soon be on our website (<http://rice.ucanr.edu/>), although the rules are similar to previous years. You will also be able to register in-person at the field day on August 25 at the Rice Experiment Station. We are grateful to our sponsors who have provide funds for this contest so that we are able to again offer a John Deere Gator as a prize to the winner. We look forward to your participation!

Propanil 101: Do's and Don'ts

Whitney Brim-DeForest, UCCE Rice Advisor

Luis Espino, Rice Farm Advisor, Butte and Glenn Counties

Roberta Firoved, CRC Industry Affairs Manager, California Rice Commission

Propanil is a powerful tool in our herbicide arsenal in California rice. It has wide-spectrum control, controlling many grass, sedge, and broadleaf species. However, in the past few years, several issues have been coming up, particularly in regards to keeping it as a tool in our toolbelt for California rice. We do not want to lose propanil as a tool, either due to regulatory issues, or due to increasing resistance issues.

Herbicide resistance:

There are several weed species that are already resistant to propanil, including smallflower umbrella sedge and ricefield bulrush (roughseed). As a reminder, resistance is likely to occur when we apply the same mode of action or same herbicide, more than once in a season, or over consecutive years, over more than one season. In both smallflower and bulrush, we have populations that are resistant to propanil and another herbicide mode of action (mostly ALS-inhibitors, like Granite GR/SC, Londax, and Halomax). This occurs because propanil is typically utilized as the last clean-up spray of the season. If a weed is sprayed with an herbicide early in the season, but is resistant to that herbicide, and then is sprayed later in the season with propanil, there is a possibility that the weed may be resistant to propanil as well (naturally occurs in the population). When we always use propanil as the cleanup spray, we increase the chances of having weed species that are resistant to multiple herbicides, with resistance to propanil being “stacked” onto resistance to the first herbicide.

While we know we already have populations that are multiple herbicide resistant in both bulrush and smallflower, it is very likely that we may soon see this in watergrass populations. In fact, it is increasingly likely, as we are seeing double-propanil applications in many parts of the rice-growing region.

Complications of applications with other products:

The propanil label lists several products that should not be applied with propanil, namely certain insecticides. The reason that these are put on the label is because in combination with propanil, they can overcome the rice plant's ability to metabolize propanil. When we utilize these products in combination with, or closely following propanil, there is a high risk of significant injury to the rice, including death of rice plants. Please make sure to follow the label, and do not apply these insecticides either as a tank-mix with propanil or soon after (refer to the label).

What can we do to overcome resistance issues?

As watergrass, in particular, gets tougher to control, there are some things to keep in mind. We need to do our best to overwhelm the grasses' ability to metabolize the herbicides, and use cultural controls as well.

Some tips include:

- Using tank mixes of multiple products, as early as possible in the season
- Utilizing a stale seedbed on badly infested fields
- Applying multiple granular products early in the season (at the same time or in close succession)
- Utilizing pre-plant herbicides
- Deep water at the beginning of the season will help to suppress grasses (watergrass, barnyardgrass, and sprangletop)
- Utilizing Abolish+Regiment tank-mix as a clean-up, instead of propanil, as a rotational option

We all need to do our best to try to keep the products we have in California rice as long as we can, and part of that is by being good stewards of these products. If you would like to discuss some alternative weed management plans, please give Whitney a call.



Save the Date!

ANNUAL CALIFORNIA RICE FIELD DAY AUGUST 25, 2021

The annual Rice Field Day will be Wednesday, August 25, 2021, at the Rice Experiment Station (RES), Biggs, California. We cordially invite you and your associates to join us for this event. The purpose of the Rice Field Day is to give rice growers and others an opportunity to observe and discuss research in progress at RES. Rice Field Day is sponsored by the California Cooperative Rice Research Foundation (CCRRF) and University of California (UC). We also seek and receive support from many agricultural businesses and are planning a rice equipment vendor display. Following is a brief outline of the Rice Field Day program. We will update the program on our web page at www.crrf.org.

7:30 - 8:30 A.M. REGISTRATION

- *Posters and Demonstrations*

8:30 - 9:15 A.M. GENERAL SESSION

- *CCRRF Annual Membership Meeting*
- *Rice Research Trust Report*
- *California Rice Industry Award*

9:30 - NOON

FIELD TOURS OF RICE RESEARCH

- *Variety Improvement*
- *Disease Resistance*
- *Insects and Control*
- *Weeds and Control*

12:00 - NOON

LUNCH

The program will begin at 8:30 a.m. with a General Session that serves as the Annual CCRRF Membership Meeting. Posters and demonstrations will be in place during registration until after lunch. Field tours of research will emphasize progress in rice variety improvement, disease, insect, and weed control. The program will conclude at noon with a lunch that includes rice.

We hope to see you August 25th. The RES is located at 955 Butte City Highway (Hwy. 162), approximately two and one half miles west of Highway 99 north of Biggs, California.