

**University of California**

Agriculture and Natural Resources | Cooperative Extension

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Colusa County

Red Alert!

This year, more acres have been found infested with weedy rice (a.k.a. red rice) than in the previous two decades (maybe longer). Approximately, 8,000 rice acres have been confirmed as infested so far. The levels of infestation vary, from a few plants in some fields to hundreds of plants in others. Affected growers are making great efforts to eliminate infestations, but roguing hundreds of plants can be challenging. This problem is going to be with us for some time.

There are still many questions regarding the origin and spread of this weed. These questions will be addressed in time, but right now the most important task is to identify affected fields so that proper management can be implemented. Because weedy rice is the same species as cultivated rice, there are no regulatory implications if a field is infested.

The University of California Cooperative Extension will be working with affected growers to develop management programs for this weed. We have received funding from the California Rice Research Board to monitor populations and assess the effectiveness of in- and off-season practices.

Based on what we know about the biology and ecology of red rice, we have developed management guidelines that can help reduce the problem. These guidelines will be refined as we gain more knowledge.

For more information on weedy red rice, including pictures, presentations, and management guidelines, visit the UC Rice On-line website at

<http://rice.ucanr.edu>



Weedy Red Rice
Pictures &
UCCE red rice
identification guide

Best Management Practices for Weedy Red Rice
University of California Cooperative Extension

To prevent and eliminate infestations, follow these guidelines:

Equipment:

- Equipment coming into California from areas known to have red rice infestations will be subject to inspection by the County Ag Commissioner in the destination county.

Planting:

- Only use certified seed.
- Do not use infested field as a seed field.

During the season:

- Red rice plants are easiest to identify at the heading stage.
- For minor infestations, rogue red rice plants from the field. Be careful not to shatter red rice seeds while handling headed plants. Bag headed plants for transportation out of the field and dispose of in an appropriate manner (burn them or put in dumpster).
- For larger infestations, a burn down herbicide such as glyphosate may be used to kill red rice plants. Work with your Agricultural Commissioner to ensure compliance with pesticide use regulations.
- Keep the water on the field with no drainage during the season. Red rice germination is promoted when water is drained from field for stand establishment, foliar herbicide applications, etc.

At harvest:

- The affected field may be harvested but make sure you do not contaminate other fields by moving equipment that may carry red rice seed from one field to the next.
- The best option would be to harvest the affected field last in your sequence.
- If harvesting the affected field last is not possible, clean all harvesting equipment thoroughly before moving from the affected field to the next field.
- Straw should be cut as low as possible to the ground to facilitate burning.
- Make sure paddy rice does not get into the seed channel. Minimal moving and mixing of grain should help ensure this.

After harvest:

- Harvesting equipment (combine, bank outs, trailers, etc.) should be thoroughly cleaned *in affected field* to make sure there is no carry over of red rice seed to other fields.
- Cleaning procedures should include the removal of all plant material from the equipment including mud from tires or tracks that may contain seeds.

Winter management:

- If possible, burn straw in affected field. Prioritize burning fields with red rice infestations before burning other fields. Prioritization of infested fields will occur at the county level, so notify your County Ag Commissioner if your field is infested.

- If straw was not cut as close to ground as possible at harvest, cut straw close to ground to reduce the amount of green plant material to obtain an effective burn.
- Spread and fluff-up straw using a rake or other implement to achieve the most effective burn possible.
- Burn field on day when conditions are most favorable for achieving an effective burn. A slow and intense burn is the most effective to kill red rice seeds.
- Come back after the burn into affected areas with a propane burner (used in orchards for flaming weeds) to burn exposed seeds on the soil surface. This will provide more heat to destroy seeds than the open field burning.
- Propane burner use will be more effective after removal of the majority of the plant material by open field burning and is also much safer.
- ***Do not perform*** fall tillage as this may bury red rice seed.
- It is unknown whether or not winter flooding affects red rice seed at this time, so infected fields can be flooded if the grower chooses to do so. Updated information will be forthcoming once more research is done.

Long-term management:

- Fallowing is the best approach to eliminate red rice from a field. Fallowing allows the maximum number of surface seeds to be destroyed. Use tillage or glyphosate on emerged plants.

Fallow management:

- Do not till before flooding in the spring
- Flood, block the drain and then allow the water to subside into the soil
- Wait for red rice to emerge (approximately 2 weeks), then spray with glyphosate.
- About 2 weeks after application of glyphosate, or when soil is dry enough for equipment, disc the soil.
- After discing, relood, block the drain, and then allow water to subside into the soil
- Repeat the glyphosate application about two weeks after red rice seedling emergence

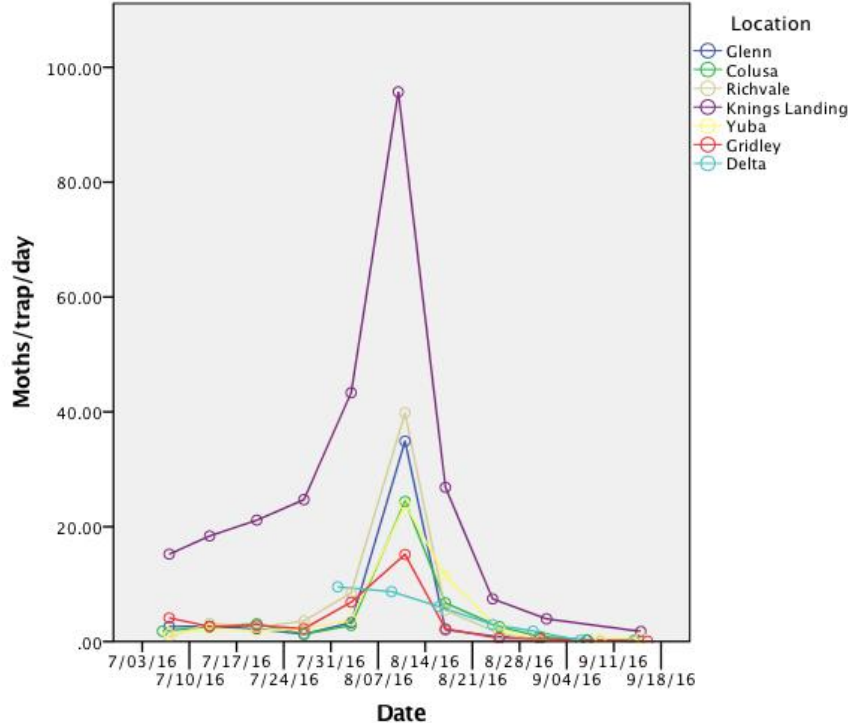
2016 Armyworm Wrap Up

Overall, armyworm infestations were not as severe as last year. At the beginning of the season there were some very early infestations; however, those infestations may have been detected early because growers and PCAs were scouting closely after last year's outbreak. In most cases, the early infestations that were brought to my attention consisted of small worms, which usually go unnoticed until a few weeks later in the season.

In late August, a second infestation peak occurred. However, this infestation was similar to what we see in normal years. Nevertheless, I saw some injury that might have been approaching treatment levels.

The armyworm moth trapping conducted this year started a little later than I wanted. Next year I hope to start trapping in late May or early June so the first armyworm peak can be detected timely. Number of moths trapped remained low until August, when they started to increase and reached a peak in all locations in the Sacramento Valley. The moth peak observed in early to mid August corresponds to the increased injury observed in late August, when eggs laid by those moths reached the 3rd and 4th instars.

This year's moth trapping confirmed what we have seen in previous years: we can use the trap numbers as an indication of when monitoring needs to be intensified. For example, a week after the August peak would have been a good time to check for armyworms. However, injury is not necessarily related to high moth numbers. Even though moth catches at the Knights Landing field were the highest we have ever seen, very little injury was seen in that field. Maybe natural enemies were able to reduce the worm population, or simply moths preferred to lay eggs in the tomato field next door.



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