



## Weedy Rice

Do you know that some type of rice can be a pest in rice fields? Meet weedy rice, the noxious weeds in rice fields worldwide. Unlike other weeds, this weed is the same species as the crop (*Oryza sativa*). In the US, they are more well-known as the red rice, but their color may range from white, red, green, or brown.



They are classified as weeds because they have undesirable traits, e.g. colored husk, easily shatter, and most importantly they produce far fewer yield than the crop variety. Farmers consider rice with these traits as problematic. Consumer prefers white rice, thus rice harvest with colored husk will fetch a lower price. It is estimated that weedy rice infestation cost about US\$274 per hectare.

Although they are found worldwide, weedy rice does not seem to have a common origin. Genetically, weedy rice from the US is closer to US rice cultivar than weedy rice from Southeast Asia. This indicates that gene flow from cultivars plays a very important role in shaping the genetics of local weedy rice. It may also explain why some weedy rice can mimic cultivars with its white husk.

Can we eradicate weedy rice? That would be difficult because they look very similar and whatever chemicals that can kill weedy rice will also kill cultivated rice (remember, they are the same species). A strain of herbicide-resistant cultivars, called the Clearfield® rice, was developed to counter this problem. By coupling this strain with its herbicide, it was hoped that the cultivars will persist while weeds will wither. However, the emergence of herbicide-resistant weeds has been reported in recent years – rendering the technology ineffective.



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What should we do next? It is still an open question. One that needs multidisciplinary efforts to resolve. But perhaps instead of completely eradicating it, we can use it to our advantage. Some weedy rice types are known to be resistant to certain diseases. A recent study even reported disease resistance genes identified from several weedy rice individuals, opening a prospect for the development of disease-resistant rice cultivars.

