

Best Practices to control Red Rice

The main focus on the management plan is to reduce the level of weed seed present in the field (seed bank) and to prevent the introduction or re-introduction of weed seeds in clean fields.

Stale Seed Bed – first plough the field dry and irrigate lightly so as to encourage germination and establishment of red rice seeds present at the upper surface layer. The seedlings should be left to develop to 2-3 leaf stage then destroyed by spraying with glyphosate. This should be repeated to encourage another flush of red rice seeds. This method proves best in reducing the red rice seed bank in the field.

Field sanitation – cleaning of bunds, drains, water channels and immediate environs free from red rice plants will reduce the growing of such plants at those places which would otherwise serve as a reservoir for red rice seeds.

Use clean or certified seeds – clean and certified seeds will have low incidence of red rice seeds. Ideally, seeds for sowing should be free of red rice seeds.

Choice of variety – varieties that have early rapid growth vigour and tolerance to flood will provide an advantage to compete well against red rice establishment. GRDB 9, 11, 12 and 14 are effective varieties that will develop an early crop canopy and suppress red rice establishment.

Increase seed rate – increasing the seeding rate per acre to 160-180 lbs/acre will provide good enough competition against red rice establishment. More seeds mean more plants per unit area, thus eliminating the competitive effect of red rice and other weeds.

Continuous flood – water act as an agent to control red rice and even other grass weeds at a depth of 4 inches. Maintaining a light flooded continuously from sowing until the crop canopy is fully (crop cover up the land) developed will suppress red rice establishment. Suitable varieties that can tolerate flood are GRDB 9, 11, 12, 13 and 14.

Burning of fields – for good burning of straw, encourage low cutting so that straw content increases. Cutting low also encourages clean burning and destroys red rice seeds on soil surface and few centimeters below the surface, thus reducing the seed bank.

Reduce exposure period – the general trend after sowing is to drain the fields within 24 to 48 hours after seeding to encourage good field establishment. If the exposure period after drainage extends further than a week, then this produces an environment that encourages red rice establishment.

Rouging – this process involves the removal of red rice plants as they become identifiable from the cultivated variety. It should be done at earliest possible time as red rice can be identified and before flowering. During flowering, plant should be left undisturbed.

Spot spray on densely populated patches – red rice in dense population whether in strips, patches etc. should be killed using glyphosate in targeted sprays. This is recommended because rice plants may not be present or may be in poor population, thus will not contribute to significant yield loss, thus effecting excellent control of red rice.

Continue rouging before harvesting – after conducting rouging during vegetative and before flowering stages, some red rice may still remain in the field due to difficulty in identification, thus rouging after flowering or during late dough stage is important as this effort will prevent seed shattering and further addition to weed seed bank.

Cleaning of combine harvester – combine harvesters contribute significantly to movement of weed seeds from infested fields to clean fields. It is recommended that combine harvesters are cleaned before entering a non-infested field after harvesting an infested field.



GUYANA RICE DEVELOPMENT BOARD

BURMA RICE RESEARCH STATION

NATIONAL RED RICE MANAGEMENT



Introduction

Red rice, which is locally called “weedy rice” or “jharanga” or “overhead” is a serious weed in the rice production system in Guyana. Due to its similarity to cultivated rice, it is regarded as a problematic weed since its control by chemical means is limited. It possesses a vigorous growth habit, competitive in nature and very high seed producing capacity. Their seed shedding habits even before physiological maturity make it difficult to control and encourages continuous multiplication. Their seeds have long viability even under harsh conditions; seed are also viable soon after development.

Losses caused by red rice.

Weedy rice diminish farmers income quantitatively (yield reduction) and qualitatively (market value). Weedy rice competes with cultivated rice for moisture, nutrients and space resulting in lower crop yield. Due to red pigmented pericarp, an extra milling is required which often cause breakage of grains.

The GRDB recognizes the importance of this weed and a management plan is currently in motion to address it. The plan will focus on the distribution, density, variants of red rice present in Guyana, ecological studies, its management and demonstrations.

Appearance of weedy rice



Red rice can be taller (a) or shorter or of similar height (b) to cultivated rice.



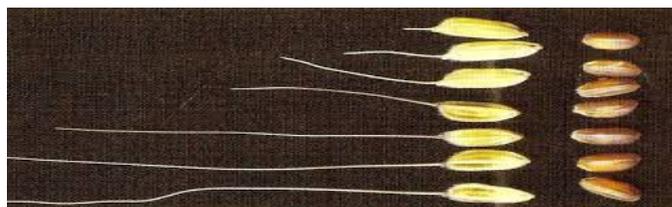
Weedy rice can have either (a) open or (b) closed panicles.



Flag leaves can be (a) erect or (b) droopy



Awn can be long, short or absent



Weedy rice seeds before and after being milled

Objective

To assess the infestation levels, genetic diversity and spread of weedy rice in Guyana, its effect on reduction in grain yield, employ sound management tactics to prevent further spread and reduce infestation levels to give higher production and quality, hence increasing farmers' profitability.

Work Plan for National Red Rice Management Program

1. Conducting country wide demonstrations; some aspects of this activity have already commenced and will be fully implemented during the first crop of 2016.
2. Collection of red rice samples from all rice growing regions. Assessment and survey on acreage and level of infestation, distribution, spread and losses.
3. Training of extension staff, farmers and other stakeholders on the various management practices .
4. Public awareness on the impact of weedy rice with current and newly developed management strategies .
5. A comprehensive review on the origin, diversity, spread, impact of weedy rice and their management strategies conducted internationally.
6. Biological and ecological studies to generate knowledge on the biology and ecology of the variants of red rice.
7. Conduct laboratory, green house and field experiments to develop new and improved technology for the possible eradication, management and reduction in red rice.