

Organic rice of Bangladesh: focus on disease control

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Abstract

Diseases play an important role in rice production. In modern agriculture, application of hazardous chemicals is a common practice all over the world. But organic rice production system does not allow synthetic agro-chemicals due to its adverse effect on environment as well as human health. Thirty six fungal, twenty one viral, six bacterial and six nematode diseases have been recorded in rice. In Bangladesh, 31 rice diseases have been so far identified of which ten are considered as major. Sheath blight, blast, bakanae etc. are the major rice diseases in Bangladesh. Organic amendment works effectively under organic field production. Many researchers have already reported that application of silicon (Si) and potassium (K) reduce sheath blight and blast incidence. Plenty of different types of ashes are available in rural household and rice mills across the country which is the cheap source of Si and K. Application of ashes during final land preparation is a good practice for disease management. Farmer's of northern region of Bangladesh are now applying rice mill ash in their field to control sheath blight disease. Hot water treatment of rice seeds at 54 °C is another option of successful control of bakanae disease and also to increase seedling vigor.

Water management in rice field may be also an effective way of major disease control. Drain out the water helps decreasing sheath blight incidence. On the other hand, stagnant water helps decreasing blast incidence. Organic matter amendment in soil also helps decreasing brown spot disease of rice. There is a great scope on the development of *Trichoderma* based bio-fertilizer that may be used commercially for disease control and to increase rice yield. Bangladesh Agricultural University (BAU) has already developed BAU-bio-fungicides which are *Trichoderma* based. It needs to be commercialized for organic rice production.

Research has been now underway to find an effective and low-cost disease management practice in organic rice production and exploring the performance of cow's urine with water or butter milk and sweet flag (*Acorus calamus*) extract in this regard.