



## Corrigendum

## Corrigendum to “Rice planthopper problems in Asia – Consequences of ecosystem breakdown induced by insecticide misuse” [Crop Prot. 61 (2014) 102–110]



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### Corrigendum for acknowledgement

In Asia today rice's most serious pest problems are rice planthoppers. These devastating pests have caused crop losses of more than 10 million ha. In the 1970s and 1980s, early days of the Green Revolution, planthoppers became major threats and today the same pests have returned with a vengeance, causing even more destruction and misery throughout South and Southeast Asia. Since 2008 Thailand's rice bowl has suffered continuous outbreaks for 14 consecutive seasons. From 2010 rice farmers in Thailand have been losing a million tons of paddy a year due to the planthoppers. Similarly, Indonesia is suffering the same threats and lost about a million tons in 2011. Smaller patches of outbreaks occur in Malaysia, India, Myanmar, Bangladesh, Philippines and India while China continues to lose about 1 million tons a year. In 2012 the southern provinces of China suffered the worst planthopper outbreaks in the last 20 years. Besides economic loss, thousands hundreds of farmers have suffered crop failures, pesticide poisoning and severe debt problems which have forced them into poverty and hunger and even suicides. Planthoppers are secondary pests that are normally under natural control. Outbreaks are symptoms of unsustainable practices that destroy vital biodiversity and ecosystem services triggering exponential population growth resulting in outbreaks. Although abnormal weather like droughts and floods can also trigger outbreaks, the most consistent factor in Asia is insecticide misuse. Insecticide misuse in Asia is due to weak marketing regulations that permit pesticides to be sold as FMCGs (fast moving consumer goods), like tooth paste (Heong et al., 2013; ADB Sustainable Development Working Paper # 27. Asian Development Bank, Manila Philippines). Pesticide retailers are uncertified and often adopt multi-level marketing systems and provide incentives to promote sales. Insecticides are packaged in hundreds of trade names, and mixed into cocktails, further confusing farmers. At the village level retailers often serve as local pest control advisors to farmers as the government extension services are inadequate. When pesticides are marketed to encourage prophylactic applications and overuse it is difficult to sustain attempts to implement IPM. There is an urgent need to prioritize the strengthening of pesticide marketing regulations and their enforcement. Plant protection services in Asia were designed more than 50 years ago for “hunt and kill” operations. Today with increased evidence of the value of ecosystem services, plant protection systems need to be reformed to focus on information, diagnostics and accreditation that can provide reliable information and recommendations to farmers. To strengthen natural control mechanisms ecological engineering approaches that involve biodiversity restoration and conservation may be promoted to enable change (Gurr et al., 2012; *In Biodiversity and Insect Pests: Key issues for sustainable management*. John Wiley & Sons. pp. 214–229).

Heong, K.L., Wong, L. and Delos Reyes, J.H. 2013. Addressing planthopper threats in Asian rice farming and food security: Fixing insecticide misuse. ADB Sustainable Development Working Paper # 27. Asian Development Bank, Manila Philippines.

Gurr, G.M., Heong, K.L., Cheng, J.A. and Catindig, J.L.A. 2012. Ecological engineering against insect pests in Asian irrigated rice. In *Biodiversity and Insect Pests: Key issues for sustainable management*. (eds.) Gurr, G.M., Wratten, S.D., Snyder, W.E. and Read, D.M.Y. UK, John Wiley & Sons. pp 214–229.

DOI of original article: <http://dx.doi.org/10.1016/j.cropro.2013.12.004>.

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<http://dx.doi.org/10.1016/j.cropro.2014.06.010>  
0261-2194