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STORAGE OF FOOD GRAINS IN INDIA UNDER CENTRAL POOL: PRESENT STATUS AND FUTURE STRATEGIES

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ABSTRACT

Sustained crop production efforts have resulted in self sufficiency in food grains in India with production increasing to 257.45 million tonnes during 2011–2012 (advance estimate) comprising of 93.90 million tonnes of wheat, 104.32 million tonnes of rice and the remaining being coarse cereals, pulses, etc. As on July 1, 2012 the total stock of food grains in the central pool was 80.50 million tonnes. Storage capacity available with major storage agencies in the public sector is 54.91 million tonnes thus requiring utilization of private and cooperative sector storage and storing some quantity of food grains in open temporary storage structures. Handling, storage and transportation of food grains in India is done mostly in bags of 50 kg capacity. Food grains are liable to deterioration due to various biotic and abiotic factors. Pre-requisites of scientific storage of food grains for loss minimization is by execution of regular hygiene monitoring, prophylactic, and curative treatments. Popularity of phosphine in India is because of its versatility, ready to use tablet/sachet formulations that allow safe and easy handling, good penetrability and easy to apply correct dose. Limitations of phosphine are: (i) difficulty in selection of correct dose because of wide variation in susceptibility of life stages of different insects (adults being more susceptible than pre-adult stages) and (ii) insect resistance to phosphine has been most marked in the developing countries due to repeated exposure to sub lethal concentration in poorly sealed fumigation chambers, or use of unsuitable and damaged fumigation covers and improper sealing. Strategies for resistance management have been recommended with required phosphine gas dose and monitoring the gas concentration during the extended exposure period. It is, therefore, imperative that the storage agencies and pest control agencies follow best fumigation management practices to avoid control failures.

Key words: Sustained crop production, Central pool, Food grain deterioration, Biotic and abiotic factors, Phosphine popularity, Limitations of phosphine, Insect resistance to phosphine, damaged fumigation covers, improper sealing, sublethal doses, short exposure periods, phosphine gas monitoring.