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RESEARCH REPORTS

SUSTAINABLE AQUACULTURE FOR A SECURE FUTURE

Title: Risks associated with the use of chemicals in pond aquaculture

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Abstract: The most common substances used in pond aquaculture are fertilizers and liming materials. Fertilizers are highly soluble and release nutrients that can cause eutrophication of natural waters. Fertilizers are also corrosive and some are highly explosive, so proper handling is necessary to prevent accidents. Some liming materials are caustic and can be hazardous to workers if proper precautions are not exercised. Liming materials do not cause environmental problems, and liming and inorganic fertilizer compounds do not present food safety concerns. An array of other substances is used less frequently in aquaculture including: oxidants, disinfectants, osmoregulators, algicides, coagulants, herbicides, and probiotics. These compounds or biological products quickly degrade or precipitate. They are not bioaccumulative and do not cause environmental perturbations in natural waters receiving pond effluents. Accidental spills of some substances could cause environmental damage. Most substances used in pond aquaculture to improve soil or water quality present little or no risk to food safety. The use of human wastes in aquaculture or the contamination of aquaculture systems with agricultural or industrial pollution could result in product contamination and food safety concerns. Some substances pose safety risks to workers, explosion or fire hazards, or cause mild pollution.

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