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RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: **Lime application methods, water and bottom soil acidity in fresh water fish ponds**

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Abstract: Although some methods tor determining lime requirement of pond soils are available and commonly used, there is still no consensus on whether it is more effective to apply liming materials to the bottoms of empty ponds or to wait and apply them over the water surface after ponds are tilled. There is also little information on how deep lime reacts in pond sediment over time, and whether the depth of reaction is different when liming materials are applied to the water or to the soil. Therefore, three techniques for treating fish ponds with agricultural limestone were evaluated in ponds with clayey soils at a commercial fish farm. Amounts of agricultural limestone equal to the lime requirement of bottom soils were applied to each of three ponds by: direct application over the pond water surface; spread uniformly over the bottom of the empty pond; spread uniformly over the bottom of the empty pond followed by tilling of the bottom. Effectiveness of agricultural limestone applications did not differ among treatment methods. Agricultural limestone also reacted quickly to increase total alkalinity and total hardness of pond water to acceptable concentrations within 2 weeks after application. The reaction of lime to increase soil pH was essentially complete after one to two months, and lime had no effect below a soil depth of 8 cm. Tilling of pond bottoms to incorporate liming materials is unnecessary, and tilling consumes time and is an expensive practice; filled ponds can be limed effectively.

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