

## **Nitrate concentrations in animal manure dumping sites**

Marilyn C. Sebial<sup>1</sup> and L. S. Sonon<sup>12</sup>

<sup>1</sup>*Department of Agronomy and Soil Science, Leyte State University, Baybay,  
Leyte 6521-A, Philippines;*

<sup>2</sup>*Soil, Plant, and Water Laboratory, Athens, GA 30602, USA*

### **ABSTRACT**

Sebial M. C. and L. S. Sonon. 2006. Nitrate concentrations in animal manure dumping sites. *Ann. Trop. Res.* 28(1):14-35

This study aimed to characterize the chemical and physical properties of soil, and measure the nitrate concentrations at varying soil depths in the manure disposal sites of the Leyte State University piggery and beef cattle projects. Soil chemical analysis revealed that organic matter in both the piggery and beef cattle areas were concentrated in the upper 20 cm and gradually decreased with depth. A similar trend was observed for total N where the 0-20 cm depth contained approximately 0.30% N and this level decreased in the deeper soil layers. The soil in the piggery area was slightly acidic (pH 5.30) while that in the cattle area was near neutral (pH 6.50). The entire soil profile in both sites was generally highest in nitrate at the surface and decreased with depth. Nitrate concentrations were relatively higher when there were more animals in the project site. Solution samples from 120 cm lysimeters yielded high levels of nitrate (about 200 mg L<sup>-1</sup>), an indication that this ion was being moved to greater soil depths.

**Keywords:** soil nitrate concentrations, animal manures, dump sites

*Correspondence:* L.S. Sonon *Present Address:* Soil, Plant, and Water Laboratory, 2400 College Station Road, Athens, GA 30602, USA. *E-mail Address:* lsonon@uga.edu