BIOPHYSICAL MODEL FOR THE EVALUATION OF MANURE NUTRIENTS FLOW IN MALAYSIAN CATTLE FEEDLOT

INTRODUCTION/NOVELTY

Biophysical Model – Beef Cattle Production and Manure Excretion (BCPME) estimates nutrients flow for cattle manure management.

BCPME model involves two sub model developments:

- Model 1: Production and Housing System (Figure 1)
- Model 2: Manure Handling System (Figure 2)

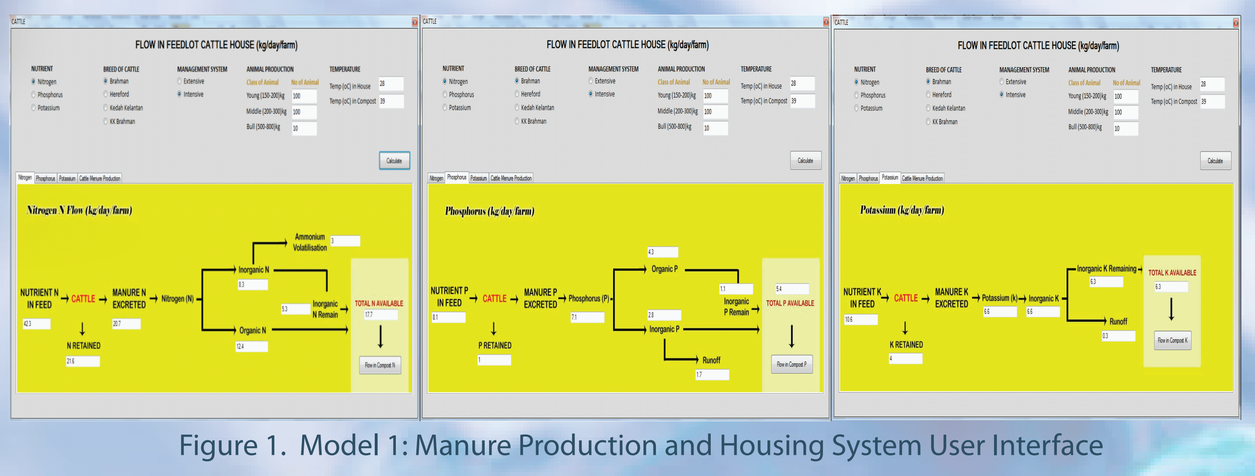

Figure 1. Model 1: Manure Production and Housing System User Interface

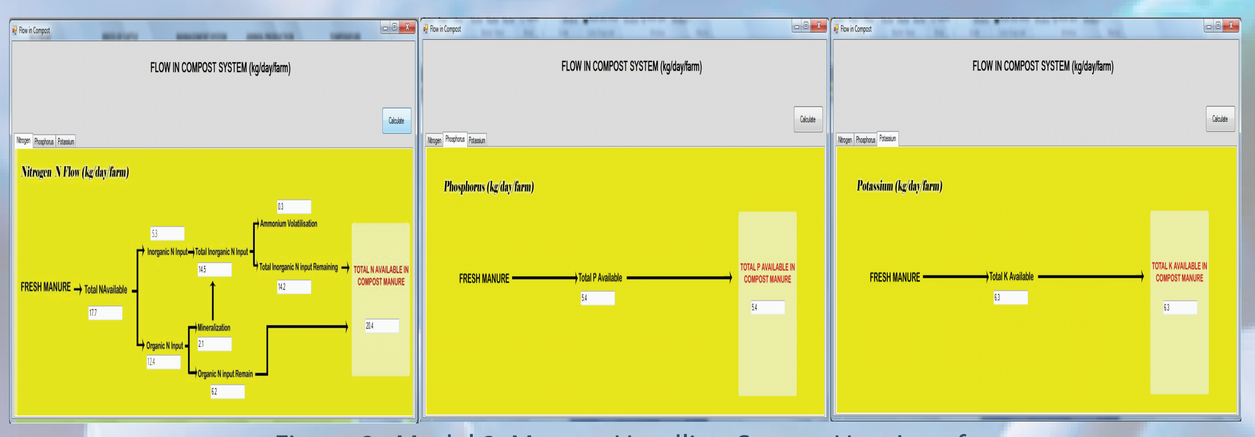

Figure 2. Model 2: Manure Handling System User Interface

USEFULNESS/ADVANTAGES

- BCPME tracks the fate and pathway of nutrients and amount of waste output (Figure 3).
- It estimates contents of nitrogen (N), phosphorus (P) and potassium (K) flow based in animal feed ration, animal classes (age), and waste management method (composting).
- It estimates the potential loading of nutrients losses through ammonia volatilization (for N), and runoff (for P and K) into the ecosystem.
- It provides an area-wide integrated approach to livestock production and waste management.

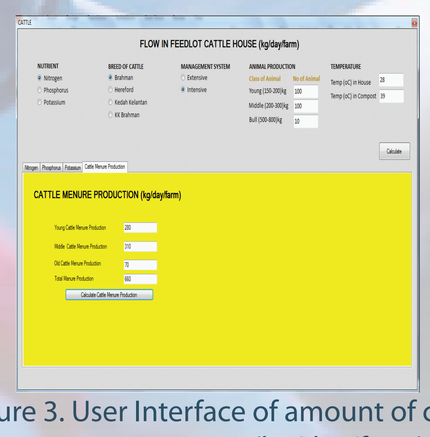

Figure 3. User Interface of amount of cattle manure excretion (kg/day/farm)

MARKET POTENTIAL

Public (Government) sector :

- Ministry of Agriculture (MOA), MOSTI
- Institutions : School, Universities and Extension Agencies

Private sector :

- Livestock Farmers
- Crop Farmers – Vegetable, Oil Palm, Rubber, etc.
- Agricultural & Environmental Conservation Organizations

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