The Cool Farm Tool

A Description of Changes:

Version 1.0 –> Version 1.1

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For more information, see growingforthefuture.com and sustainablefood.org

Introduction

Over the course of 2010 as we ran the tool with growers, we received much useful feedback on and modified the tool accordingly. What follows is a high level summary of the major changes between the version we're starting to work with now (what will become version 1.1) and the original released version (version 1.0). In addition to bug fixes, these changes fall into feature fixes, feature additions and user-friendliness improvements.

Feature additions:

- Above ground biomass – for coffee and tree crops

- Transport emissions

- Some special data entry items for modeling GHG emissions from rice

- The carbon footprint of different feed rations can be now be modeled. Users can define the constituent parts (and percentages) of the ration and if any of the feed is grown on-site, those crops can be modeled and the results used in the feed ration modeling.

- The list of feed components for which we provide default GHG numbers has expanded.

- Users can set the default unit system (metric or U.S.)

- An extended range of (raw) animal manures and composts has been added

- Users can define their own fertilizers based on the existing list

- Fertilizer application methods and N-inhibitors are now modeled

- Electricity GHG conversions have been added on a per-state basis for the U.S.

User-friendliness improvements:

- Above and below ground carbon sequestration is separated out from the crop management tab (where it used to be) into its own tab.

- The question about "climate" has been separated out into questions about "temperature" and "soil moisture"

- Users can now choose between different databases to source figures for embedded emissions from fertilizer production. The default database switched from Ecoinvent to International Fertilizer Institute numbers

- The running total is displayed along the top of the tool on every tab

- Users can choose the how to display results – whether in metric or U.S. based units.

Feature fixes:

- The previous version asked users about changes in organic inputs – this was meant to refer to changes in cover crops, residues handling methods and rotations. Now the tool asks about those practices by name.

- N2O emissions from crop residues and organic waste handling methods are now included in the crop GHG calculation.

- Under livestock, energy used in milk production is now included in the calculation of methane production

- Corrections for milk fat and protein have been added to make milk from different breads comparable.

- Prefilled estimates of dry matter intake for some hen breeds has been added

- The Tier 2 model for cattle is now working correctly

- It is now easier to calculate GHG emissions for replacement stock and from the full life cycle of the animal. The different phases of life are separated out so that different management practices at different life stages are easier to input.

- Manure management has been consolidated and simplified. The following table shows how the Cool Farm Tool manure management categories differ from IPCC.

IPCC Categories	CFT categories
Pasture/Range Paddock	Renamed "Grazing"
Composting – In-vessel	Removed
Composting - Static pile	Removed
Composting – Intensive windrow	Renamed "Compost – forced aeration" – emissions calculated at 2/3 that of non-forced aeration as in CARB protocol
Composting – Passive windrow	Compost – non-forced aeration