Cornell Cropware Version 2 *Quicksheet*

Cornell Cropware version 2 is a revision and expansion of Cropware version 1, providing research updates and enhanced usability. The following provides an overview of the changes packaged into Cropware version 2. Click on the updates listed below to view further details.

- Plan data are saved to a Microsoft Access® compatible database format (.mdb).
- Township-level precipitation is used for the Nitrate Leaching Index.
- Default manure composition and production values have been updated according to Manure Characteristics MWPS-18, Midwest Plan Service, 2001.
- Nutrient guidelines are included for 45 vegetable crops.
- Fields can be re-ordered on the Fields screen.
- Soil test conversion equations have been added for A&L Canada Laboratories, Inc. and the University of Vermont.
- Al, Ca, Mg, Fe, Mn, Zn and Organic Matter were added to the Fields screen.
- Two manure applications can be characterized per field per year.
- The P Index is calculated using up to two distinct manure application events per year.
- Fertilizer materials and rates can be selected on the Allocation screen.
- Lime rates may be selected on the Allocation screen.
- Data columns and order can be specified on the Allocation screen.
- Data can be exported (as .csv files) from the Allocation and Calendar screens.
- All manure sources can be viewed on a single Calendar screen.
- "Manure Added" values can be adjusted on a monthly basis on the Calendar screen.
- Manure application timings for the P Index can be updated from the Calendar screen.
- More plan data can be queried with the Custom Report tool.
- Report formatting has been refined.
- The Crop Plan Summary Report has been added for basic crop rotation analysis.
- The Fertilizer Shopping List Report includes fertilizer costs per material and per farm.
- The Cropware Help section has been updated.

Important Installation Instructions:

1. Back up all farm data files created with Cropware version 1; archiving files regularly is an important standard practice regardless of version or software.
2. Uninstall Cropware version 1 by clicking on the Windows "Start" button, "Programs", "Cropware", and choose "Uninstall Cropware". Version 1 and version 2 can not be on the same computer at the same time.
3. If you are installing Cropware from the CD, choose "Software on this CD" from the self-start menu, then "Install Cornell Cropware", and follow the directions. If you downloaded Cropware from the Nutrient Management Spear Program web site (http://nmsp.css.cornell.edu/software/cropware.asp), unzip the file and double click on the Cropware setup file to install.
    a. In some cases, the following message may be displayed during installation, *"Error 1191 could not register type library for file C:\windows\system32\dao350.dll. Contact your support personnel."* Click "Ignore" and the installation and operation will proceed properly.
4. Once installed, head to the Windows "Start" button and "Programs" to open Cropware. Once in "Programs", Cropware is within the "Cornell University" folder.

Plan data are saved to a Microsoft Access® compatible database format (.mdb).

- The new plan data file structure facilitates interfacing with other programs such as NRCS Toolkit, GIS software, and planner developed software and spreadsheets. To use Cropware version 2, you will need to convert your current version 1 files (i.e., .cpw files) to the version 2 format (i.e., .mdb files) through the following steps:
  1. Within Cropware version 2, click the Tools dropdown menu.
  2. From the dropdown menu choose "Convert version 1.0 Plan Files to Current Version". You will see a message allowing you to save the current file.
  3. Choose the version 1 file to convert. If preferred, the new file name can be the same file name as the old file because Cropware will append the file extension ".mbd" to the new version 2 file. You can now begin using the converted plan file.
  4. Notes: A) the original Cropware version 1 files (.cpw file) themselves will not be altered on your computer, B) version 2 files cannot be converted back to the version 1 file format, C) version 2 files will be larger in size than the version 1 files, and D) it is not necessary to have Microsoft Access installed on your computer to run Cropware version 2.
- An output data file can also be generated, independent of the Cropware plan file. This file houses plan inputs and outputs that can be used to share with other database software without the risk of inadvertently altering the Cropware plan file. To generate an output file, click on the Tools dropdown menu, select "Create Output Database File", and follow the directions. The file name will be appended with "(Output File).mdb".

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Township-level precipitation is used for the Nitrate Leaching Index.

- The county and township of the farm can be selected on the Contacts screen. Your selections will be applied to all fields, but this can be adjusted on a field by field basis on the Fields—Field Data screen. Annual and winter precipitation data for the N Leaching Index are now based on the township selection, providing a more site-specific assessment of N leaching risk.

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Default manure composition and production values have been updated according to Manure Characteristics MWPS-18, Midwest Plan Service, 2001.

- The default manure composition and production values have been updated for the various animal type options on the Manure screen based on the 2001 edition of the Manure Characteristics MWPS-18 document from the Midwest Plan Service.

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Nutrient guidelines are included for 45 vegetable crops.

- Nutrient guidelines have been included for the following vegetable crops.

Asparagus	Chard	Peppers
Beans - Dry	Cucumber - Seeded	Popcorn
Beans - Lima	Cucumber - Transplanted	Potato
Beans - Snap	Eggplant	Pumpkins
Beets	Endive	Rhubarb
Broccoli - Seeded	Garlic	Radishes
Broccoli - Transplanted	Lettuce	Rutabagas
Brussels Sprouts	Mixed Vegetables	Spinach - Spring
Cabbage - Seeded	Muskmelon	Spinach - Fall
Cabbage -Transplanted	Mustard	Squash - Summer
Carrots	Onion - Seeded	Squash - Winter
Cauliflower - Seeded	Onion -Transplanted	Sweet Corn
Cauliflower - Transplanted	Parsley	Tomato
Celery	Parsnips	Turnips
Chinese Cabbage	Pea	Watermelon

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Fields can be re-ordered on the Fields screen.

- The capacity to re-order fields on the Fields screen has been incorporated, allowing the user to divide, combine, add and remove fields from the cropping plan. This becomes especially important as fields are re-configured into management units for conservation and production purposes.

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Soil test conversion equations have been added for A&L Canada Laboratories, Inc. and the University of Vermont.

- Equations necessary to convert soil test results from: 1) A&L Canada Laboratories, Inc., and 2) the University of Vermont into Cornell Nutrient Analysis Laboratory (CNAL) Morgan equivalent values, have been added to the existing list of laboratories on the Fields—Soil Test screen. This conversion is an essential step in linking the soil test values to Cornell crop nutrient guidelines for manure and fertilizer.

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Al, Ca, Mg, Fe, Mn, Zn and Organic Matter were added to the Fields screen.

- Entry of soil test results for aluminum (Al), calcium (Ca), magnesium (Mg), iron (Fe), manganese (Mn), zinc (Zn), and organic matter is now possible on the Fields—Soil Test screen. Iron is a necessary input for generating potato nutrient guidelines.

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Two manure applications can be characterized per field per year.

- The user can now plan up to two manure application events for each field (e.g., a fall application and a spring application). The Primary application and Secondary application can be defined with different manure sources, application rates, methods and/or timings on the Fields—Manure Use screen, the Allocation screen, and the Calendar screen. The Primary and Secondary applications from the past two years are defined on the Fields—Past Manure Use screen.

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The P Index is calculated using up to two distinct manure application events per year.

- The organic phosphorus contribution to the Source component of the P Index is a function of the rate, timing, and method of the manure application. If Primary and Secondary applications are both defined in the plan, the specific rate, timing, and method of each application will be used to calculate the P index Source component.

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Fertilizer materials and rates can be selected on the Allocation screen.

- The fertilizer material (new for version 2) and rate (as in version 1) can be selected on the Allocation screen, itself. This will improve the efficiency of adjusting the fertilizer complement.

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Lime rates may be selected on the Allocation screen.

- Guidelines for lime rates, calculated from data inputs on the Fields screen, are displayed on the Allocation screen. The user can now choose the lime rate for the plan year on the Allocation screen by either: 1) clicking the "Use Computed Lime Requirements" button to accept the calculated lime rates for all fields, or 2) entering lime rates on a field by field basis in the "User Selected Lime Requirement" column.

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Data columns and order can be specified on the Allocation screen.

- All of the columns displayed on the Allocation screen, except Field ID, are user definable. The program starts with a default Allocation screen setup, but the user can change the columns displayed on the Allocation screen by selecting columns within the "Change Nutrient Balance Layout" dialogue box. Such changes will be maintained until the user selects the "Restore Defaults" button within the "Change Nutrient Balance Layout" dialogue box. The user can also re-order columns on Allocation Screen by selecting the column with the mouse and dragging it to the desired location. The column order will revert to the default when you leave the screen and return. As a note, the "Use Calculated Manure Rate" button has been omitted from the Allocation Screen. This button was confusing and was commonly not used or used incorrectly.

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Data can be exported (as .csv files) from the Allocation and Calendar screens.

- The user can export the Manure Summary and Field Nutrient Balance grids on the Allocation screen and the Calendar and Manure Inventory grids on the Calendar screen as comma separated value (.csv) files. This format can be easily loaded into spreadsheet software.

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All manure sources can be viewed on a single Calendar screen.

- The user can now choose to see all of the manure sources at once or just a selected source using the "Manure Source" drop down box at the top of the screen. Since each field can have two manure application events, you will see 2 rows on the manure application grid for fields with 2 applications. The manure inventory grid at the bottom of the screen will display the inventory for all sources. Use the vertical scroll bars to display each source.

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"Manure Added" values can be adjusted on a monthly basis on the Calendar screen.

- The user can change the "Manure Added" quantities per month on the Calendar Screen (the default value is based on the total annual amount of manure divided by the 12 months of the plan year). The total annual amount is determined, previously, on the Manure screen. When values are entered for individual months on the Calendar screen, the difference between the total manure added value (as entered on the Manure screen) and the sum of the monthly amounts appears in the last month on the grid. Alternatively, the monthly "Manure Added" quantities can also be defined if the user determines the total annual quantity of manure with the "Estimate Using Number and Average Weight of Manure Applications" method on the Manure screen. The number of monthly loads will be translated into tons or gallons of manure produced per month and carried forward to the "Manure Added" row within the Calendar screen.

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Manure application timings for the P Index can be updated from the Calendar screen.

- The P Index can now be updated based on timings entered on the Calendar screen. When the user enters planned manure applications on the Calendar Screen and clicks the "Update P.I." button, the manure application timing variable of the P Index will be reset throughout Cropware (i.e., on the Fields screen, Allocation screen, etc.) to reflect your selections. Entries that range across multiple P Index timing periods will result in the manure application timing being set to the highest risk period within the range. For instance, if you entered manure values in each of the months of September, October, and November, the manure application timing would be set to "Nov – Jan".

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More plan data can be queried with the Custom Report tool.

- The following data items have been added to the Custom Report tool.

Annual Rainfall	All Manure Applied /acre (gallons)	Morgan Equivalent K (lbs/acre)
Winter Rainfall	All Manure Applied /field (gallons)	Fertilizer N (lbs/acre)
Soil Hydrologic Class	All Manure Applied /acre (tons)	Fertilizer P_2O_5 (lbs/acre)
Township	All Manure Applied /field (tons)	Fertilizer K_2O (lbs/acre)
Manure # 2 Source	Soil Test Mg	Manure N (lbs/acre)
Manure # 2 Analysis	Soil Test Ca	Manure P_2O_5 (lbs/acre)
Manure #2 Units	Soil Test Mn	Manure K_2O (lbs/acre)
Manure # 2 Hydro Comment	Soil Test Zn	Manure + Fertilizer N (lbs/acre)
Manure # 2 Timing	Soil Test Fe	Manure + Fertilizer P_2O_5 (lbs/acre)
Manure # 2 App. Method	Soil Test Al	Manure + Fertilizer K_2O (lbs/acre)
Manure # 2 Quantity Applied / acre	Soil Test OM	
Manure # 2 Quantity Applied / field	Morgan Equivalent P (lbs/acre)	

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Report formatting has been refined.

- The Nutrient Management Plan report and Fertilizer and Manure Management report column headings repeat at the top of each page.

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The Crop Plan Summary Report has been added for basic crop rotation analysis.

- The Crop Plan Summary has been added to the set of pre-defined Cropware reports. It displays the acreage of the various crops produced on a farm over a 14 year time span: the past 3 years, the current year, and planned production in the next 10 years. This can be used to assess potential imbalances in crop production over the course of crop rotations on the farm.

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The Fertilizer Shopping List Report includes fertilizer costs per material and per farm.

- The Fertilizer Shopping List report has been modified to include the total cost per fertilizer material as well as total fertilizer cost across the entire farm.

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The Cropware Help section has been updated.

- The Help section has been revised and expanded for Cropware version 2. This includes thorough support in the areas of Cropware use; crop nutrient guidelines for nitrogen, phosphorus, and potassium; the New York State Phosphorus Runoff Index; the Nitrate Leaching Index; and on-farm application, including tutorials for grazing farm, daily spread farm, and manure storage farm scenarios. To improve flexibility of use, the Help section has been packaged as a .PDF file, requiring the installation of Adobe Acrobat Reader on your computer. Adobe Acrobat Reader is available free of charge from the Cropware CD or the Adobe web site (www.adobe.com).

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