AGDISPpro 0.9 Release Notes: May 2024

Overview and Trial License

Mount Rose Scientific LLC (MRS) announces the release of AGDISPpro Version 0.9. At your request MRS is sending you the code with a 30-day free trial. After expiration of the trial period, the code will continue to operate, but in USEPA mode only (using AGDISP 8.26, the version of AGDISP accepted by the USEPA). Should the user wish to continue using AGDISPpro, please contact MRS (info@mount-rose.com) for up-to-date pricing information.

Installation Notes

To install AGDISPpro, follow the steps below.

Note: While installing AGDISPpro on Windows 10/11, you may receive the following warning: "Windows protected your PC: Windows Defender SmartScreen prevented an unrecognized app from starting." If you see this dialog, click "Run anyway" to proceed with installation.

1. Place the license file (sent separately) in a suitable folder on your computer
2. Unpack the setup files from the distribution (AGDISPpro-0.9.0.1) and launch setup.exe
3. Follow the prompts to accept the license agreement and install the software
4. After installation, the installer files may be deleted
5. Launch AGDISPpro for the first time
6. When the FlexNet License Finder window pops up, select *Specify the License File* and click Next
7. Click Browse, select the license file that you saved in Step 1, and click Open
8. Click Next
9. Click Finish. AGDISPpro will launch

Recently Added Features

AGDISP 9.0, which included the Tier 1 orchard and ground sprayer curves originally developed by the Spray Drift Task Force and inserted into AgDRIFT, was released by the USDA Forest Service (FS) near the end of 2019. To the best of our knowledge, AGDISP 9.0 is not actively supported or further developed.

AGDISPpro expands the features in AGDISP/AgDRIFT with the following improvements:

1. Ability to predict the movement of evaporated vapor from the aerial release of spray material.
2. Expansion of the User-Defined drop size distribution to include droplet sizes below one micron in diameter.
3. Addition of a jet aircraft option in Aircraft (and inclusion of the Boeing 737-400 aircraft details).

4. Addition of a gyrocopter aircraft option in Aircraft (and inclusion of the Bensen B-8M aircraft details).
5. Expansion of error trapping in the Toolboxes and the correction of errors in AGDISP 9.0 and earlier versions, such as correcting the helicopter boom position.
6. Ability to simulate Unmanned Aerial Vehicles and load in previously generated flow fields for user-specified UAV aircraft.
7. Ability to run in AGDISPpro mode or in USEPA mode (AGDISP 8.26), complete with automatic conversion between formats, error checking, and warnings to inform the user of feature differences.

Changes Since 0.8

- Add variable Spray Line Grid Spacing in Advanced Settings
- UAV Boom Forward, Boom Vertical: Warning instead of error if outside limits
- Add RMAX UAV to aircraft library
- Add PV40X UAV to aircraft library
- Expand TTAM6E-X UAV flight envelope to heights down to 1.0m and speeds up to 4.0 m/s
- Expand TTAM8A-Pro UAV flight envelope to heights down to 1.0m
- Update reference DSDs to be consistent with ASABE S572.3

Known Issues

- Can't read library entries from a previous version library. Probably need a convert/import function
- Users in a locale that displays commas in numbers rather than decimal points can't read saved .ag files
- Sometimes main form is mostly blank after launch. Workaround: Minimize/Restore the form

Support and Custom Flow Field Models

The software license included with the installer, and available from the Help menu, describes how to obtain support for AGDISPpro. Basic support includes the installation of the software and its initial operation. Additional support related to the application of the software, custom modifications etc. are available, but require negotiation of a support contract with MRS. Contact info@mount-rose.com for more details.

AGDISPpro includes the ability to read-in and use UAV flow field models to undertake predictions of deposition and drift from such aircraft. Teske, M. E., Wachspress, D. A., & Thistle, H. W. (2018). Prediction of aerial spray release from UAVs. Transactions of the ASABE, 61(3), 909-918 describes generating a flow field model for a quad-coaxial rotor UAV. If the current version of AGDISPpro does not include the UAV of interest, custom UAV flow field models can be created by Mount Rose Scientific upon request. Contact info@mount-rose.com for further details.

Future Releases

Future releases of AGDISPpro may include:

1. Inclusion of the User Manual in AGDISPpro Help;
2. Development of a user-driven Batch Processing capability;
3. Addition of an orchard airblast spray model (awaiting additional data); and
4. Additional validation of the UAV models.