




NEWA, the Network for Environment & Weather Apps: crowd sourced, open access IPM decision support

Juliet Carroll
NYS IPM Program, Cornell University

newa.cornell.edu 

IPM (integrated pest management)

Sustainable management of pests using methods that minimize environmental, health and economic risks.

- Plant disease epidemiology
- Insect phenology
- Plant phenology
- Crop management


Phenological Models & Forecasts

15 plant disease forecast tools
10 insect phenology tools
3 crop management tools
11 degree day tools

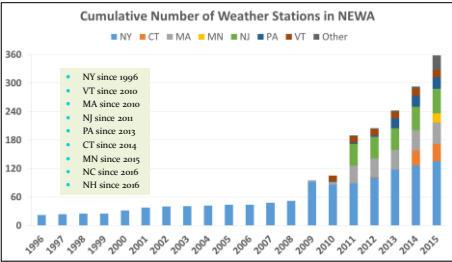
- ✓ Fruit (apples, grapes)
- ✓ Vegetables (onions, potatoes)
- > Ornamentals (Xmas trees)
- > Field crops
- > Livestock

40+ tools on our wish list.
More station locations.
End user cache & alarms.
Better data QC & support.
Developer sandbox.



Open access. Real-time. Query-based. Decision support.
Built-in biofix. Interactive user interface.


newa.cornell.edu 

Weather Stations

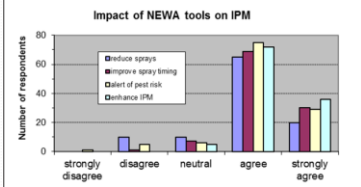


Significant growth in the number of weather stations.
Nine state-wide members.
Individual farms in six other states.
Airports - RH correction factor & leaf wetness estimate.
State Climatologist - New Jersey mesonet, Rutgers.

 
Professional Weather Instruments Northeast Regional Climatic Center

newa.cornell.edu 


From 2007 grower survey to 2015 stats



NEWA's impact


Over 2 million page views per year

Growers can save, on average, \$19,500/yr in spray costs and prevent \$264,000/yr in crop loss as a direct result of using NEWA pest forecast models.
99.2% of NEWA end users would recommend NEWA to farmers.

newa.cornell.edu 

Access to data

- Data is available - crowd sourcing, state mesonets, airports.
 - Does it have value if it isn't shared?
- Tools created with the data are harder to share.
 - Geographic limitations
 - Ownership, licensing, liability
 - Value-added product

newa.cornell.edu 

Challenges

- Funding Cooperative Extension & land grant universities
- Funding and recognition of State Climatology mesonets
- Blending with existing systems - e.g. MSU Enviro-weather
- Geographic reach / validation of decision tools
- Modeling leaf wetness (LW) for plant disease forecasts
- Utilization of NDFD / RTMA data - precip, RH, LW
- Data QC and patching
- Weather station companies willing to collaborate with API
- Staffing

newa.cornell.edu 