

Climate smart farming resources and decision support tools (how-to and interactive demos)

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Extreme precipitation. Heat stress. Drought. New pests and diseases. Longer growing seasons. Farmers in the Northeast US are under increasing pressure to respond to extreme weather events and climate change. Cornell's Climate Smart Farming (CSF) program empowers farmers to adopt practices that will increase agricultural resiliency, reduce their impact on the climate, and help them profit from new opportunities. By fostering partnerships and engaging stakeholders, CSF delivers trusted, research-based climate information and decision-support tools for farmers, resource managers, and policy makers.

Climate Change and Agricultural Impacts

Agriculture in the Northeastern US is characterized by a diversity of products and production systems, scales of operations, and landscapes. Farmers need a variety of specific practices and tools to help them with climate change adaptation and mitigation.

Agricultural Products	Climate Change Impacts	Toolkit of Adaptation & Mitigation Practices
Dairy and Livestock	Heat stress, water impacts from heavy precipitation	Increased cooling, energy efficiency and renewables, water management
Vegetables and Field Crops	Disease, weed and pest pressure, flooding and short-term drought, longer growing seasons, heat stress	Integrated pest management, drainage or irrigation, soil health, cropping systems, shifting dates and new varieties
Tree Fruit, Berries, and Grapes	Unexpected freeze, short-term drought, reduced winter chill	Monitoring weather and protecting crops, siting, soil health and cropping systems, new varieties
Maple Syrup	Changing seasons, variable weather, contamination, tree health	Earlier tapping, new technologies, shifting production

Cutting Edge Tools and Resources

Our new decision support tools are built on state-of-the-art weather, climate, agricultural yield, and economic data to help growers make the most informed decisions in the face of a changing climate. These tools, ranging from a growing degree-day calculator to a frost risk predictor, are being built with farmer input and will be available on multiple platforms when, and where, farmers need them.



Extension

Our Climate Smart Farming (CSF) Extension team is the first of its kind in the United States. Spanning New York State, the CSF team has been trained on climate change science, impacts and responses, and is developing new resources and materials. The team provides commodity specific information to farmers and answers their questions about climate variability and farm management. This innovative extension team is strengthening statewide capacity on climate change, and can serve as a model for climate change extension efforts nationally.

Partnerships

We are building collaborations to deliver the latest research updates and guidance on policies that will support stakeholders' ability to adopt new practices. Partnerships include the Cooperative Extension system, agricultural and environmental organizations, government agencies, industry, and foundations.

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Planned Weather-to-Climate Change Tools for Farmers in the Northeastern US

CICCA programmers are building several new user-friendly Decision Support Tools based on interest and needs identified by farmers, researchers, and extension specialists, with strong stakeholder input. The following tools are in development, or in planning stages, but we look forward to hearing more priorities for data and information from producers:

In Development Now:

1. Growing Degree Day Forecast Calculator
2. Frost Risk Calculator Tool
3. Evapotranspiration (ET) Calculator

Planned in 2016-2017 based on producer needs

4. Dairy Heat Stress Tool
5. Seasonal Outlook Forecast Summary for Agriculture
6. Regional Drought Status/Outlook for the Northeast
7. Economic Climate Crop Yield Tool
8. Watershed Runoff Calculator
9. Water Footprint Calculator
10. Cover Crop Decision Tool
11. Climate Anomaly Maps
12. *Other tools: as identified by farmers/advisors*

