Climate Smart Farming Tools: Helping NE Producers Reduce Climate Risk on Farms

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USDA NE Climate Hub Partners Meeting
Rutgers University – March 14, 2018
NE Context Matters:
• Varying Landscapes
• Diversity of Farm Types, Sizes and Crops
• Different Climate Signals

MW: Avg. Farm Size
Kansas = 747 acres

NE: Avg Farm Size MA = 68 acres

SE: Avg Farm Size GA: 228 acres
MW: U2U
SE: AgroClimate
NE: ClimateSmartFarming

U2U@MRCC: Corn GDD

Corn Growing Degree Day Tool
Location: 38.67, -98.74 in Russell Co., KS, Start Date: April 5, Maturity Days: 113, Freeze Temp: 28°F, Variation

Provided by the International Research Institute for Climate and Society
Cornell Climate Smart Farming Program Goals

• Increase farm resiliency to extreme weather events, climate variability and change, through assessing risk & adopting BMPs (adaptation)
• Increase energy efficiency and renewable energy capacity to reduce GHG emissions and operating costs, and utilize BMPs (mitigation)
• Sustainably increase agricultural productivity and farming incomes, to contribute to regional & global food security

Based on FAO definition of CSA
Stakeholder-Driven Research & Extension

Asking Farmers @ Impacts, Responses & Needs:

• Farmer Focus Groups in 2016 & 2017 with NY/PA producer groups & Consultants:
• Feedback from meetings and outreach events
• Farmer Surveys: Empire Farm Days 2017; NYS Farmer Survey: winter 2018
• 2,000 Farmers, Extension, Agency staff reached since 10/17
How is the changing climate affecting your farm?

- Decision Tools
- Resources
- Videos
- Extension: Links to NYS CSF Team & Each NE State
- 900 website hits per month

[www.climatesmartfarming.org](http://www.climatesmartfarming.org)
“A normal season does not seem like it happens any more. It’s either really dry, or really wet. It seems like when we get rain, it’s apocalyptic...We got 5 inches of rain in about 1.5 hours, and I had a lot of soil loss...I see the impact for generations.”

http://climatesmartfarming.org/videos/oechsner-farm/
CSF Tools

• Data (NRCC):
  • 4X4 KM gridded climate data
  • NWS forecasts
  • Agricultural models

• Farmer Input:
  • Location: Any farm location in NE, WVA to ME, save multiple locations
  • Planting Date, Crop
  • Choose Season to Date, Last Season, Seasonal Outlook
  • Climate Change Context: Coming Soon
  • Info: Meta Data behind the tools
Apple & Grape Freeze Risk Tools

Current Location:
Johnny Appleseed's Orchard
DeMunn Rd, Beaver Dams, NY
Latitude: 42.282480
Longitude: -76.934862
Change Location

Date of Interest:
2017-03-15

Apple Variety
- Empire
- McIntosh
- Red Delicious

Empire Apple Freeze Damage Potential
@ Johnny Appleseed's Orchard, DeMunn Rd, Beaver Dams, NY

30 Day Trend

Cover Crop Scheduler

CSF Winter Cover Crop Planting Scheduler

Location
Richfield Springs, NY 13439
Lat/Lon: 42.85, -74.99

Cover Crop
Buckwheat

Probability of biomass > 1 ton/acre before hard freeze (Buckwheat)
Planting Date: 07/21

GDDs (base 50) from planting date (07/21) through hard freeze

Seasonal Forecasts: Spring Forecasting 2018

ECRL Springcasting

Forecasted Spring Leaf Index Anomaly

- Predicts spring onset weeks to months in advance by focusing on the timing of spring indicators
- Spring onset dates; spring onset anomalies (days “early” or “late” compared to 1981-2010)
Seasonal Forecasts: NY/NE Drought Atlas

- Maps Palmer Drought Severity Index, updated every month
- Experimental forecasts in development
Key Takeaways

• Data/Hosting: Partnering with the NRCC
  – U2U now hosted by MRCC
• Farmer input: Trainings, Focus Groups, Surveys
• Extension: Key to getting tools out to farmers (NOT “build it and they will come”)
• Funding: CSF small foundations & Hatch dollars, but need for core funding for development and maintenance of tools/sites
• Integration/Partnerships: across land grants and regions
Climate Smart Farming Program:
www.climatesmartfarming.org

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Thank You! Questions?

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