

2025 IMPACT REPORT

National Agricultural Producers Data Cooperative

NAPDC TOOLS



SSPOT

SSPOT is a part of large Carbon Grant for Advancing proximal sensing and UAVs for soil mapping & sampling in precision agriculture. The objectives of the tool include:

- Develop SSPOT: user-friendly, open-source soil sampling app
- Develop UAS platforms to support soil sampling and characterization
- Improve proximal sensor use for digital soil mapping & soil properties analysis

Link: https://sspot.scinet.usda.gov/

AVaP App

The Agroclimate Viewer & Planner App is a web-based tool that helps users monitor, forecast, and analyze agroclimatic conditions on their croplands. Using Google Earth Engine, it delivers satellite imagery, weather forecasts, soil data, and climate insights. Users can draw field boundaries, choose parameters, and generate visualizations to support informed agricultural decisions.
Key Features include:

- Field Selection & Data Management
- Vegetation Idex (VI) Analysis
- Climatic Data Trends, etc

Link: https://datl-chandel.github.io/Agroclimate/

ToTs

The Open Ag Tech & Systems (OATS) Center created Tree of Tables (ToTs)—a simple, rigorous method for publishing data as spreadsheets/CSVs (“leaves”) organized in a clear folder hierarchy (“tree”). This structure preserves both file-level and folder-level context, making data human-readable and machine-ready.
Over the past year, the team built an open-source Modus→ToTs conversion pipeline with Shapefile and GeoJSON support, a merge tool linking lab results to sampling locations, and a browser-based soil-health prototype (map + time slider) that helps producers explore soil trends over time while keeping their data on their own platforms.

Link: https://github.com/oats-center/modus

2025 NAPDC Publications



1) The National Agricultural Producers Data Cooperative published 4 newsletters in 2025 that highlighted research updates and stakeholder case studies throughout the cooperative. Read them here.

2) 2024 NAPDC Conference White Paper. This report provides a summary of the information gathered from 2024 NAPDC Conference attendees about the relative importance of framework priorities listed by topic and recommendations for the immediate (now), near-term (1-3 years), and future (3-5 years) of the NAPDC.

3) Published. Baldin, M., Bewley, J. M., Cabrera, V. E., Jones, K., Loehr, C., Mazon, G., Perez, J. D., Utt, M., & Weyers, J. (2025). Standardization for Data Generation and Collection in the Dairy Industry: Addressing Challenges and Charting a Path Forward. *Animals*, 15(2), 250. https://doi.org/10.3390/ani15020250

4) Published. Cabrera, V. E., Bewley, J., Breunig, M., Breunig, T., Cooley, W., De Vries, A., Fourdraine, R., Giordano, J. O., Gong, Y., Greenfield, R., Hu, H., Lenkaitis, A., Niu, M., Noronha, E. A. F., & Sullivan, M. (2025). Data Integration and Analytics in the Dairy Industry: Challenges and Pathways Forward. *Animals*, 15(3), 329. https://doi.org/10.3390/ani15030329

5) Published. Barton, R., Burchard, J., Cabrera, V. E., Cook, D., Cooley, W., Cue, R., Fadul, L., Mattison, J., & Saha, A. (2025). Data Ownership and Privacy in Dairy Farming: Insights from U.S. and Global Perspectives. *Animals*, 15(4), 524. https://doi.org/10.3390/ani15040524

6) Published. Ault, A., Y. Zhang, J. Krogmeier, and D. Buckmaster. 2024. Maximally interoperable models (MIMs): A heuristic approach for evaluating interoperability. *ASABE Annual International Meeting*. DOI: https://doi.org/10.13031/aim.202401184

7) In Review. Becker SM, Gwendolyn G, Franz TE, Lampard T, Caldwell TG (2025 in review) Network wide Assessment of Soil Moisture Calibration and Biomass Monitoring Using Cosmic ray Neutron Sensing in the Roaring Fork River Basin, Colorado. *Vadose Zone Journal.*