

UF/IFAS Plant Nutrient Oversight Committee

Meeting Minutes – Nov. 4, 2025, 10:00am-12:00pm (Zoom)

Agenda

1. Welcome & Introductions (Dukes)
2. Previous meeting minutes (review [PNOC Meeting Minutes DRAFT \(9-3-25\).docx](#))
3. Soil P test update (Nair & faculty, [PNOC - Duplicate 11-04-2025.pptx](#))
4. Tomato recommendation update (Shukla, Agehara)
5. Bean recommendation update (Shukla, Agehara, Bayabil)
6. Potato recommendation update (Shukla, Agehara, Zotarelli)
7. Recommendations
 - 7.1. NE potato interim, Dec.
 - 7.2. Miami-Dade bean interim, Dec.
 - 7.3. C/S FL tomato interim, Dec.
 - 7.4. C/S FL bean interim, Dec.
 - 7.5. Sod N interim, Dec.
8. Nutrient Management, 2025 meetings
 - 8.1. Tomato advisory committee, 10/30
 - 8.2. Bean advisory committee, 11/6
 - 8.3. Sod advisory committee, 11/17
 - 8.4. Potato advisory committee, TBD
9. Future PNOC meetings
 - 9.1. Dec. 1, zoom (Drs. Bayabil & Zotarelli)
 - 9.2. Dec. 15, zoom (Dr. Lindsey, Drs. Agehara & Shukla)
 - 9.3. Feb. 11, 2026, zoom (Dr. Liu?)
 - 9.4. Jun. 3, 2026
 - 9.5. Sep. 3, 2026

Attendees

Michael Dukes, Vimala Naira, Sanjay Gupta, Chris Gunter, Rao Mylavarapu, Samira Daroub, Franta Majs, Jerry Fankhauser, Lincoln Zotarelli, Haimanote Bayabil, Sanjay Shukla, Robert Gilbert, Shinsuke Agehara, Cheryl Mackowiak, Saqib Mukhtar, David Liu, Patrick Marr

Meeting Summary

Michael Dukes opened the meeting; the committee approved the minutes from the previous meeting on September 3, 2025. Dr. Dukes introduced Paul White (coming from USDA ARS in Louisiana) as the new lead for the Nutrient Management program. Dr. Dukes noted that he will remain on the committee and assist with Paul's transition to his new role at UF. Research updates highlighted a strong consensus toward developing region-specific phosphorus (P) fertilizer recommendations that integrate both agronomic and environmental perspectives.

Dr. Vimala Nair presented findings linking soil phosphorus availability, extraction methods, and environmental risk thresholds, proposing a framework that better connects soil test results with water-quality outcomes. Dr. Sanjay Shukla reported progress on updating tomato and potato P recommendations, emphasizing the influence of regional soils, drainage, and irrigation on fertilizer efficiency and yield. Dr. Lincoln Zotarelli outlined similar work for Northeast Florida potatoes, adapting statewide findings to local conditions. The committee agreed on the importance of moving from uniform statewide guidelines toward data-driven, site-specific recommendations. The next meeting will take place at 10:00am on December 1, 2025.

Minutes

- Call to Order and Approval of Minutes
 - o Meeting called to order at 10:00 a.m. by Dr. Michael Dukes.
 - o Minutes from the September 3, 2025, meeting were reviewed and approved.
- Program Leadership Update
 - o Dr. Dukes introduced Dr. Paul White (joining from USDA ARS in Louisiana) as the incoming leader for the Nutrient Management Program.
 - o Dr. Dukes will remain on the committee to support program continuity during the transition.
 - o Dr. Samira Daroub recommended that Dr. White attend the December 2025 meeting for orientation and engagement with the committee.
- Research Updates
 - o Soil Phosphorus – Dr. Vimala Nair
 - Dr. Nair presented ongoing research examining relationships among soil type, management history, and phosphorus (P) bioavailability across Florida's major soil orders.
 - The study compares traditional Mehlich-3 P testing with FeO-P and Haney H3A-P extraction methods, integrating results into the Soil Phosphorus Storage Capacity (SPSC) framework to assess agronomic and environmental thresholds.
 - Findings indicate that:
 - o A single statewide P threshold is not appropriate due to variability among soil orders.
 - o FeO-P (~20 mg/kg) and H3A-P (~30 mg/kg) effectively predict P sufficiency across soil types.
 - o SPSC values serve as an environmental indicator:
 - Positive SPSC – soils retain added P (low risk).
 - SPSC ≈ 0 – agronomic optimum reached.
 - Negative SPSC – soils become P sources (elevated leaching risk).

- Integrating FeO-P, H3A-P, and SPSC enables site-specific recommendations that align agronomic efficiency with water-quality protection.
 - Questions and discussion followed from Drs. Daroub, Mylavarapu, Liu, Agehara, and Bayabil.
- Tomato Phosphorus Recommendations – Dr. Sanjay Shukla
 - Dr. Shukla summarized recent multi-year field studies (2021–2024) across Central and South Florida evaluating P fertilizer needs under modern production systems.
 - Key points:
 - Current UF/IFAS guidelines (particularly “0 lb P₂O₅/acre” for high-P soils) are not consistently adequate to sustain commercial yields.
 - Central Florida trials showed yield increases with 100–150 lb P₂O₅/acre, particularly when initial soil P ≤ 60 ppm.
 - South Florida trials indicated optimal yields at 50–75 lb P₂O₅/acre, even in moderately high-P soils.
 - The Olsen P test correlated most strongly with yield response and P availability.
 - Water management (irrigation, drainage) had a significant effect on nutrient efficiency and yield performance (“ditch effect”).
 - Next Steps: UF/IFAS will develop region- and water-integrated P recommendations for 2025–26 PNOC review.
- Potato Research – Central and South Florida (Dr. Shukla)
 - Multi-year UF/IFAS trials (2021–2024) found that most potato fields in Central and South Florida maintain sufficient soil P for commercial yield.
 - No significant yield response observed between 0–225 lb P₂O₅/acre where Mehlich-3 P levels exceeded 75 ppm.
 - Regional variability and drainage conditions strongly influenced yield response; accounting for “ditch effects” is essential in interpreting trial outcomes.
 - Conclusions and Discussion:
 - Site-specific P management is needed in place of uniform statewide rates.
 - Continued modeling (soil, hydrology, weather) will support improved fertilizer guidelines.
 - Dr. Chris Gunter emphasized regional calibration; Dr. Shukla underscored water conservation considerations alongside nutrient management.
- Potato Research – Northeast Florida (Dr. Lincoln Zotarelli)
 - Dr. Zotarelli presented progress on developing region-specific P fertilizer recommendations for Northeast Florida potatoes, integrating data from nine multi-year UF/IFAS studies (2015–2025).
 - Dataset: 17 sites, 732 plots across sandy soils (Placid, Ellzey, Holopaw, Tocoi).
 - Key findings:

- Yield responses were significant only in low-P soils (Mehlich-3 <150–200 mg/kg); no benefit observed in high-P soils (>400–450 mg/kg).
- Critical thresholds identified at 215 mg/kg (M1) and 415 mg/kg (M3).
- P-use efficiency declined sharply at higher soil P levels, supporting tiered recommendation categories.
- Modeling (Linear/Quadratic Plateau, Mitscherlich, Cate–Nelson) established yield plateau near 486 mg/kg M3-P.
- The new calibration supports alignment with the Clean Waterways Act (SB 712) while improving local accuracy.
- Ongoing Work:
 - Continued data synthesis and model refinement.
 - Preparation of manuscripts (yield response, low-background trials, calibration studies).
 - Stakeholder engagement through PNOC, Potato Advisory Committee, and Frito-Lay Grower meetings (Nov–Dec 2025).
- Overall goal: Deliver a data-driven, regionally adaptive, and environmentally sustainable P management framework for potato production in Northeast Florida.
- Supporting literature, [s12230-014-9371-2.pdf](#)
- Discussion Summary
 - Members agreed on the importance of regionally calibrated, site-specific, and hydrology-informed P recommendations.
 - Consensus to continue integrating agronomic and environmental data in developing UF/IFAS statewide guidance.
- Adjournment
 - Meeting adjourned at 12:02 p.m.
 - Next meeting scheduled for Monday, December 1, 2025 (10:00am–12:00pm).

Meeting minutes prepared and submitted by Patrick Marr.