

Rice Production and Drainage Water Quality in the EAA

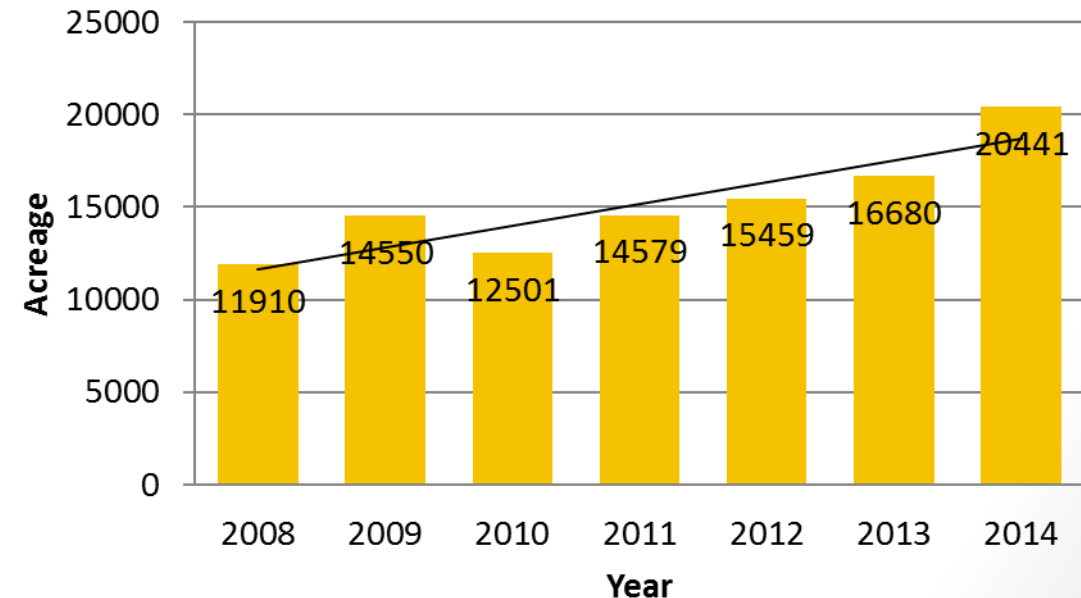
BMP-Water Detention

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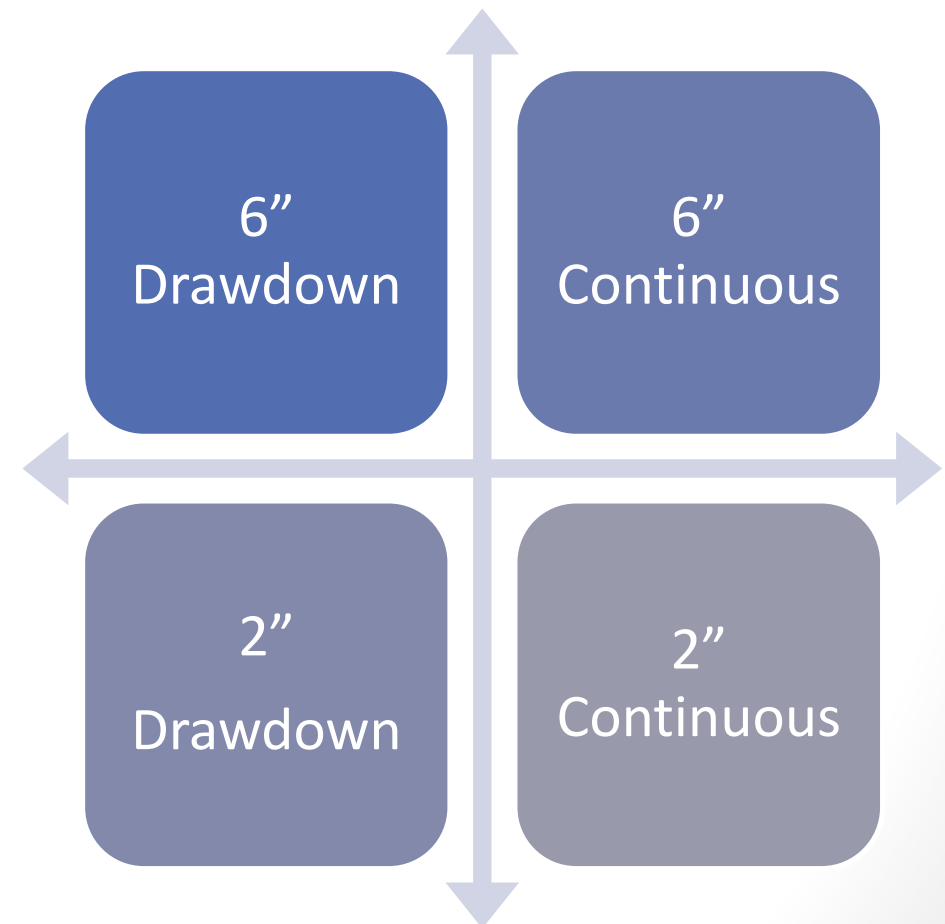
Background

- Everglades Forever Act, mandates a 25% reduction of total phosphorus loads from the Everglades Agricultural Area (EAA) basin when compared to the pre-BMP.
- Effects of mandatory BMPs in the EAA have been studied for several years by Daroub et al., (2009) and P discharges have shown a decreasing trend from sugarcane farms.
- Discharges from mixed crop farms (Rice, Vegetables, etc.) have not shown a significant trend.
- Rice production has increased by more than
- 70% since 2008.



Experimental Design

- Four water treatments.
- Two varieties: Cheniere, Taggart.
- Dry-seeding with 100 lbs/acre of iron sulfate.
- Field was flooded 20 days after planting.



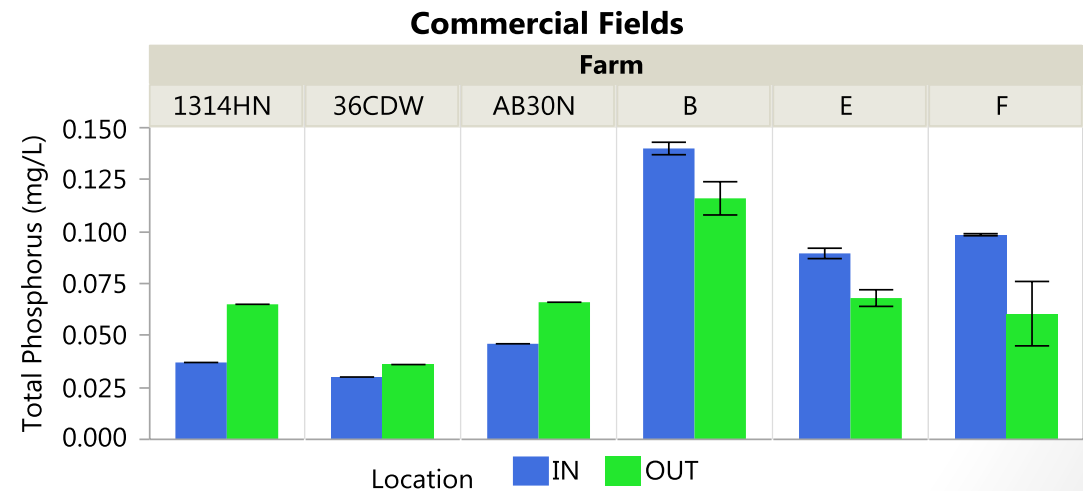
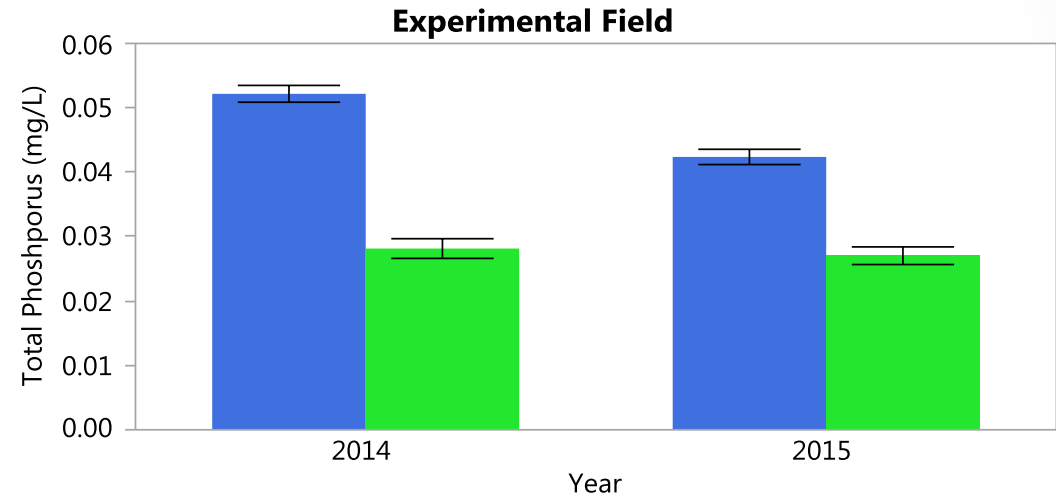
Drainage Water Quality

Experimental field:

- Total phosphorus was reduced by 42% on average.

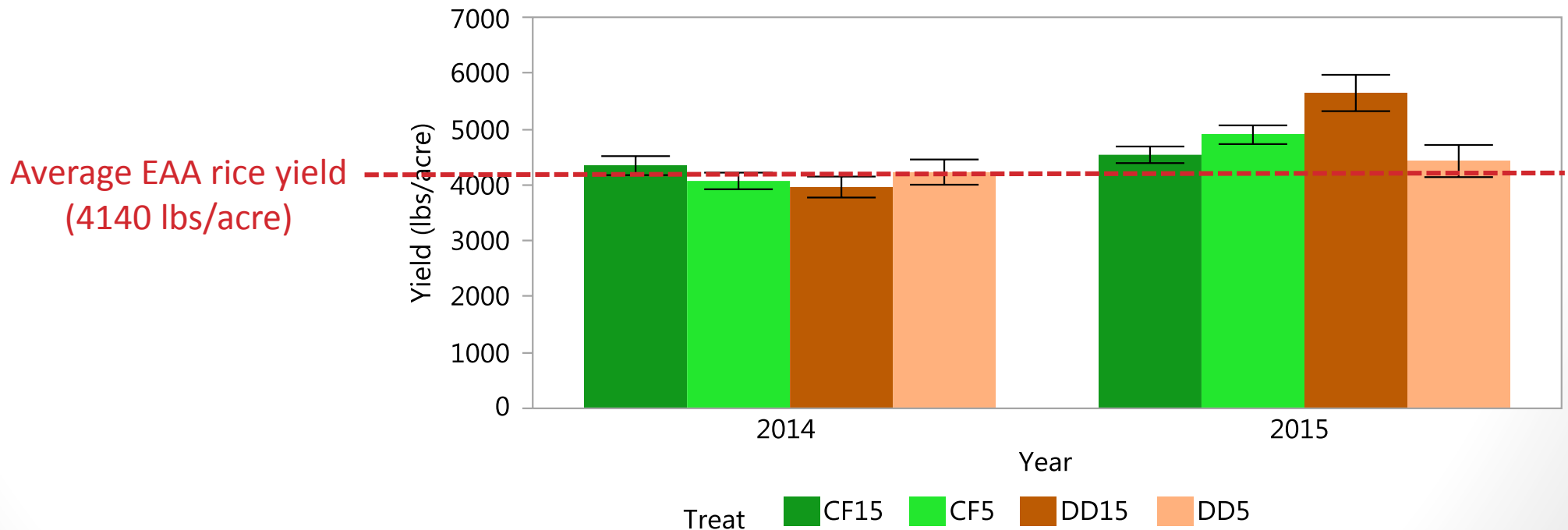
Commercial field:

- When water was cycled (23% reduction).
- When was not cycled (46% increase).
- Water quality was not affected by drawdown.



Rice Yields

- Grain yield was on average 4200 lbs/acre in both years.
- Shallow water depth and midseason drawdown did not show a negative effect on rice yield.
- Cheniere had significantly higher yields.
- Taggart variety produced significantly bigger stalks and grain compared to Cheniere in both years.



Conclusion

Water Quality

All water treatments reduced:

Total phosphorus by 42%

Total phosphorus in commercial field by 23%

Due to Uptake and Seepage

Rice Yields

N, Mn, Zn, Cu, Fe and B were not sufficient

Treatments did not significantly affect
nutrient uptake and yields

Yields: Cheniere > Taggart

4200 lbs/acre average yields

Thank You



Questions:
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- Dr. Jehangir Bhadha
- Dr. Timothy Lang
- Dr. Mark Clark
- Dr. Mabry McCray
- Dr. Samira Daroub

Industry cooperators:

- Roth Farms
- Sugar Cane Growers Cooperative
- Wedgworth Farms

