



Corn and soybean yield across continuum of soil test phosphorus concentrations under long-term drawdown

Nicole Fiorellino^a, Amy Shober^b, Robert Kratochvil^a, and Frank Coale^a

^aUniversity of Maryland, College Park; ^bUniversity of Delaware



DEPARTMENT OF
PLANT SCIENCE &
LANDSCAPE ARCHITECTURE

Research Design and Timeline

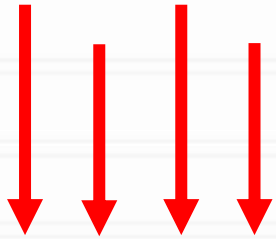
1994 - 1998

1999-2000

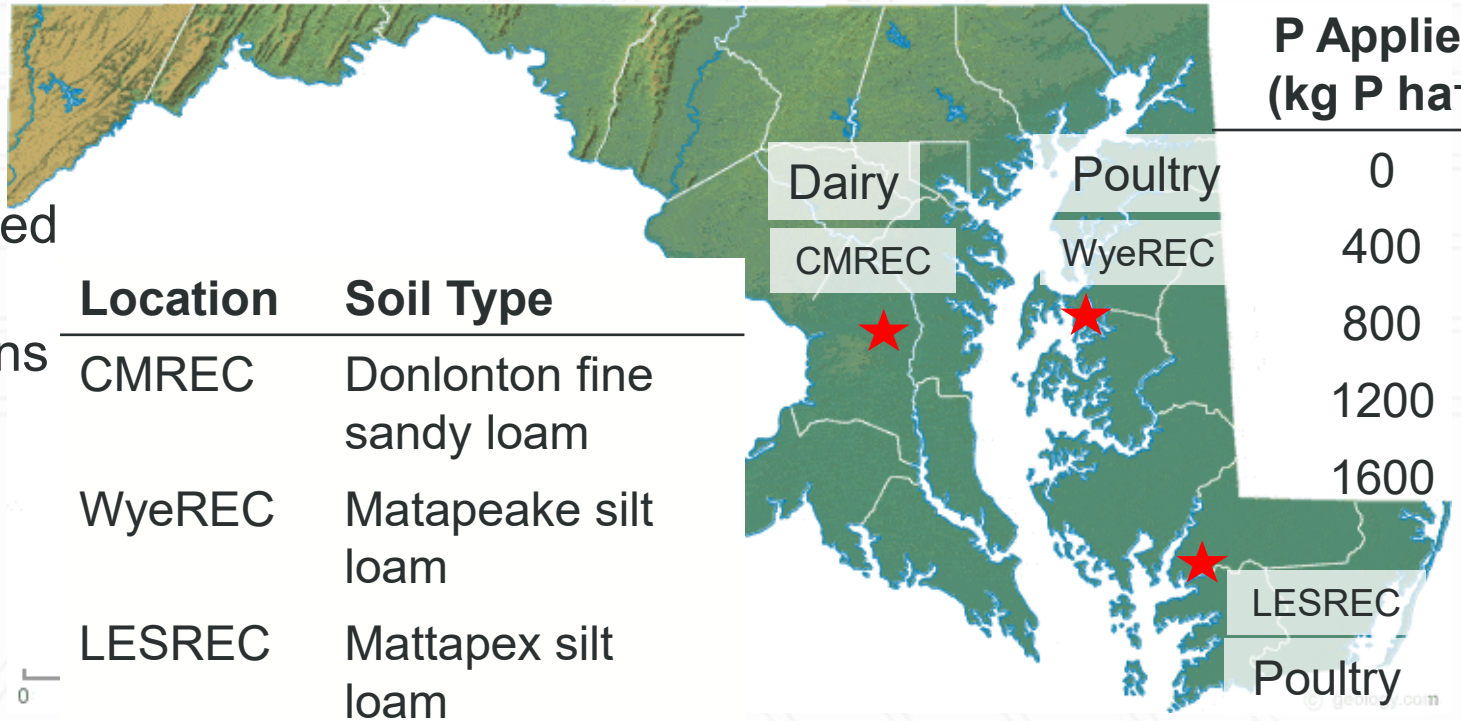
2001-present



Soil Test P Drawdown Monitoring



Manure applied
to ↑ soil P
concentrations

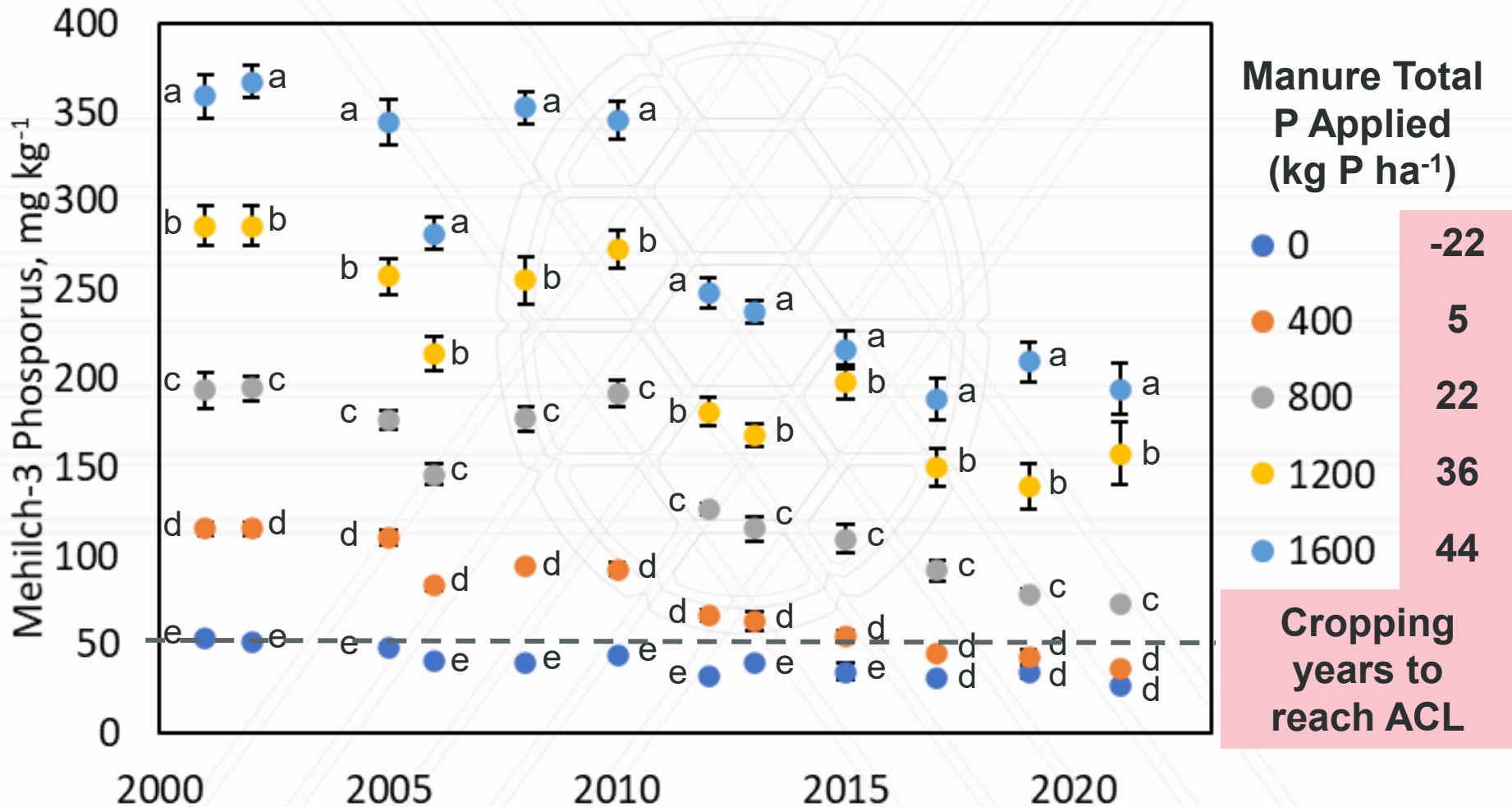


Location	Soil Type
CMREC	Donlonton fine sandy loam
WyeREC	Matapeake silt loam
LESREC	Mattapex silt loam

Manure Total P Applied (kg P ha⁻¹)

Dairy	Poultry	0
CMREC	WyeREC	400
		800
		1200
		1600
	LESREC	
	Poultry	

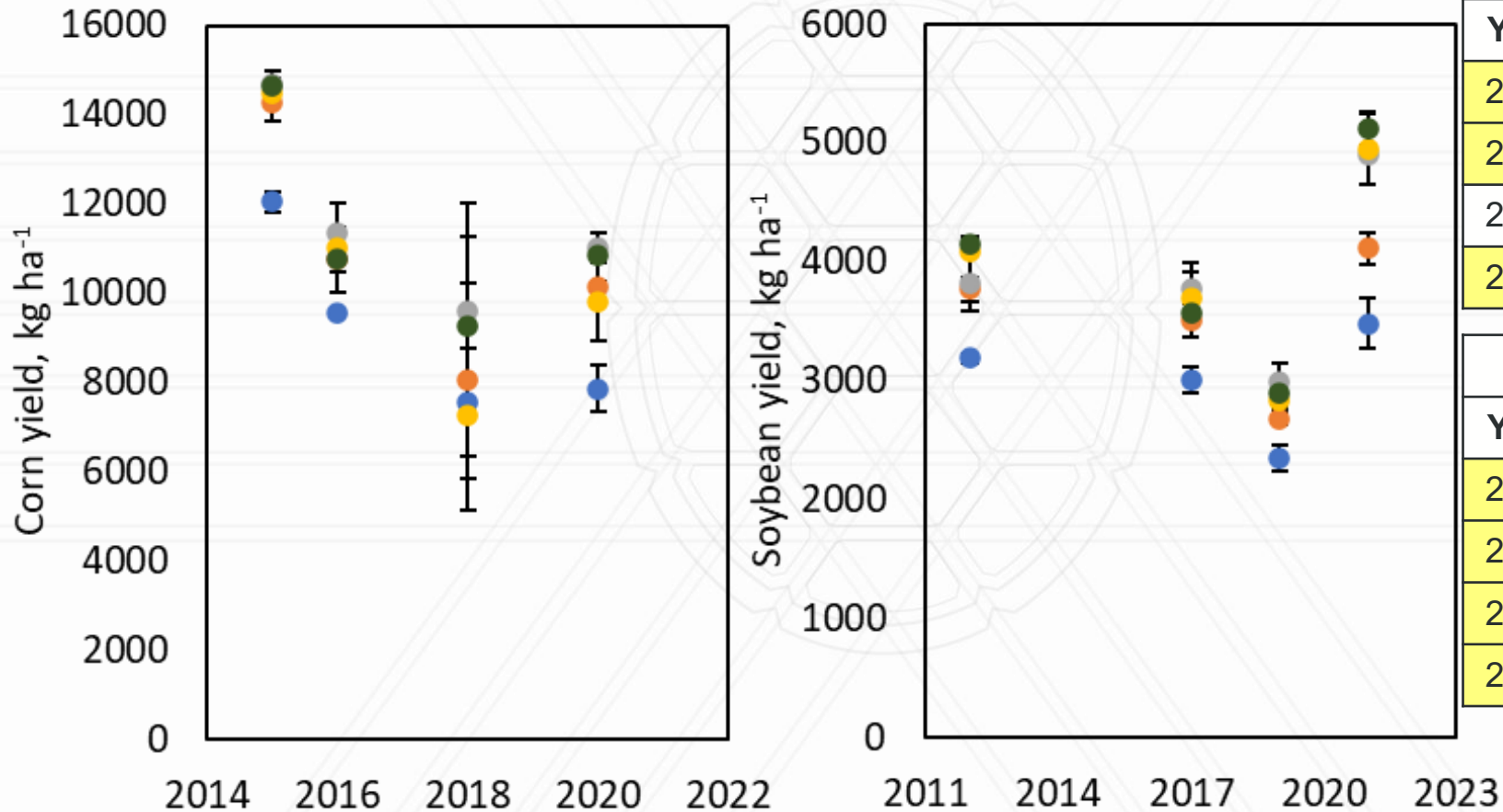
Mehlich-3 P trends - Mattapex silt loam



Crop Yield – Mattapex silt loam

Total Manure P application rate (kg/ha)

● 0 ● 400 ● 800 ● 1200 ● 1600



Corn	
Year	P value
2015	<0.0001
2016	0.0585
2018	0.8447
2020	0.0042

Soybean	
Year	P value
2012	0.0003
2017	0.0071
2019	0.0111
2021	0.0008



DEPARTMENT OF
PLANT SCIENCE &
LANDSCAPE ARCHITECTURE

Nicole Fiorellino, Ph.D.

Assistant Professor & Extension Specialist, Agronomy

301.405.6241 / nfiorell@umd.edu