Large-Plot Research Trials with Peanuts 2025

David Jordan
North Carolina State University
david_jordan@ncsu.edu

Research funded by the NC Peanut Growers Association

Large-Plot Research Trials with Peanuts

Bio-Stimulant (Northampton County)

Ammonium Sulfate and Potassium (Johnston County)

Ammonium Sulfate (Martin County)

Prohexadione Calcium Rates (Cumberland and Halifax Counties and Upper Coastal Plain and Peanut Belt Research Stations)

Sub-Soiling Comparison (Upper Coastal Plain and Peanut Belt Research Stations)

Tillage Systems and Planting Flat (Halifax County)

Tillage and Cover Crop Comparison (Upper Coastal Plain and Peanut Belt Research Stations)

Chlorothalonil Programs (Martin County)

Brake versus Valor SX (Gates and Martin Counties)

Northampton County

Bio-Stimulant Comparison

Cooperator: Jeffery Coggins

Extension Agent: Craig Ellison

Planting date: May 8 (NC 20)

Dig date: October ?

Harvest date: October 22

May: Dry

June: Dry

July: Dry

August: Moist

September: Dry

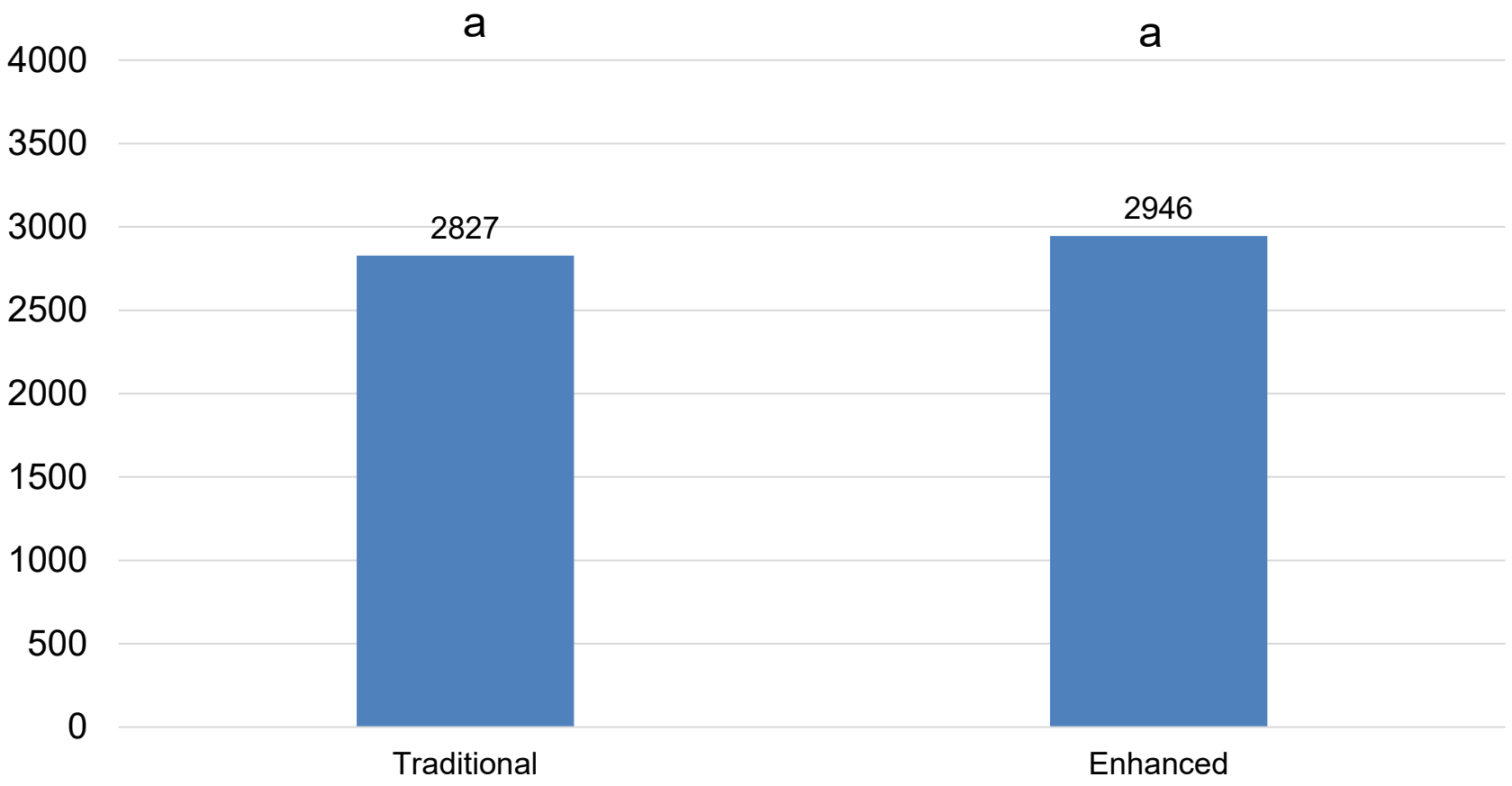
Standard: Generic Imidacloprid (11 oz) plus Catapult Inoculant plus Challenge (16 oz)

Enhanced: Generic Imidacloprid (11 oz) plus Catapult Inoculant plus Premium x-tra (24 oz) plus Challenge (32 oz) plus Establish (32 oz) plus Boron x-tra (5 oz)

Peanut Yield (pounds per acre)

Northampton County

Bio-Stimulant



P = 0.3132, CV = 5.6

Johnston County

Nitrogen, Potassium and Magnesium

Cooperator: Blake Adams

Extension Agent: Tim Britton

Planting date: May ?

Fertilizer applications: July 9

Dig date: October ?

Harvest date: October 23

May: Dry

June: Dry

July: Dry

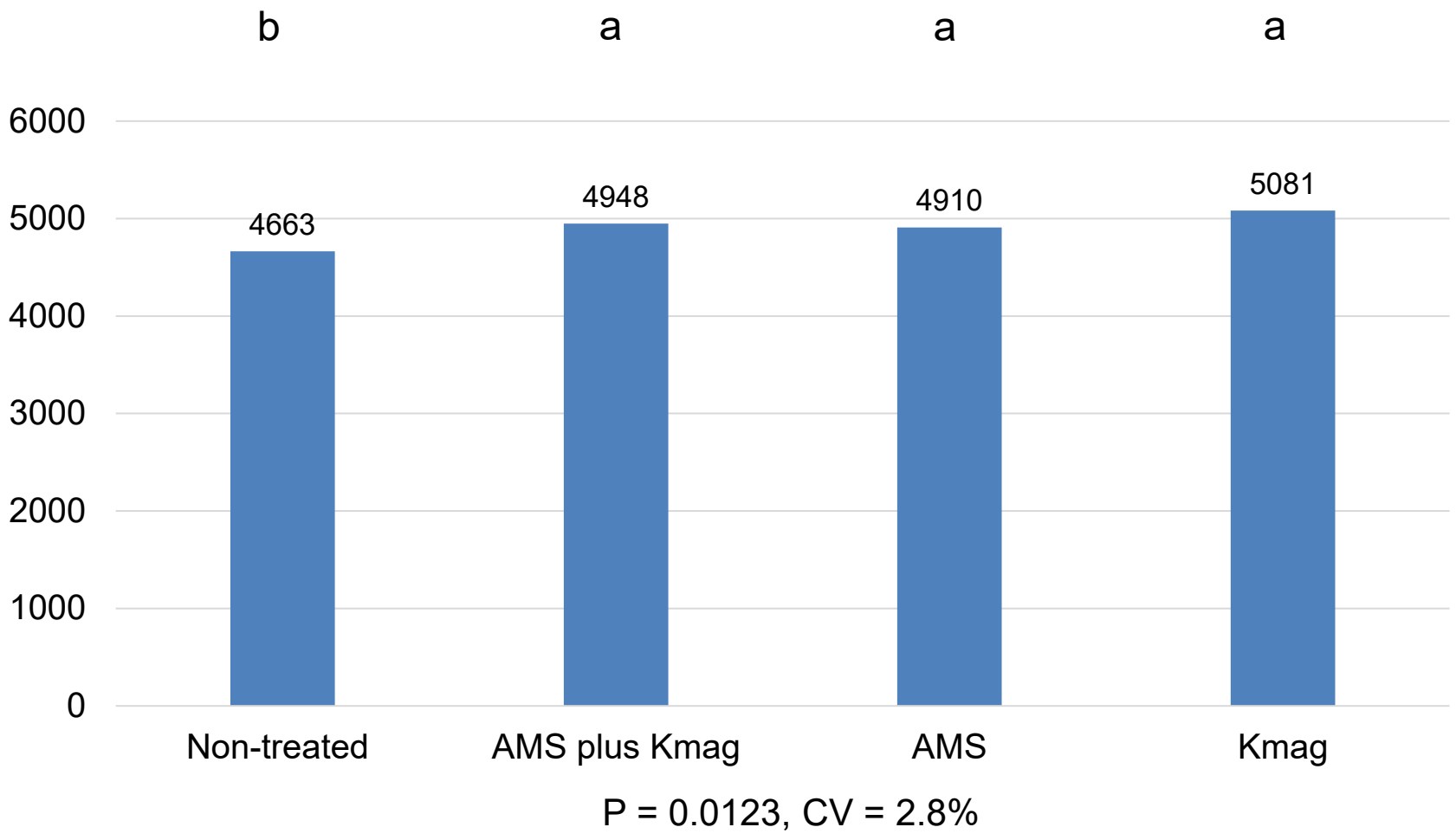
August: Moist

September: Dry

Peanut Yield (pounds per acre)

Johnston County – Blake Adams

KI = 22-33 immediately prior to application on July 9



P = 0.0123, CV = 2.8%

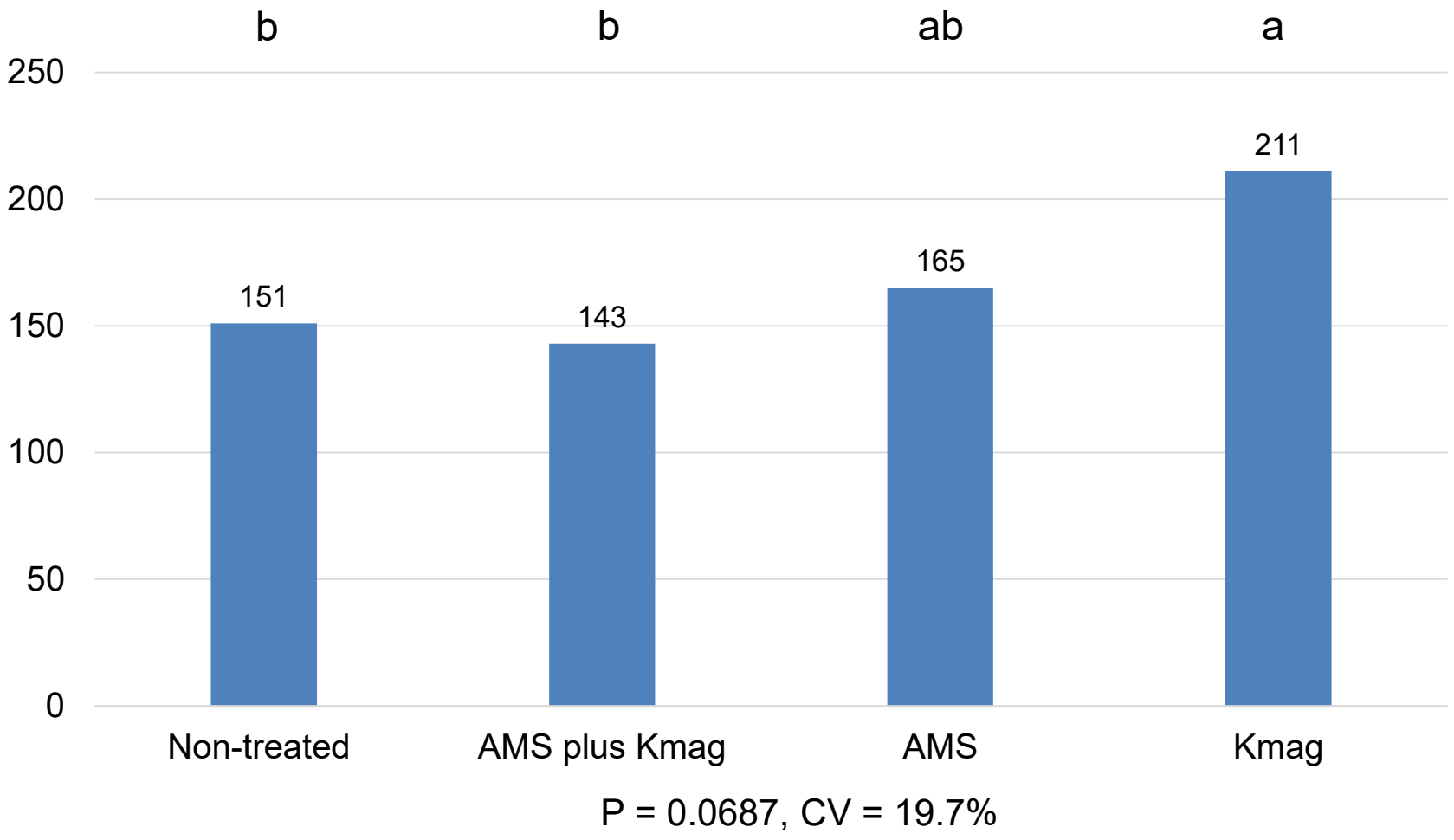
Net Return ($ per acre)

Johnston County – Blake Adams

KI = 22-33 immediately prior to application on July 9

Net return = (yield × $0.2675) – (fertilizer cost + application cost + drying and hauling costs)

Ammonium sulfate ($35/acre), KMag ($30/acre), Application ($10/acre)



P = 0.0687, CV = 19.7%

Cumberland County

Kudos OD Rates

Cooperator: Justin Smith

Extension Agent: Connor Peacock

Planting date: May ?

Dig date: October ?

Harvest date: ?

May: Dry

June: Dry

July: Dry

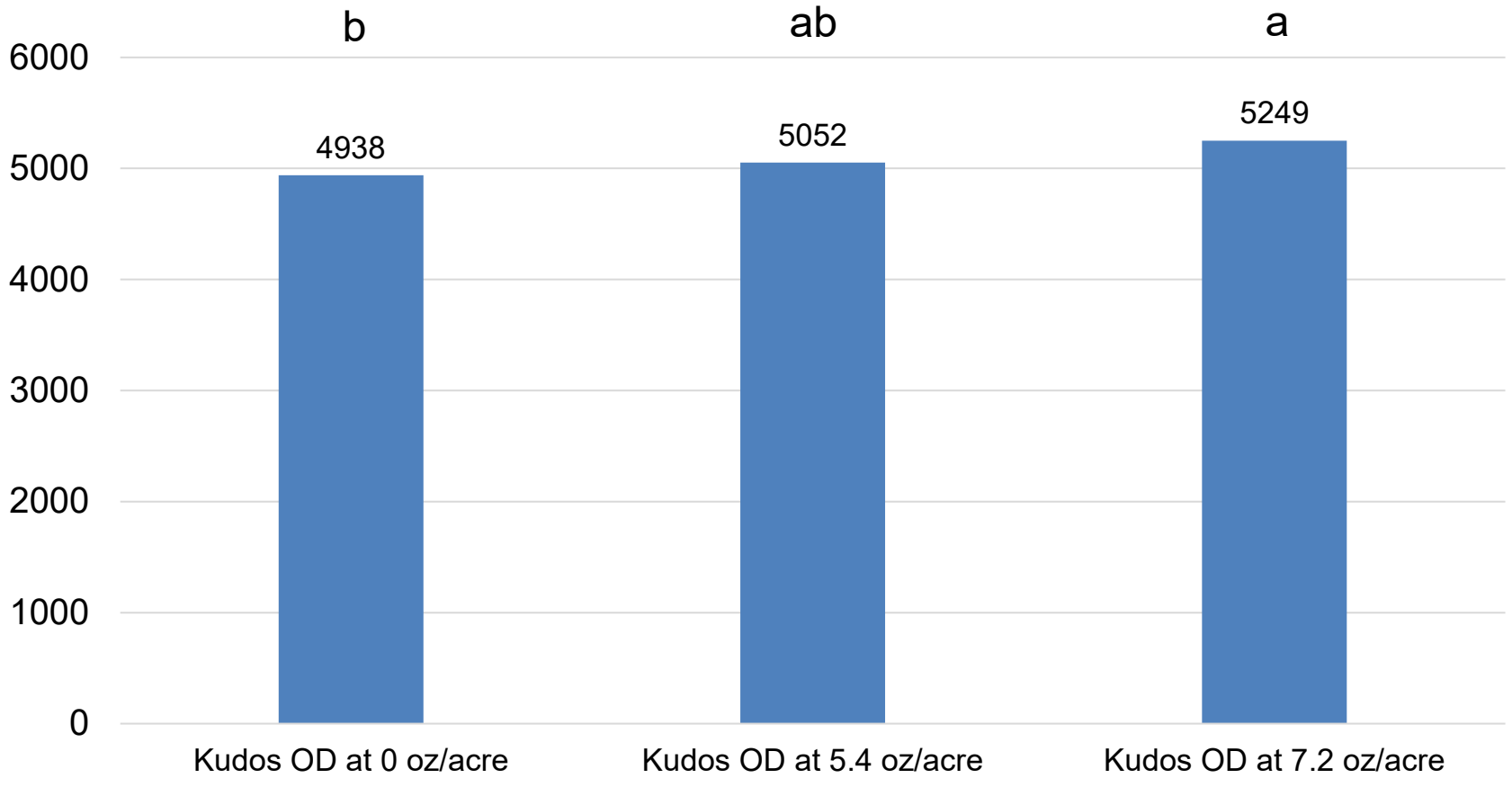
August: Moist

September: Dry

Peanut Yield (pounds per acre)

Cumberland County - 2025

Kudos OD Rates



P = 0.0596, CV = 2.7%

Halifax County

Kudos OD Rates

Cooperator: Elizabeth and Ray Garner

Extension Agent: Brandon Pike

Planting date: May ?

Dig date: October ?

Harvest date: ?

May: Dry

June: Dry

July: Dry

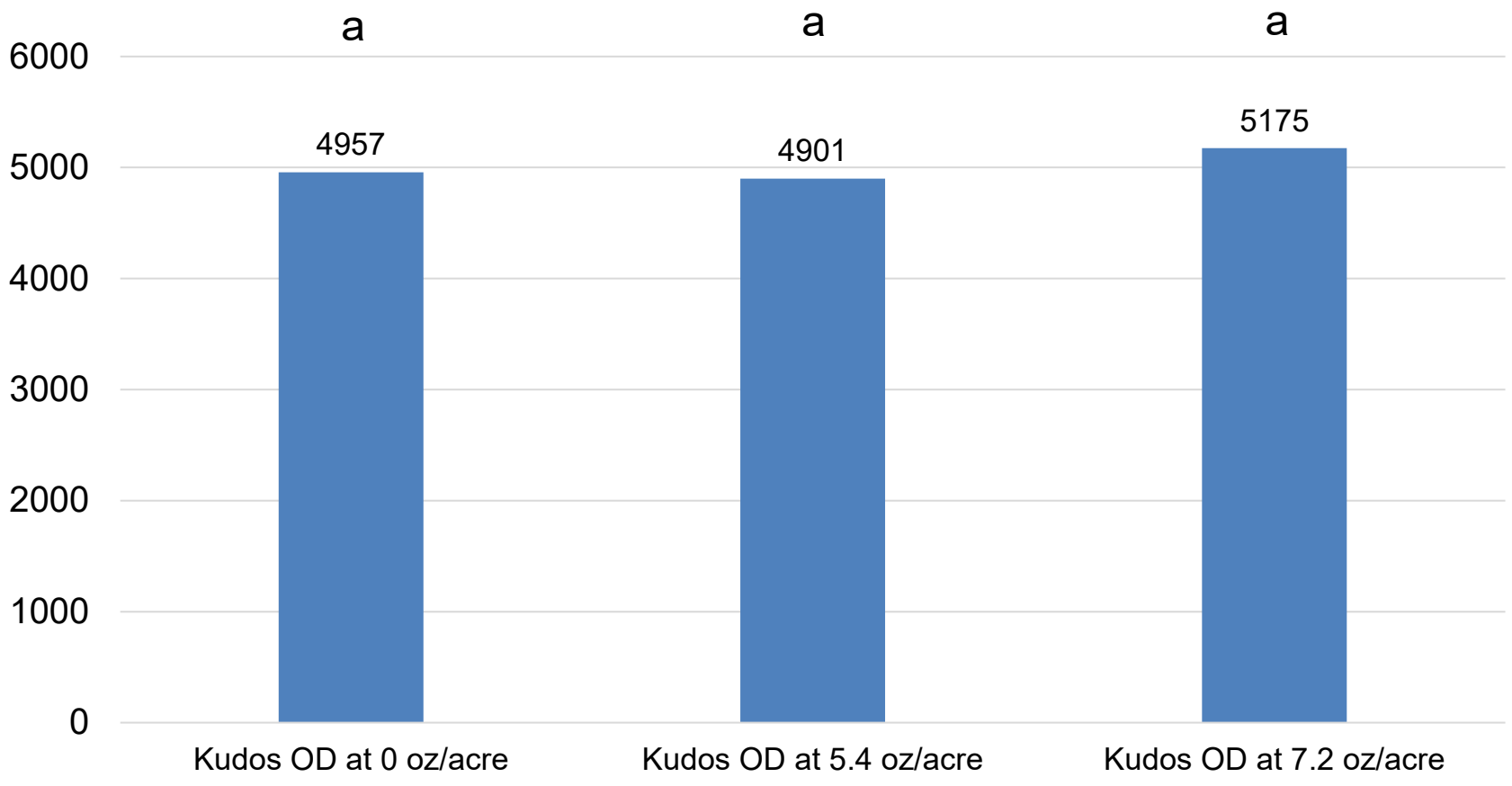
August: Moist

September: Dry

Peanut Yield (pounds per acre)

Halifax County - 2025

Kudos OD Rates



P = 0.5899, CV = 7.6%

Peanut Belt Research Station

Kudos OD Rates

Cooperator: Brian Stevens and Ivy Lanier

Planting date: May ?

Dig date: October ?

Harvest date: ?

May: Dry

June: Dry

July: Dry

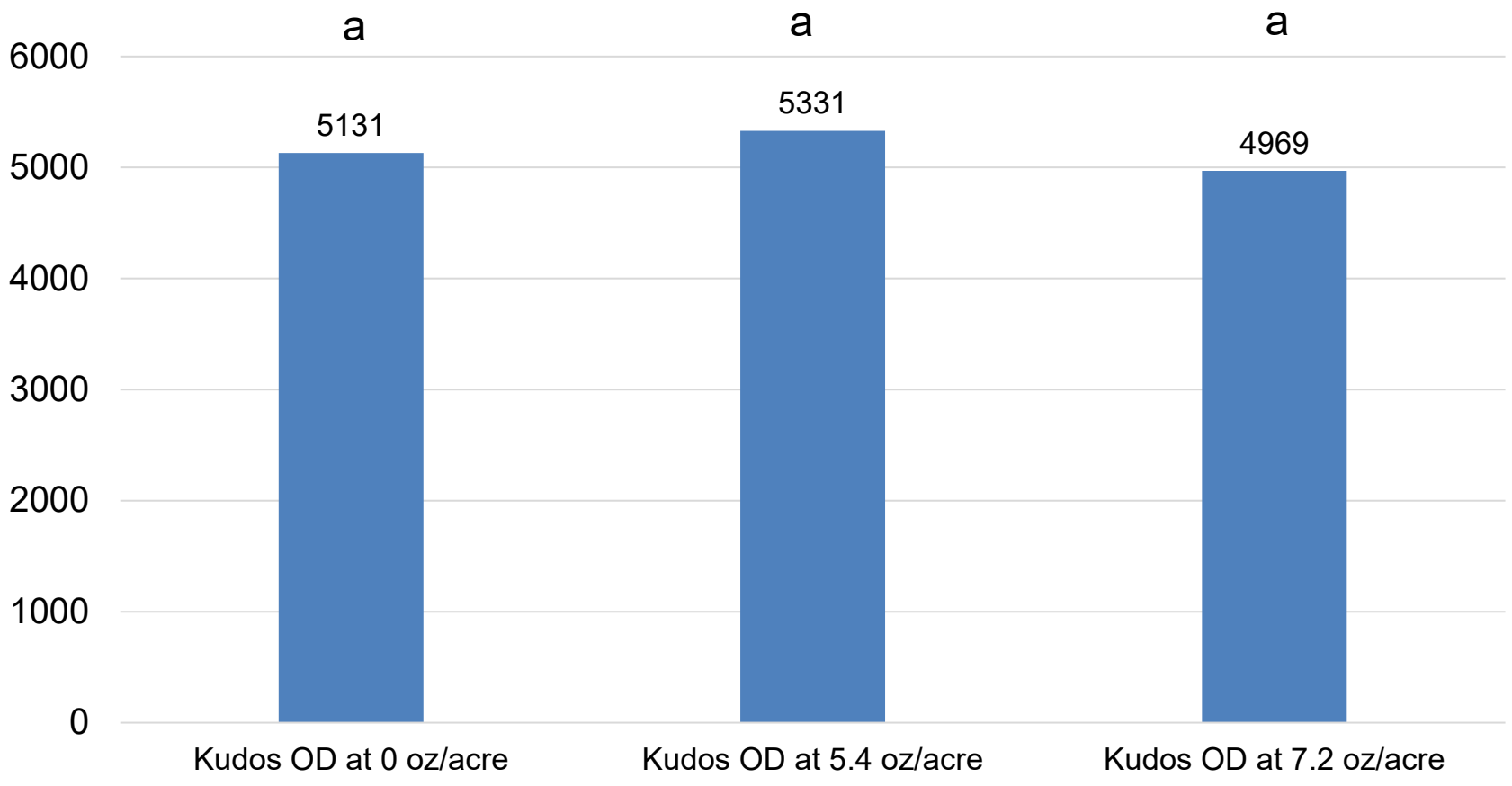
August: Moist

September: Dry

Peanut Yield (pounds per acre)

Peanut Belt Research Station - 2025

Kudos OD Rates



P = 0.7729, CV = 9.9%

Upper Coastal Plain Research Station

Kudos OD Rates

Cooperator: Michael Brake and Creig Deal

Planting date: May ?

Dig date: October ?

Harvest date: ?

May: Dry

June: Dry

July: Dry

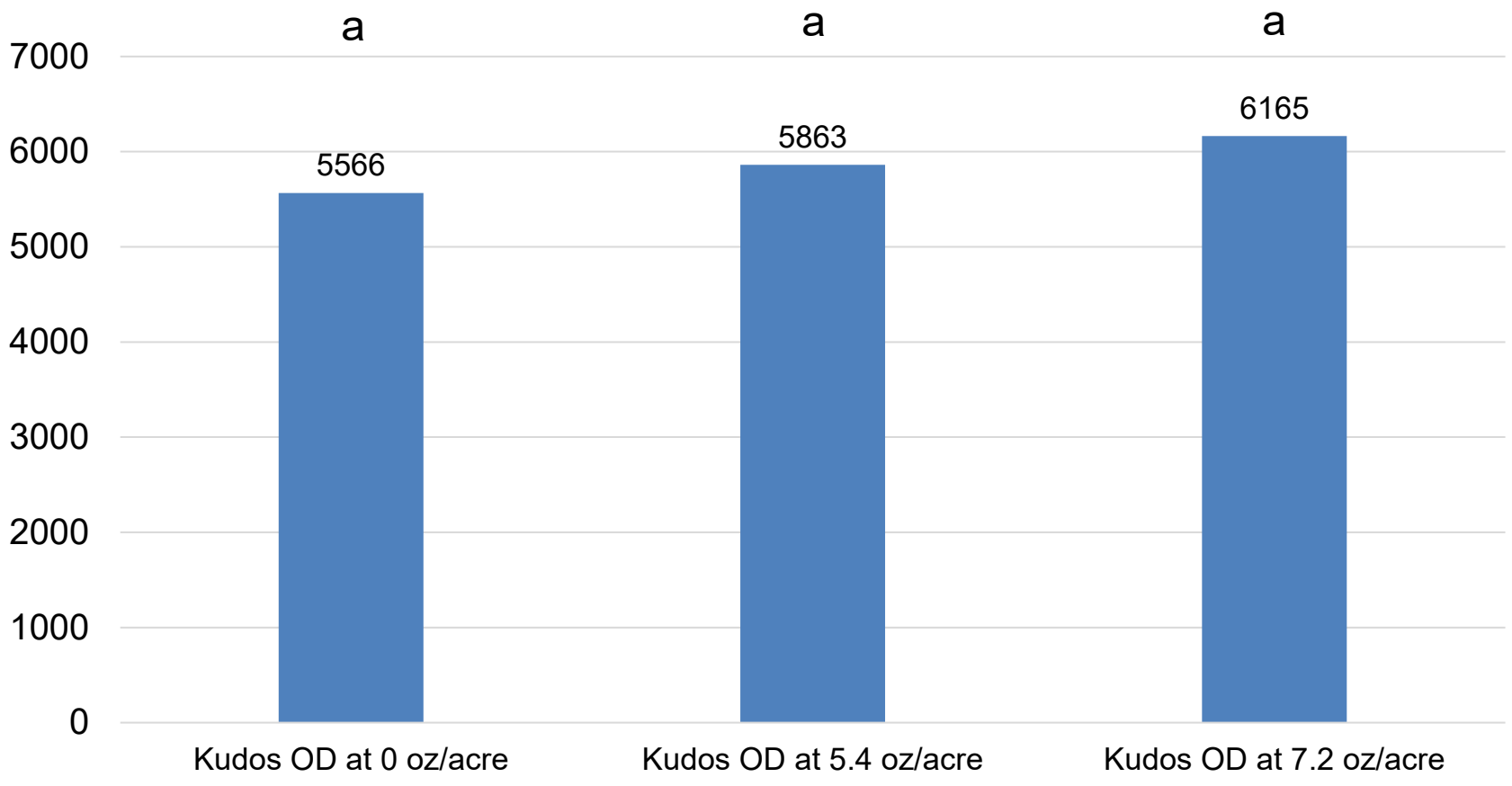
August: Moist

September: Dry

Peanut Yield (pounds per acre)

Upper Coastal Plain Research Station - 2025

Kudos OD Rates



P = 0.2077, CV = 7.11%

Summary from 2024 and 2025

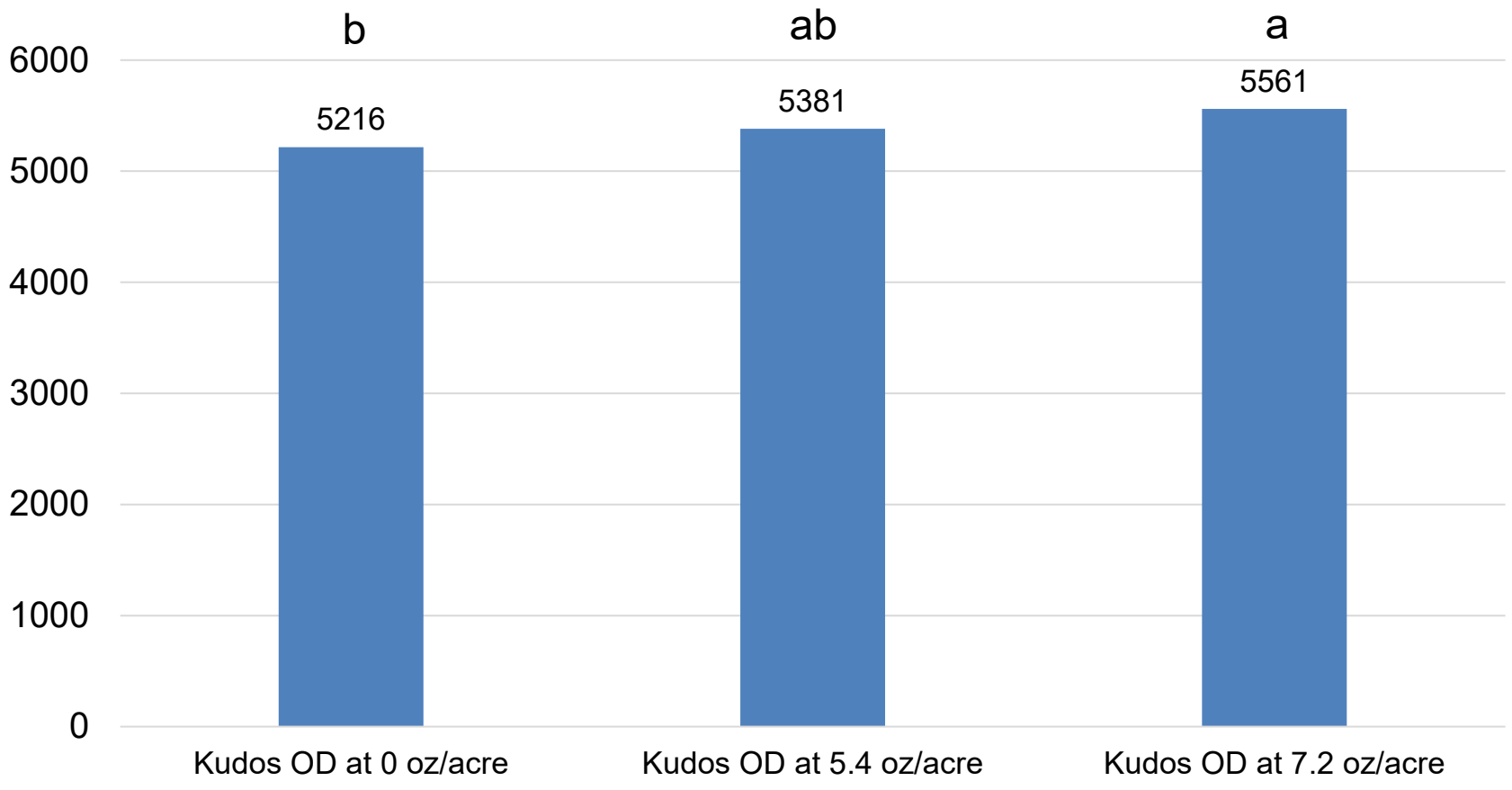
Although significant yield differences were not observed when considering individual locations, when data were pooled over locations that included both years, Kudos OD rate had a significant impact on yield

The following graph demonstrates the differences between rates averaged over 9 experiments (combinations of years and locations)

Peanut Yield (pounds per acre)

2024 and 2025 Average from 9 Trials

Kudos OD Rates



Kudos OD Rate; P = 0.0696, CV = 11.6%

Location, P = <0.0001; Location × Kudos OD Rate, P = 0.9785

Peanut Belt Research Station

Sub-Soiling Comparison

Cooperator: Brian Stevens and Ivy Lanier

Planting date: May ?

Dig date: October ?

Harvest date: ?

May: Dry

June: Dry

July: Dry

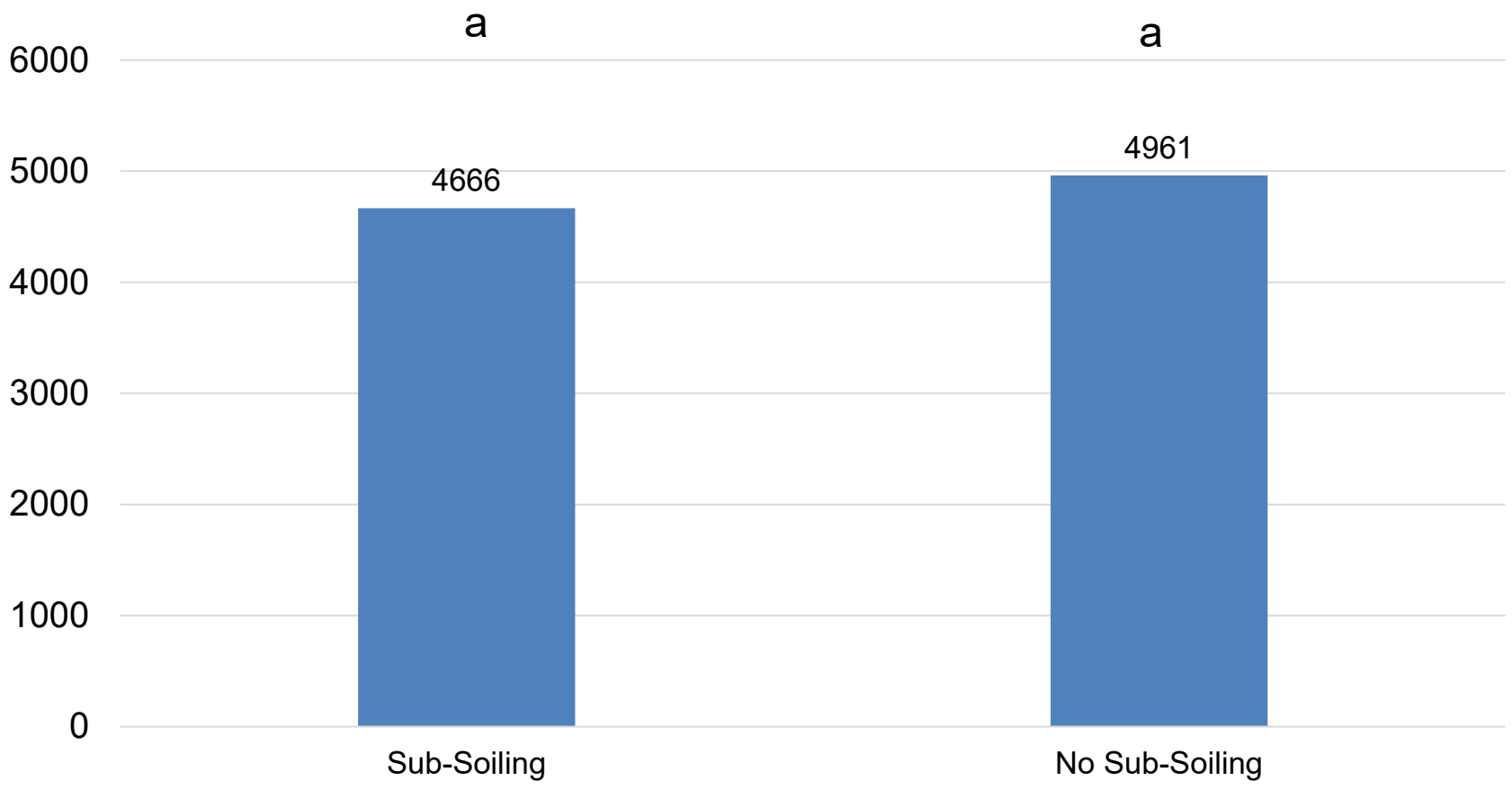
August: Moist

September: Dry

Peanut Yield (pounds per acre)

Peanut Belt Research Station

Sub-Soiling



P = 0.2066, CV = 5.1

Upper Coastal Plain Research Station

Sub-Soiling Comparison

Cooperator: Michael Brake and Creig Deal

Planting date: May ?

Dig date: October ?

Harvest date: ?

May: Dry

June: Dry

July: Dry

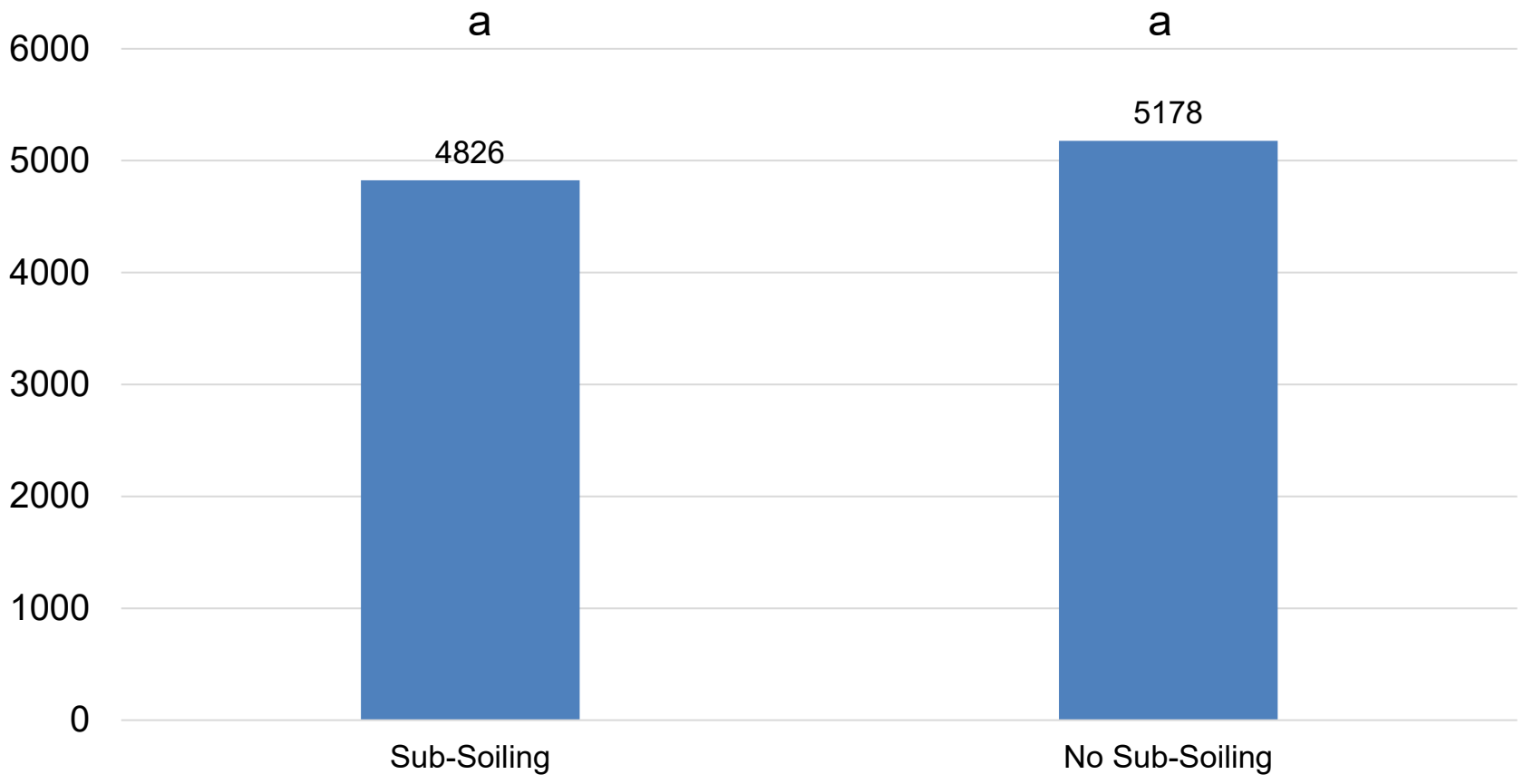
August: Moist

September: Dry

Peanut Yield (pounds per acre)

Upper Coastal Plain Research Station

Sub-Soiling



P = 0.2558, CV = 7.1

Halifax County

Tillage Comparison

Cooperator: Elizabeth and Ray Garner

Extension Agent: Brandon Pike

Planting date: May ?

Dig date: October ?

Harvest date: ?

May: Dry

June: Dry

July: Dry

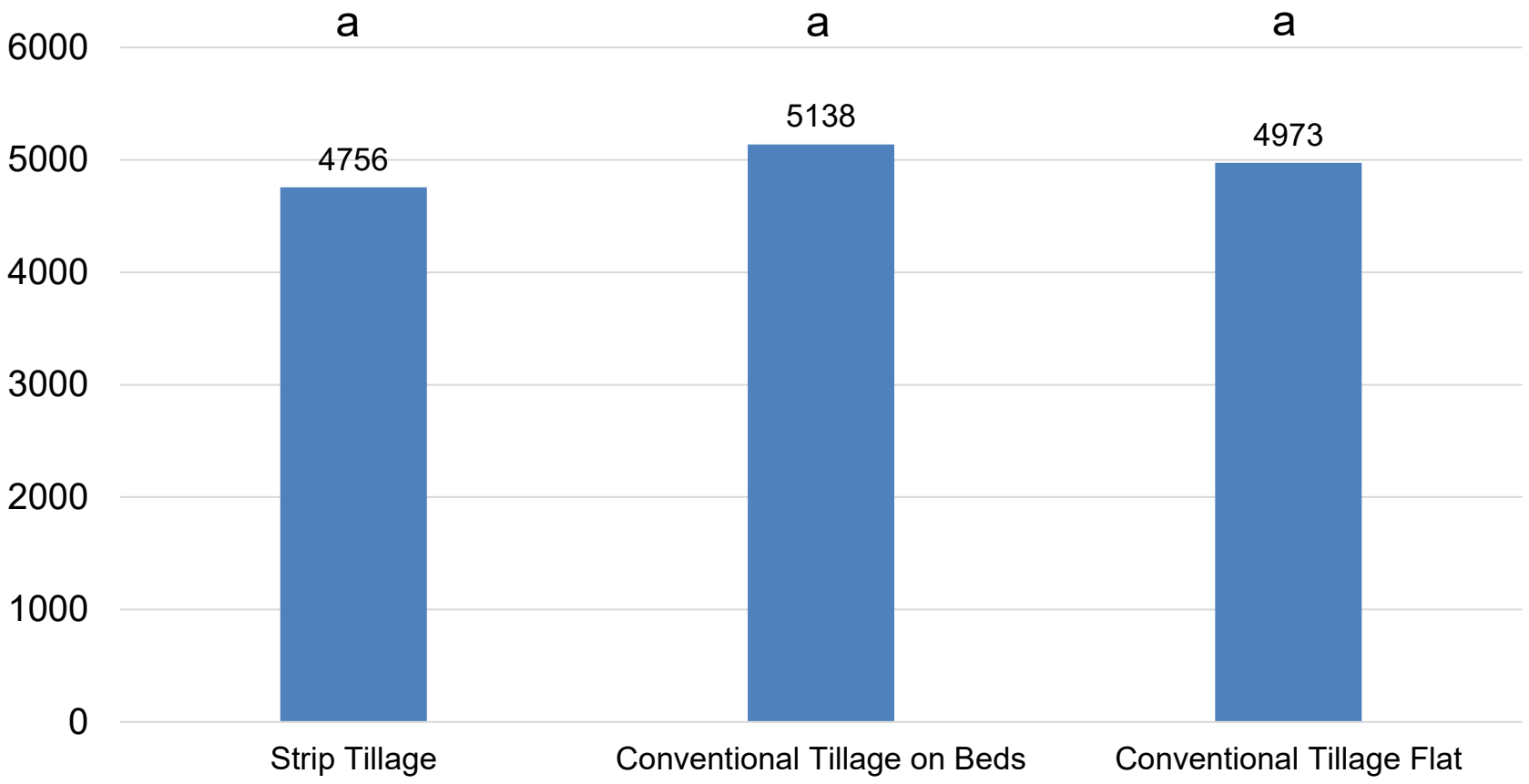
August: Moist

September: Dry

Peanut Yield (pounds per acre)

Halifax County, Elizabeth and Ray Garner

Highway 903

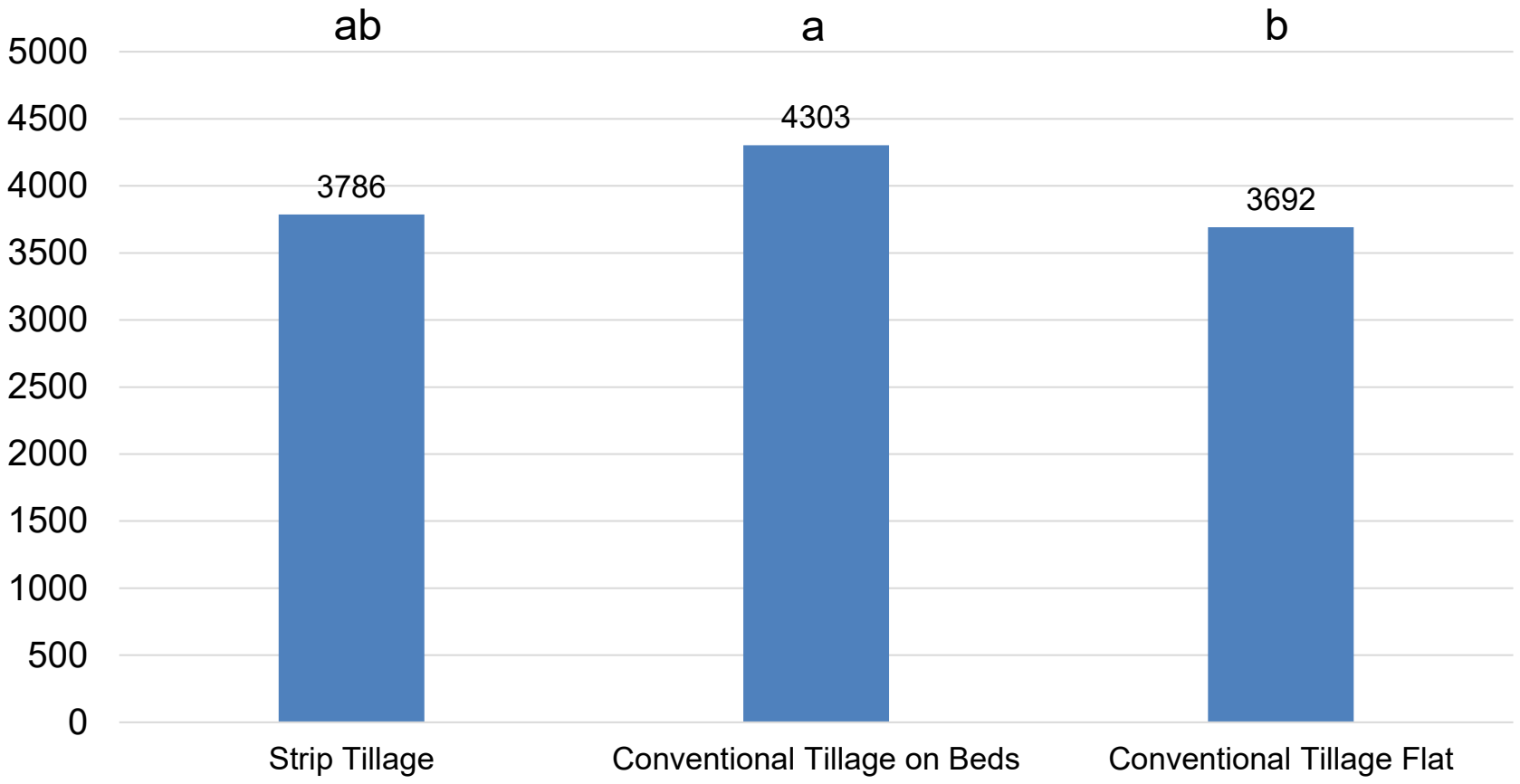


P = 0.4193, CV = 7.7%

Peanut Yield (pounds per acre)

Halifax County, Elizabeth and Ray Garner

Smith Farm

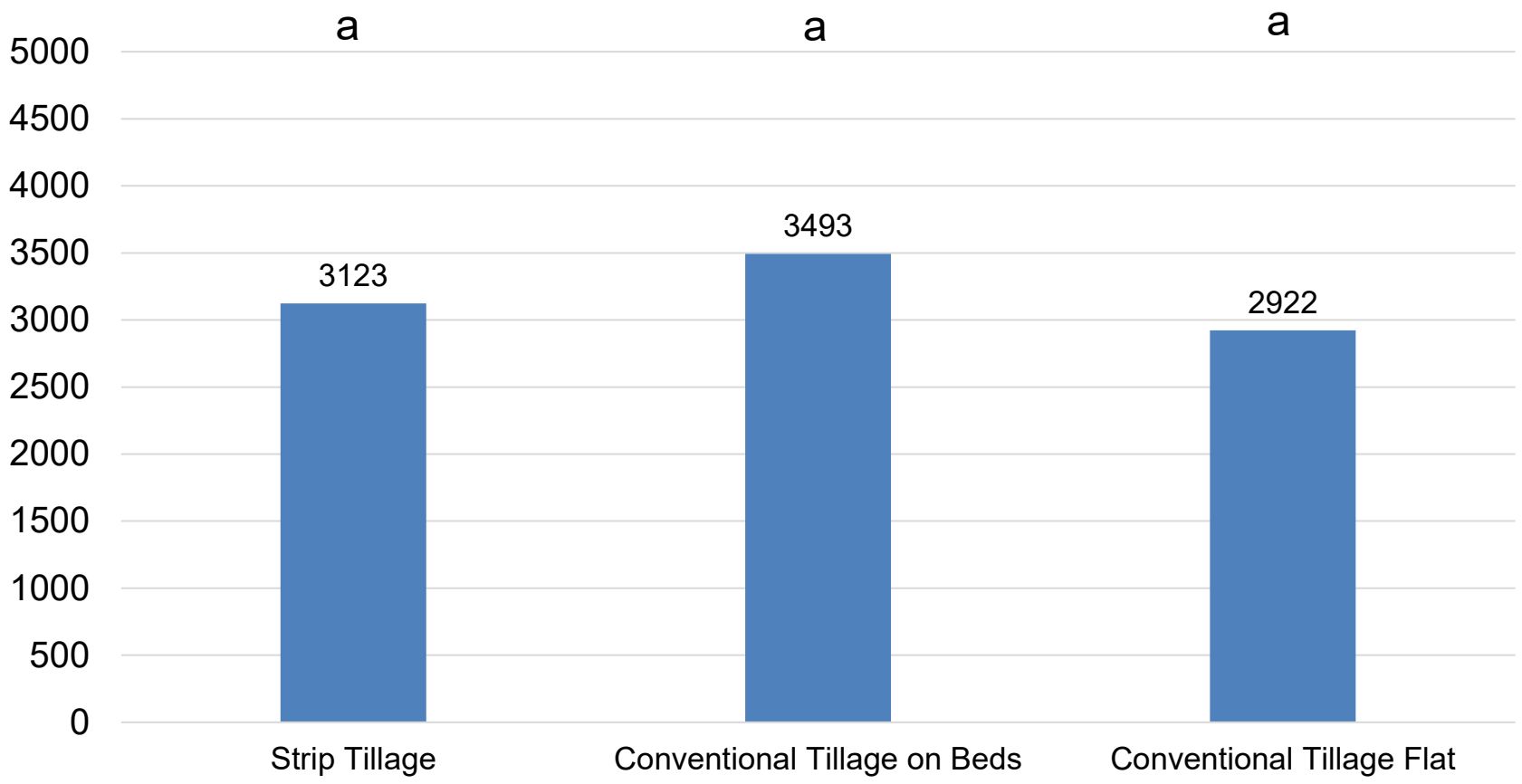


P = 0.0662, CV = 8.0%

Peanut Yield (pounds per acre)

Halifax County, Elizabeth and Ray Garner

Bozeman

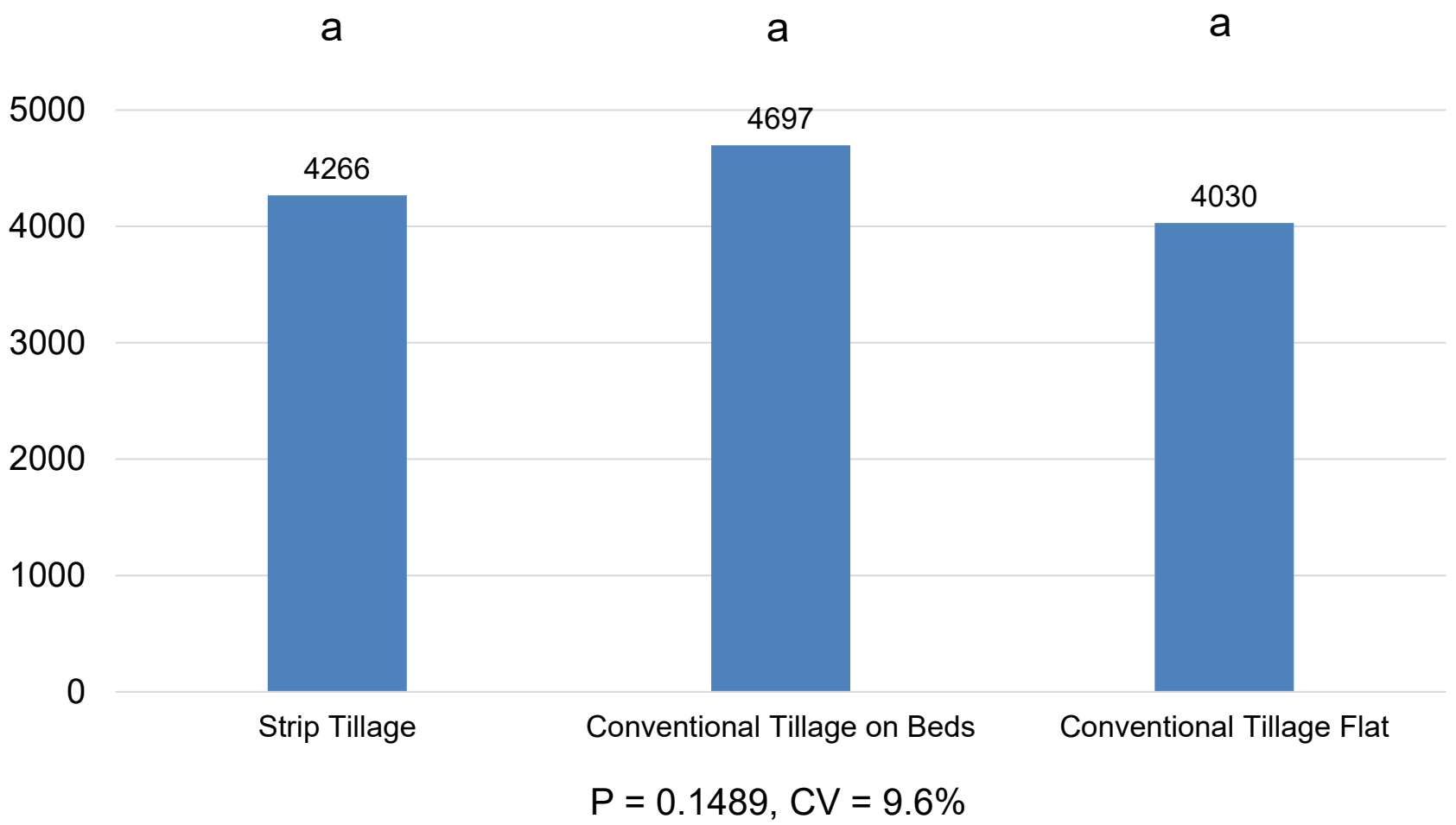


P = 0.2085, CV = 12.7%

Peanut Yield (pounds per acre)

Halifax County, Elizabeth and Ray Garner

East of 95



P = 0.1489, CV = 9.6%

Summary from 2024 and 2025

Although significant yield differences were not observed at most of the locations, when data were pooled over locations that included both years (2024 and 2025), yield was greater when peanuts were planted on beds compared with planting in strip tillage into wheat cover crop and crop stubble from the previous year or when planted conventionally but without beds

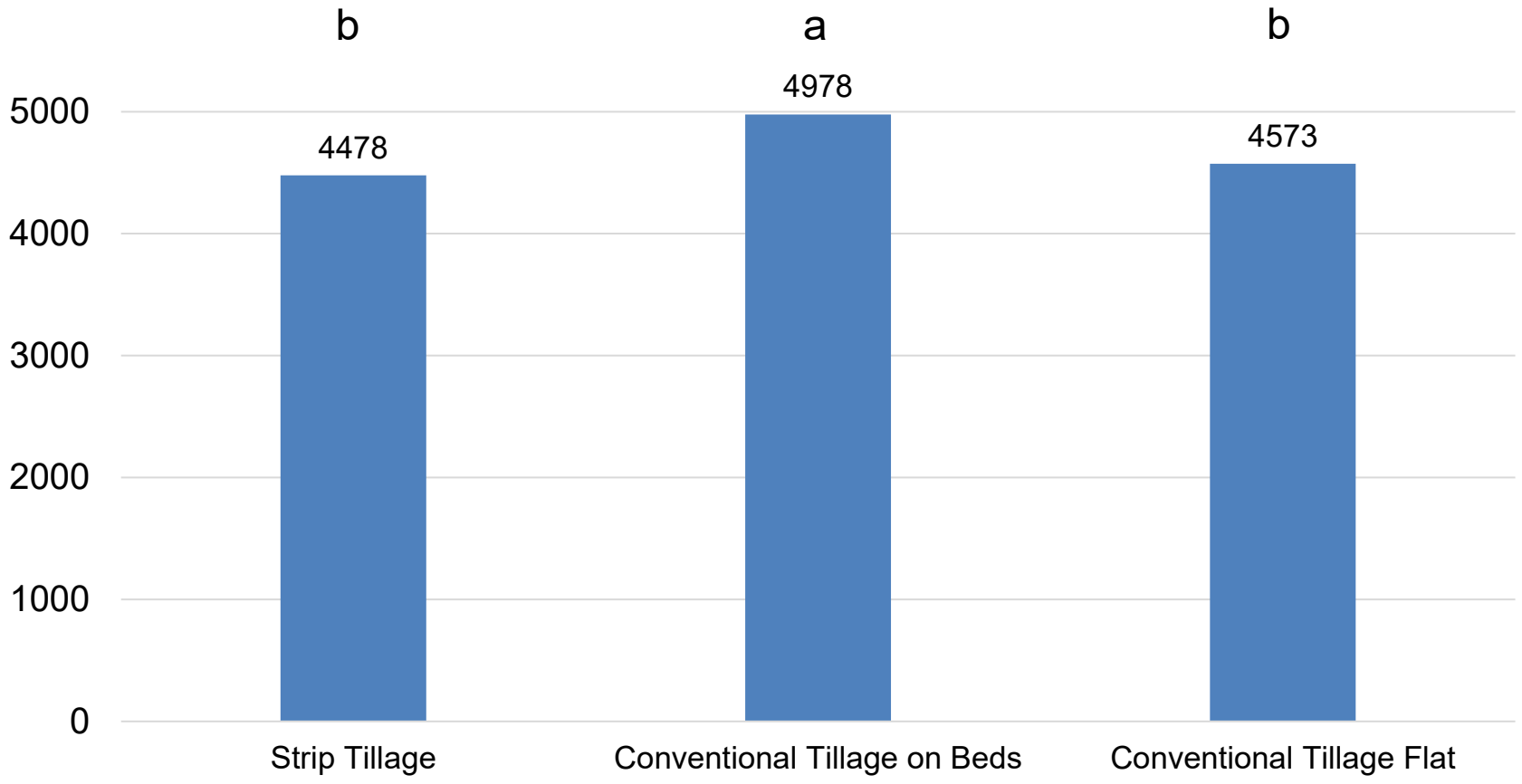
No difference in yield was observed when comparing strip tillage with conventional tillage when peanuts were planted into flat ground

Peanut Yield (pounds per acre)

Halifax County, Elizabeth and Ray Garner

2024 and 2025 Tillage Comparison

Average from 8 Trials



Tillage, P = 0.0002, CV = 10.3%

Location, P = <0.0001; Location × Tillage, P = 0.1085

Peanut Belt Research Station

Tillage and Cover Crops

Cooperator: Brian Stevens and Ivy Lanier

Planting date: May ?

Dig date: October ?

Harvest date: ?

May: Dry

June: Dry

July: Dry

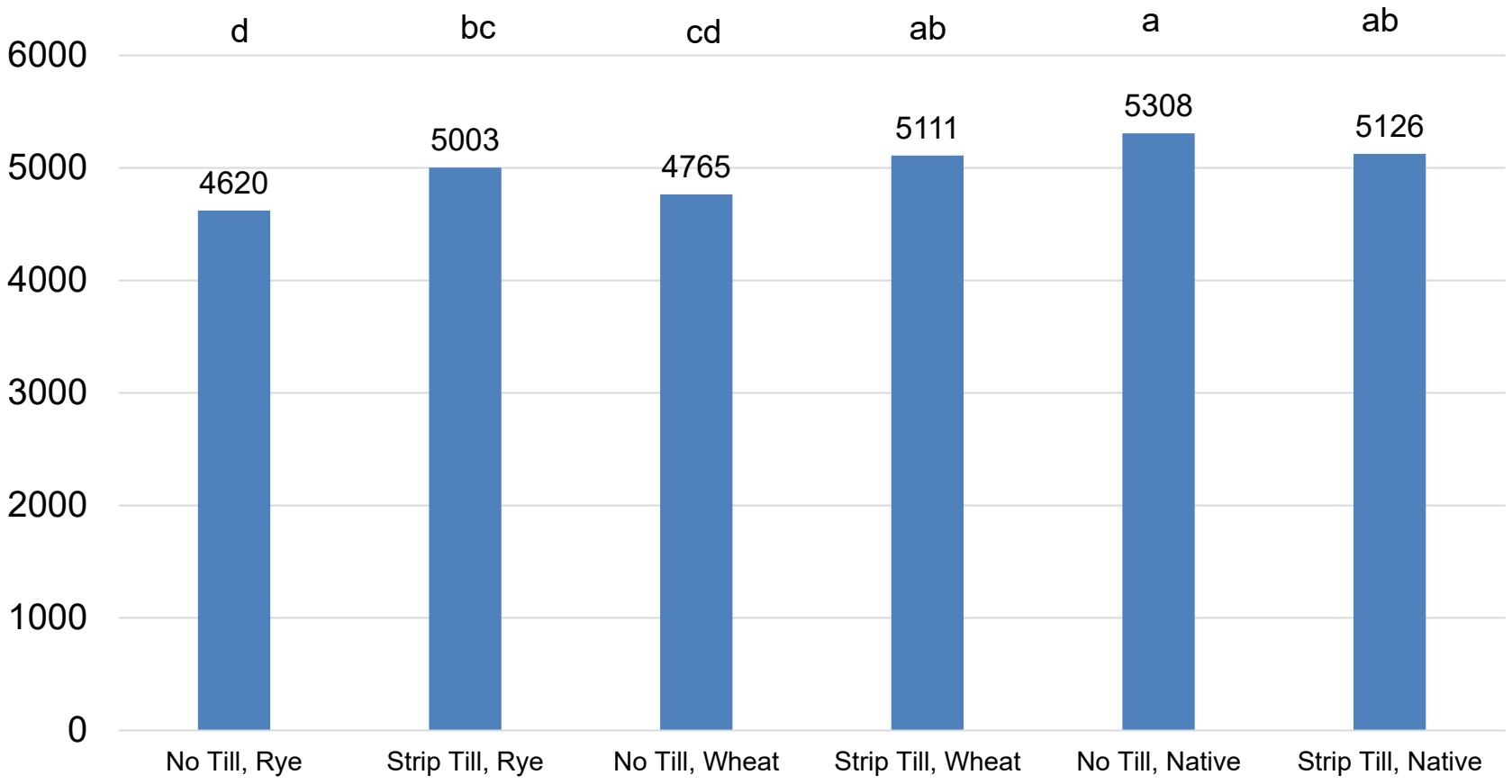
August: Moist

September: Dry

Peanut Yield (pounds per acre)

Peanut Belt Research Station

Tillage and Cover Crops



P = 0.0012, CV = 3.7%

Upper Coastal Plain Research Station

Tillage and Cover Crops

Cooperator: Michael Brake and Creig Deal

Planting date: May ?

Dig date: October ?

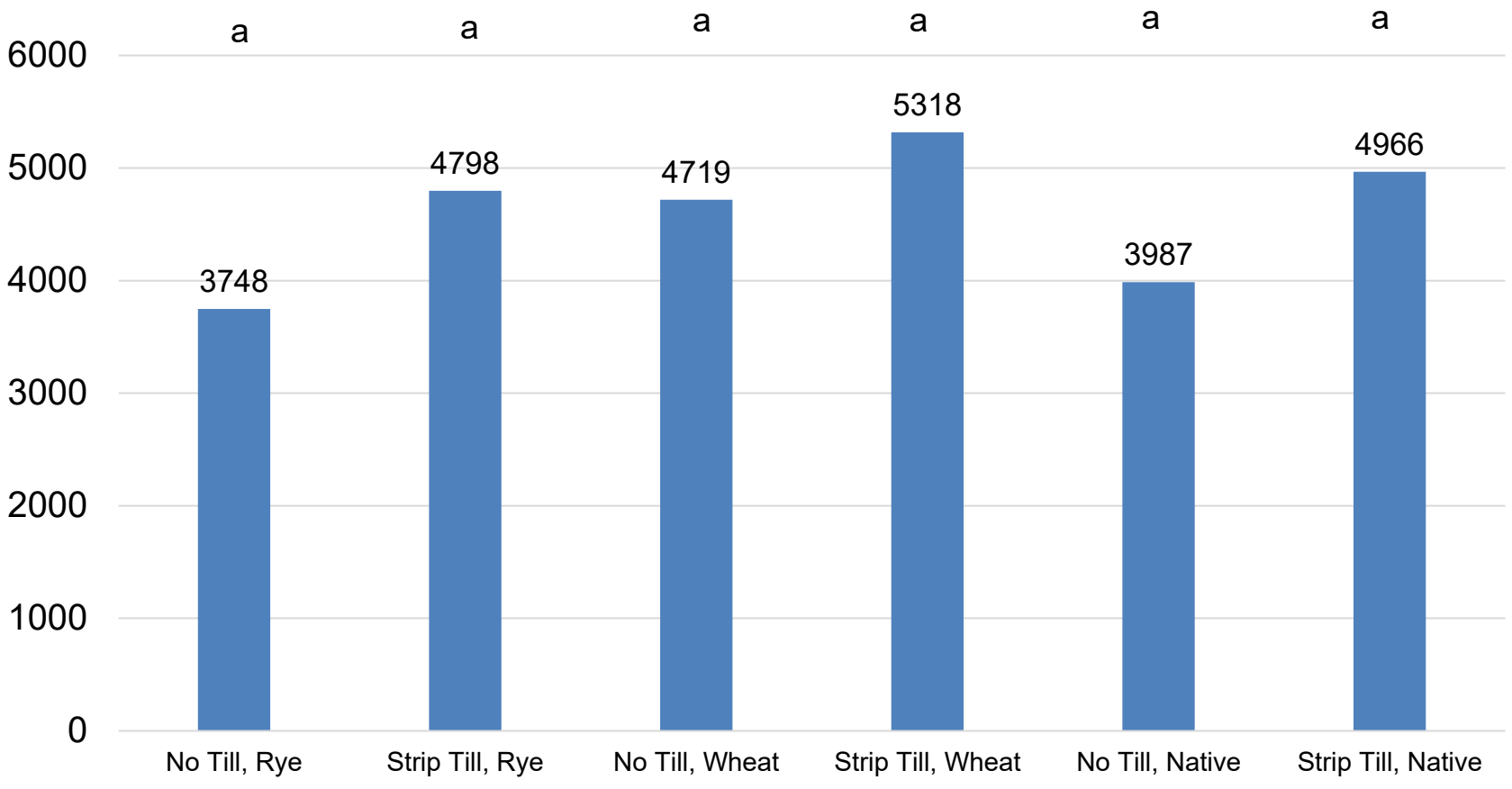
Harvest date: ?

Irrigated

Peanut Yield (pounds per acre)

Upper Coastal Plain Research Station

Tillage and Cover Crops



P = 0.2225, CV = 12.8%

Upper Coastal Plain Research Station

Oat Cover Crop

Cooperator: Michael Brake and Creig Deal

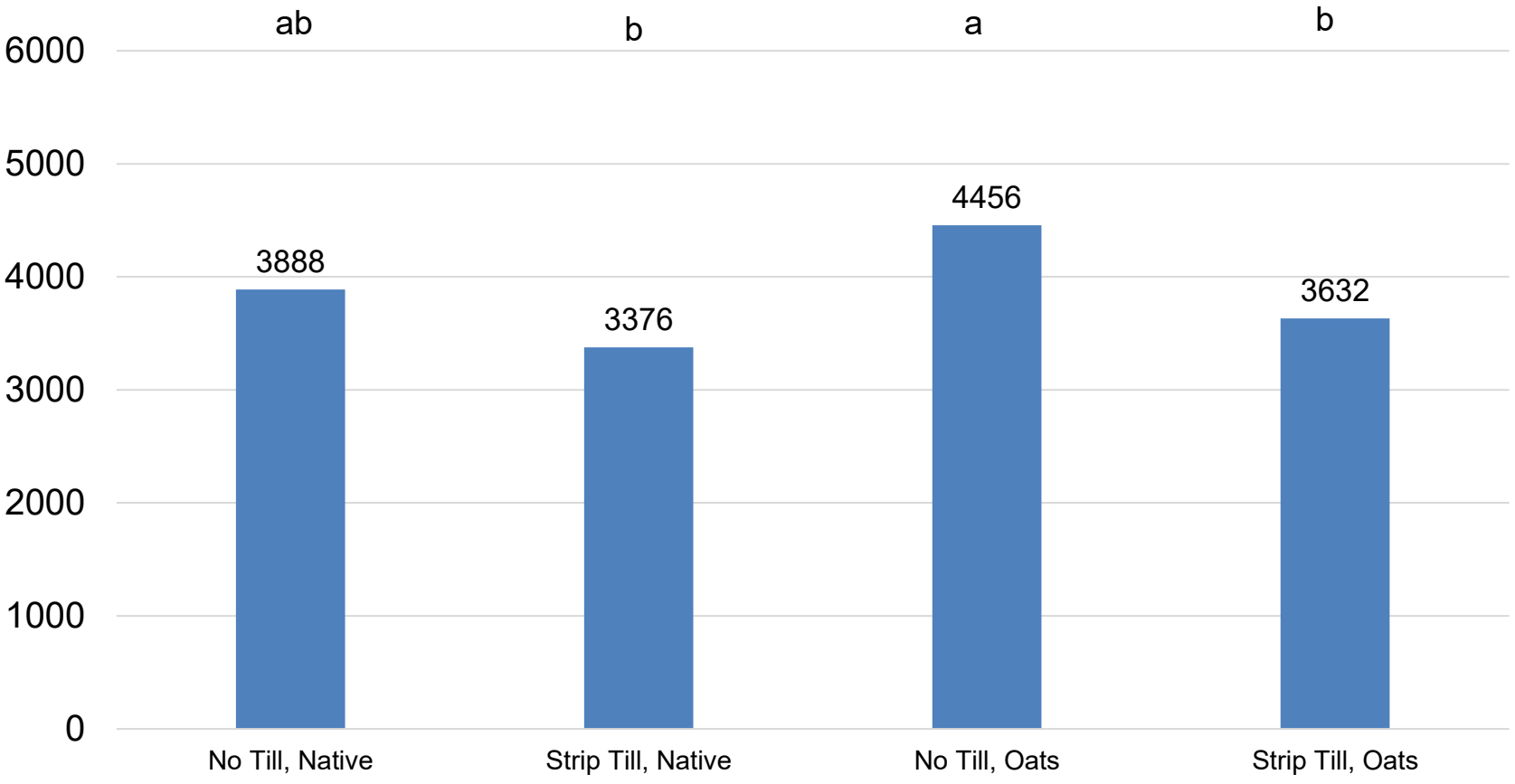
Planting date: May ?

Dig date: October ?

Harvest date: ?

Irrigated

Peanut Yield (pounds per acre)
Upper Coastal Plain Research Station
Oat Cover Crop



P = 0.0256, CV = 10.7%

Comparison of Brake and Valor SX

Gates County and Martin County

1) Dual Magnum

2) Dual Magnum plus Brake

3) Dual Magnum plus Valor SX

4) Dual Magnum plus Brake plus Valor SX

Weed populations (annual grass, Palmer amaranth, morningglory, and common ragweed) were similar following Dual Magnum plus Brake, Dual Magnum plus Valor SX, and Dual Magnum plus Brake plus Valor SX applied preemergence

Weed populations for these herbicide treatments were lower than with Dual Magnum alone in Gates County

In Martin County, no difference in weed emergence was observed early in the season for all four herbicide treatments

A postemergence herbicide application was made across all plots three to four weeks after peanuts emerged in both counties, and there was no difference in weed populations among treatments for the remainder of the season

No appreciable injury was noted early in the season from any of the herbicide treatments