



Hickory and Oak Growth Over 10 Years in Response to Initial Fertilization

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Moderate ground cover density of 50-60% is ideal for reforestation, but how can we achieve this?

Will reduced seeding rates reduce herbaceous cover proportionately?

Should we reduce the fertilization rate as well?

Which benefits from the fertilization, the trees or the ground cover?

Treatments hydroseeded in May 2006

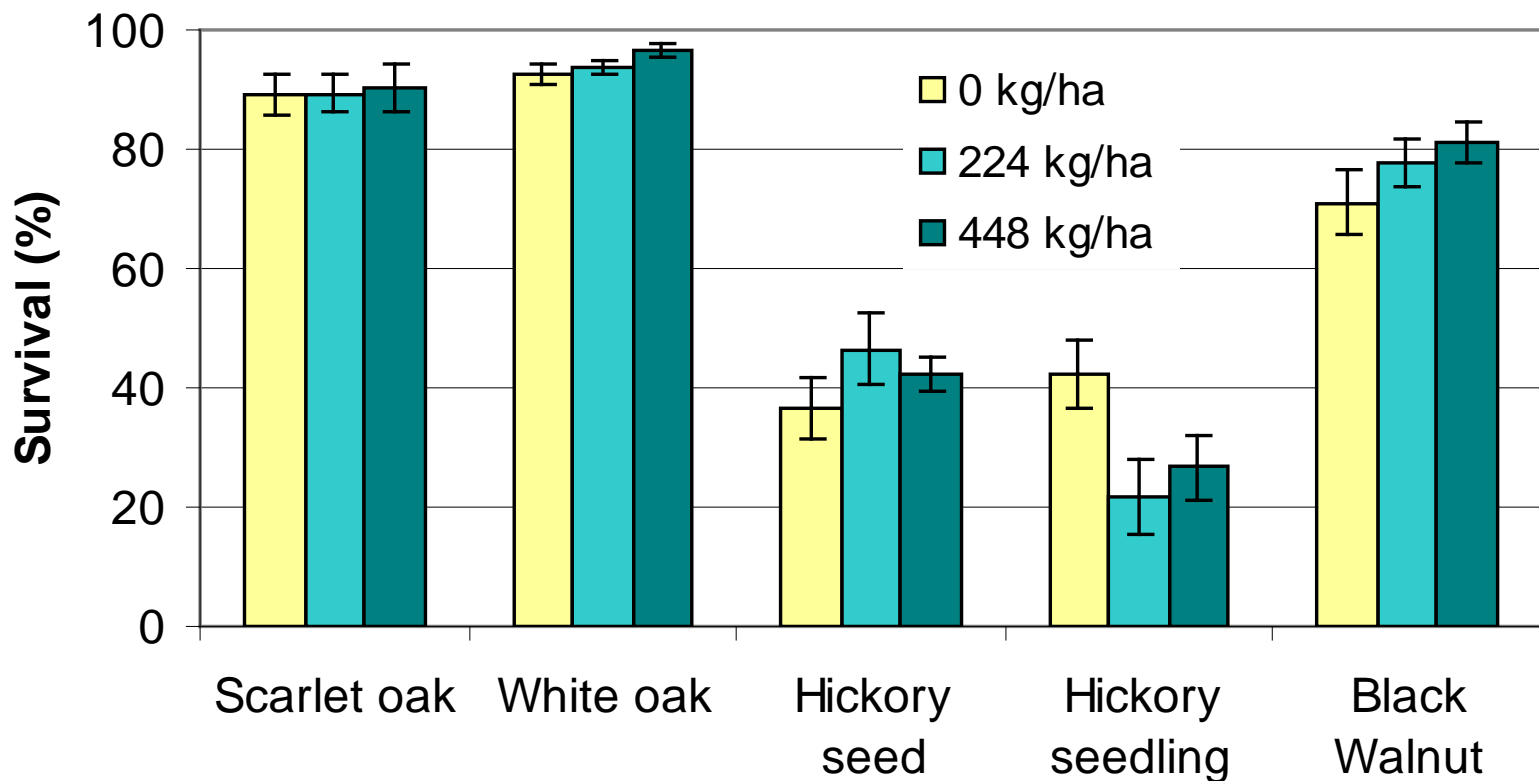
- 3 x 3 factorial with 3 replicates
- Seeded with native warm-season grasses and legumes at:
 - 59.4 kg/ha
 - 29.7 kg/ha
 - 5.9 kg/ha
- Fertilized with 10:20:20 at:
 - 448 kg/ha
 - 224 kg/ha
 - 0 kg/ha





Planted:
white oak (*Quercus alba*)
scarlet oak (*Q. coccinea*)
black walnut (*Juglans nigra*)
mockernut hickory
(*Carya alba*)
mockernut hickory seed

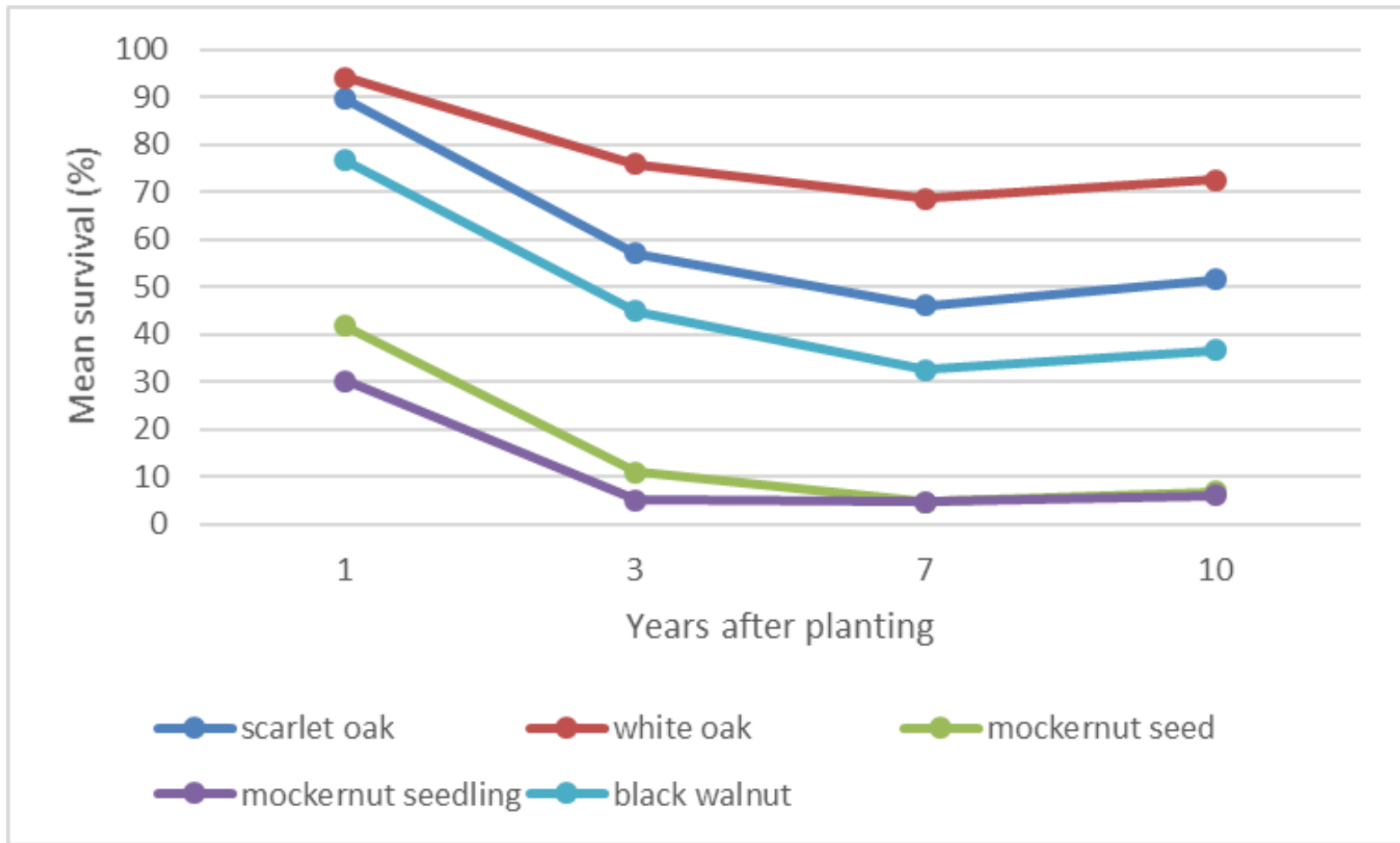
**Randomized on a 2.4m x
2.4m spacing**



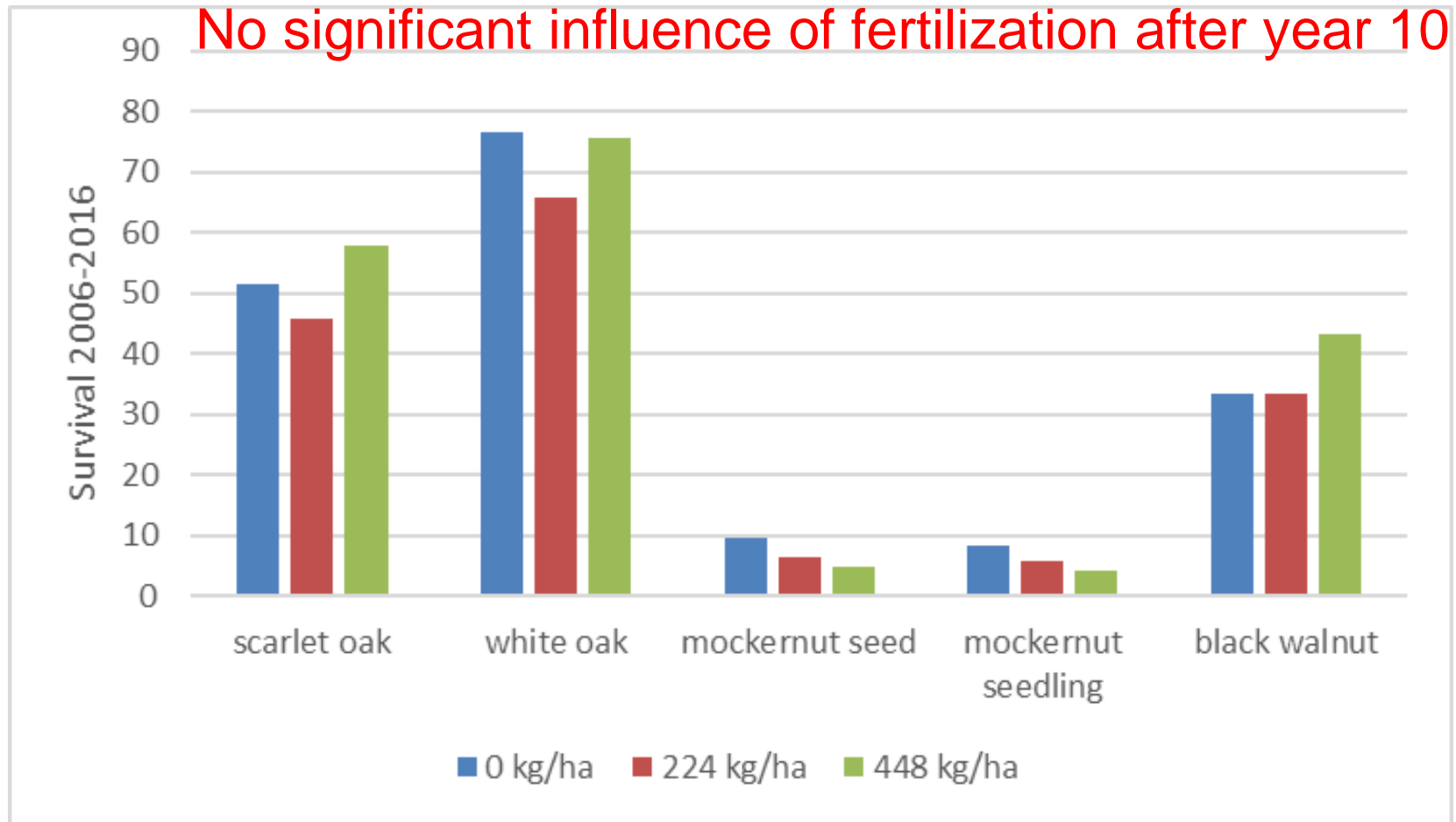
Mean ground cover was 5 - 30%, likely too low for substantial competitive effects.

Fertilization had little effect on seedling survival.

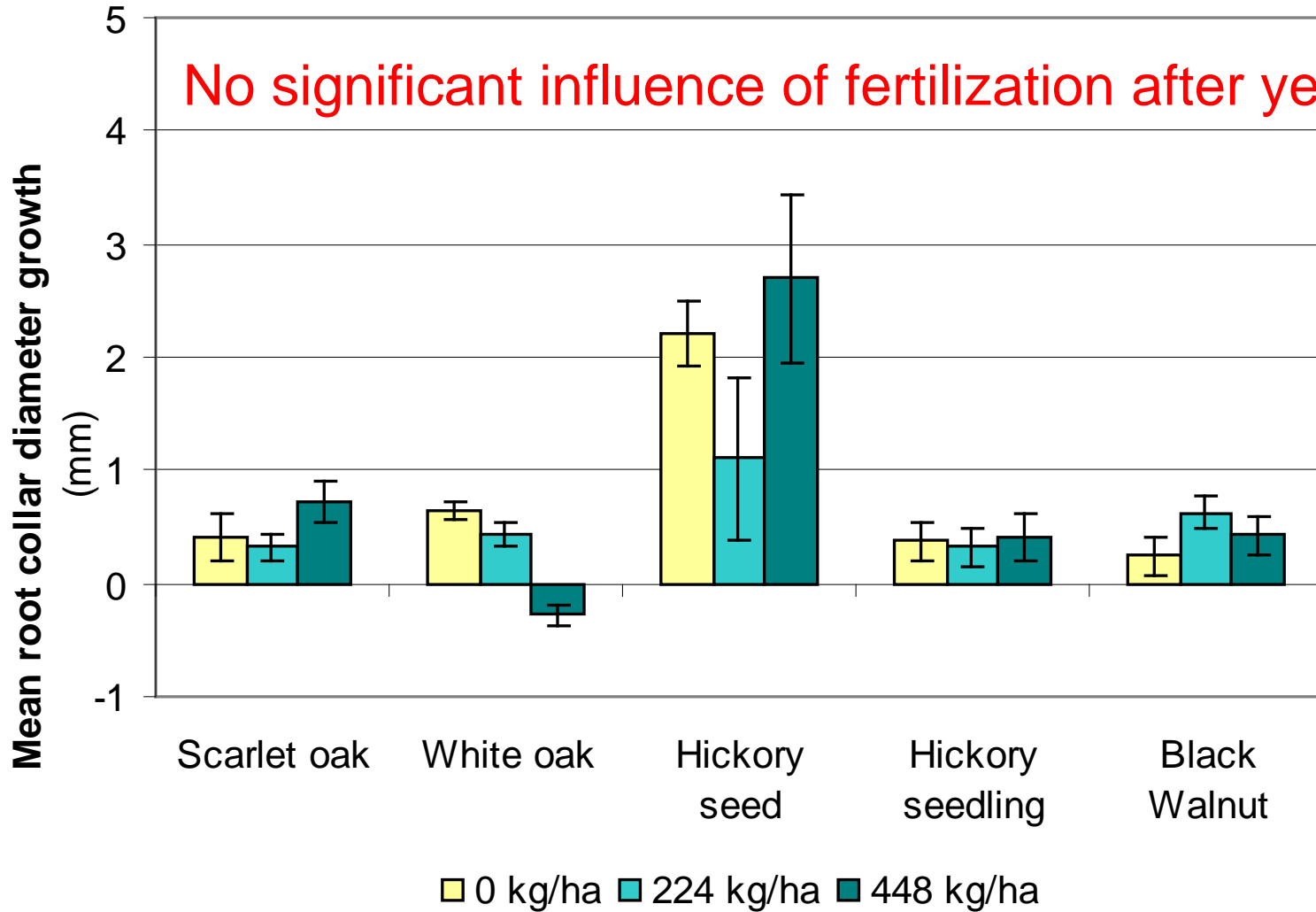
Survival



10 year survival

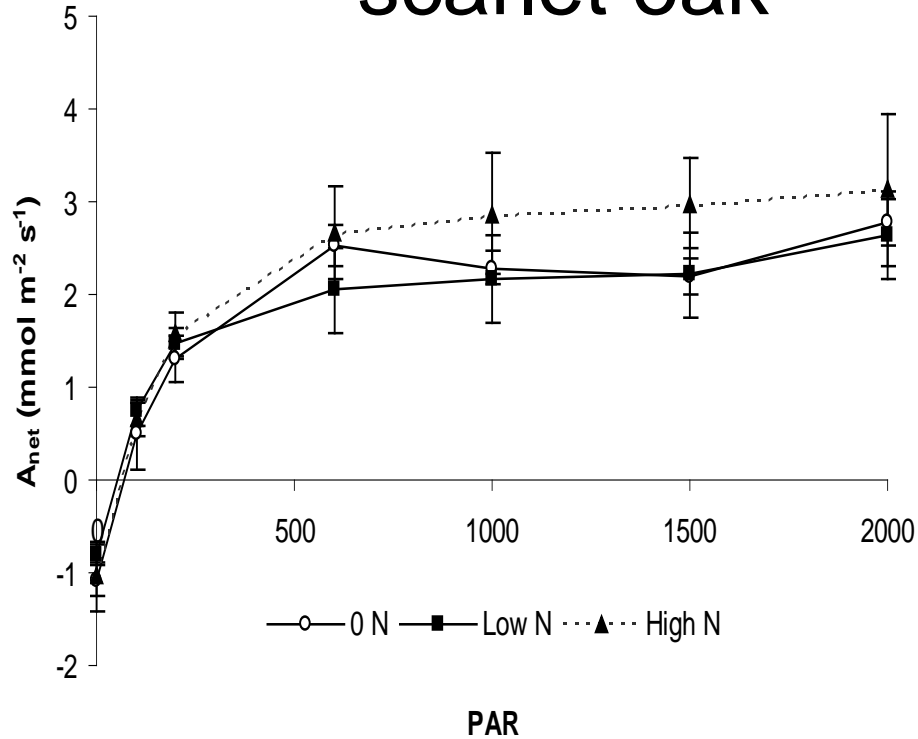


No significant influence of fertilization after year 1

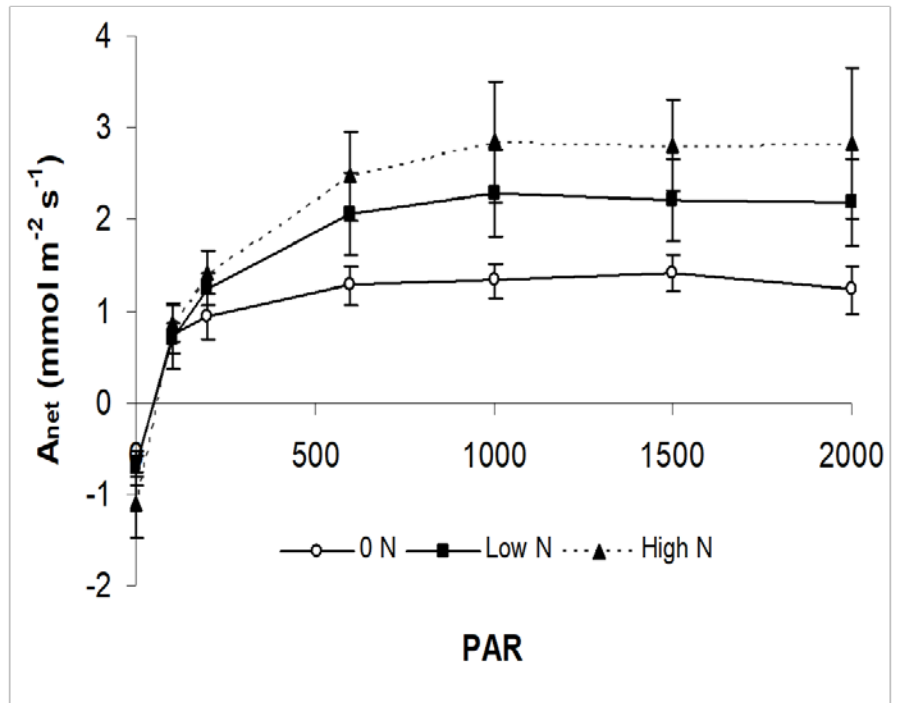


Light response curves

scarlet oak

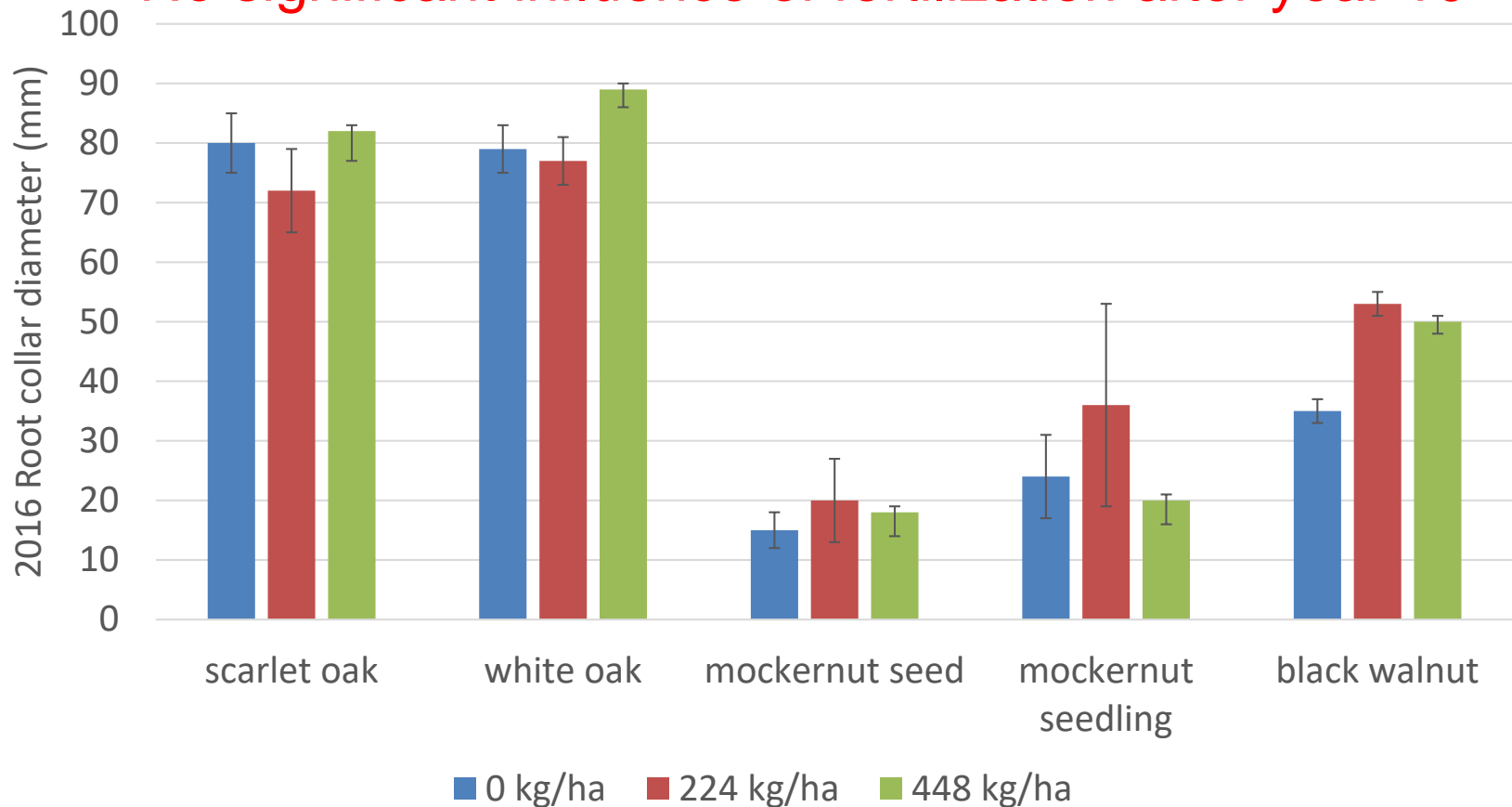


hickory



2016 RCD

No significant influence of fertilization after year 10





2006



2007



2012



2013



2016

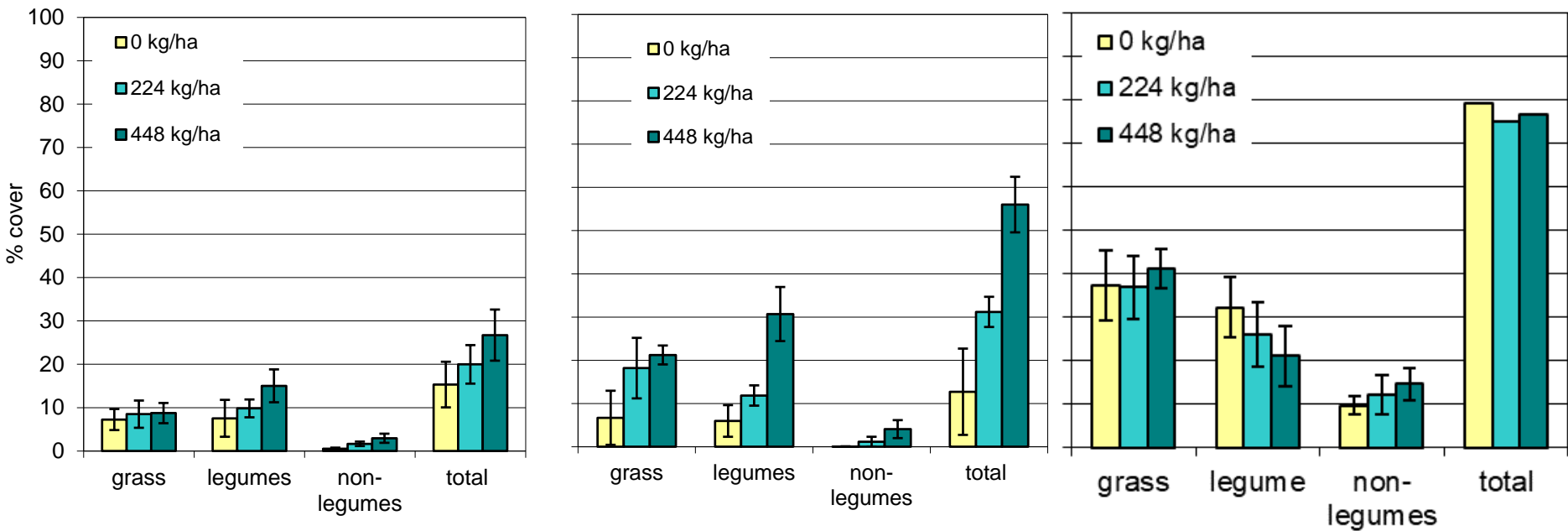


Herbaceous cover

2007

2008

2013





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