

Fertility Management of Irrigated Sunflowers

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Fertility Management

A photograph of a sunflower field under a clear blue sky. The sunflowers are in various stages of bloom, with bright yellow petals and dark brown centers. The leaves are large and green. The image is used as a background for the slide.

- **2011 Site Location**
 - Prospect Valley, CO
- **Soil Type**
 - Clay Loam
- **Irrigation management**
 - Full irrigation – as needed
 - Furrow Irrigation
- **Fertilizer Management**
 - Pre-plant
 - Combination of fertigation levels

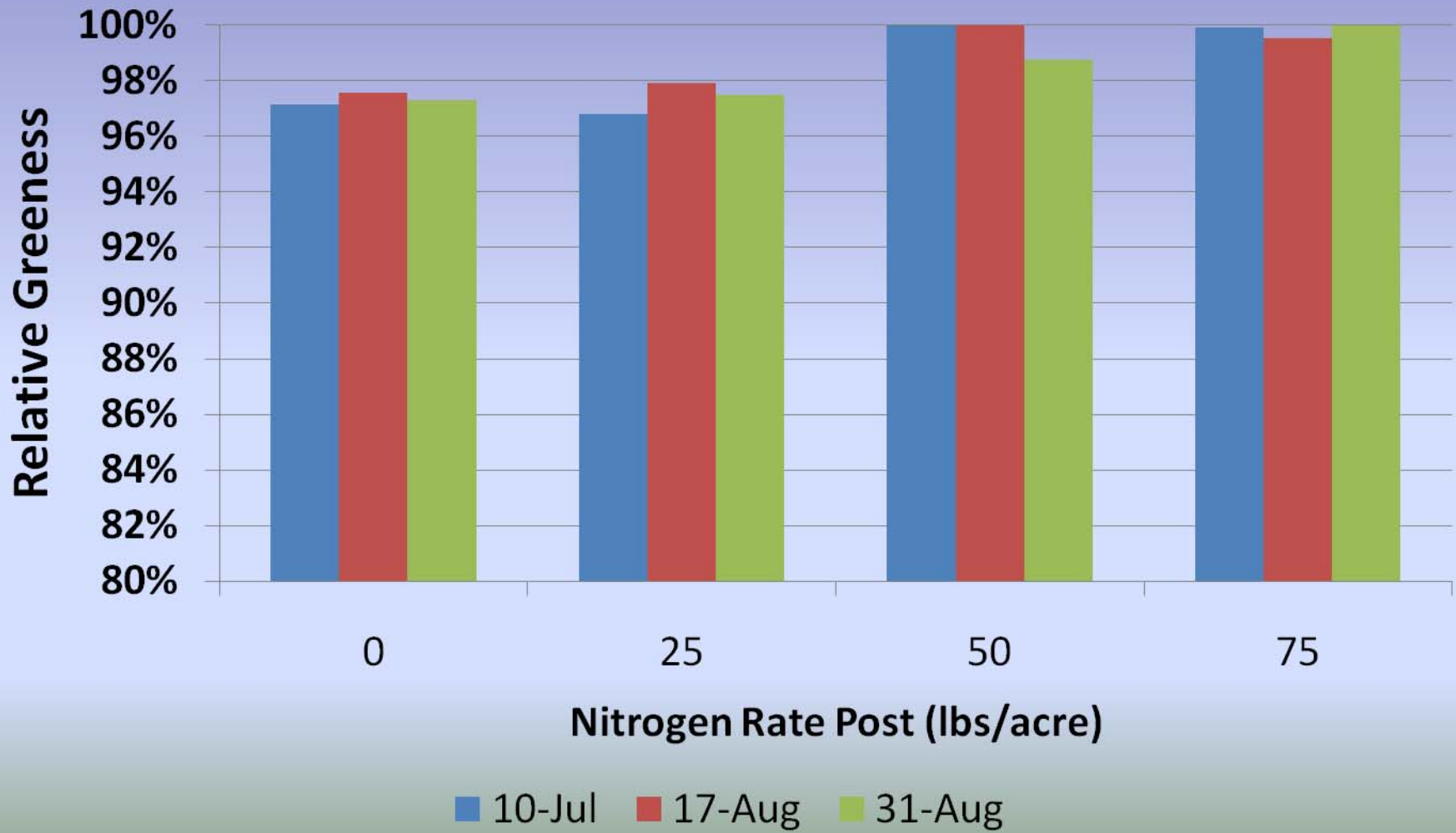
Fertility Management

- **Measurements**
 - Grain Yield
 - Soil Nitrogen
 - Chlorophyll Readings (SPAD)
 - Measurement of green pigment
 - Relative greenness of crop
 - Indication of nitrogen stress
 - Used in corn production



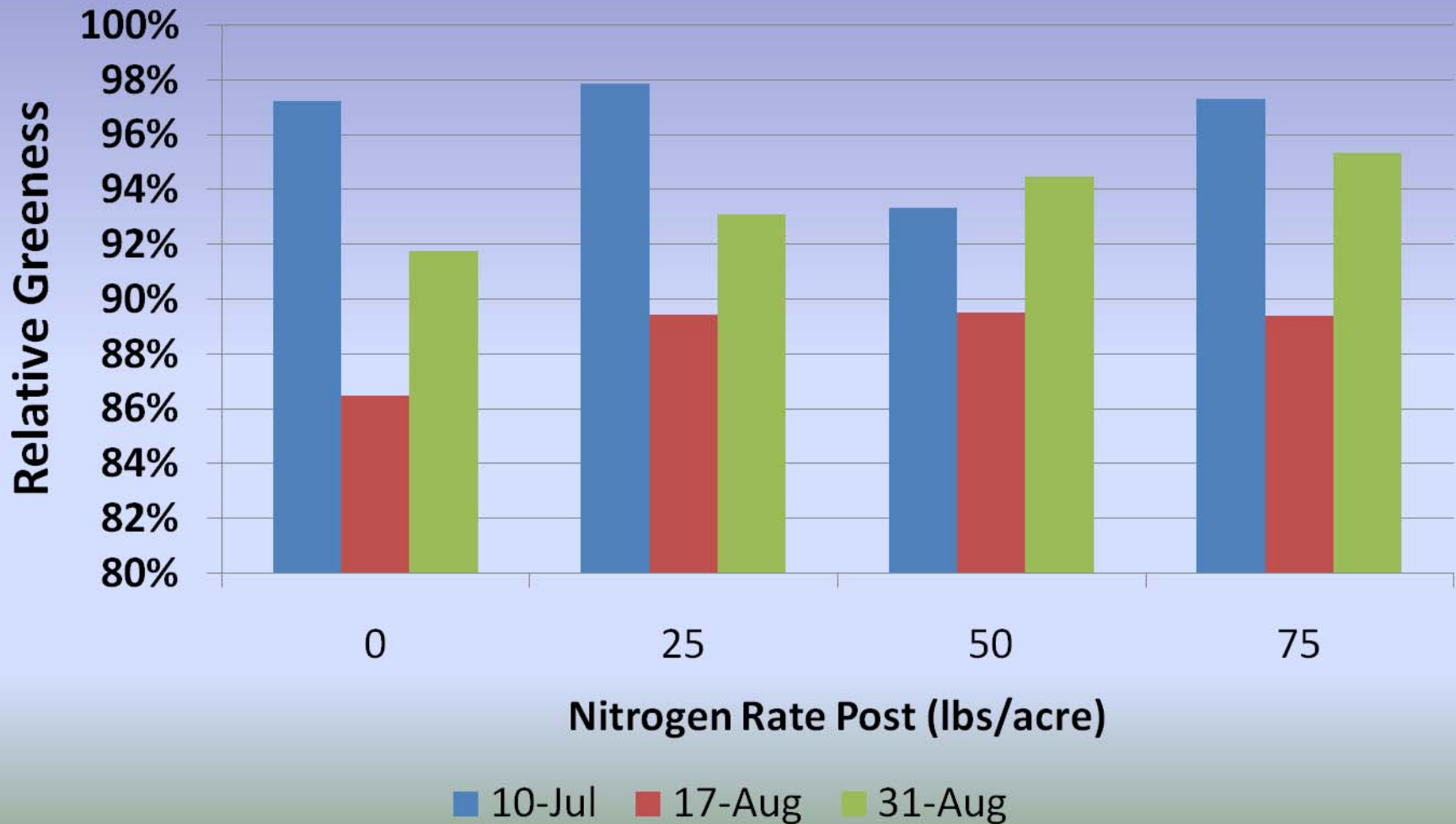
Chlorophyll Response to N

75 lbs N Pre-plant

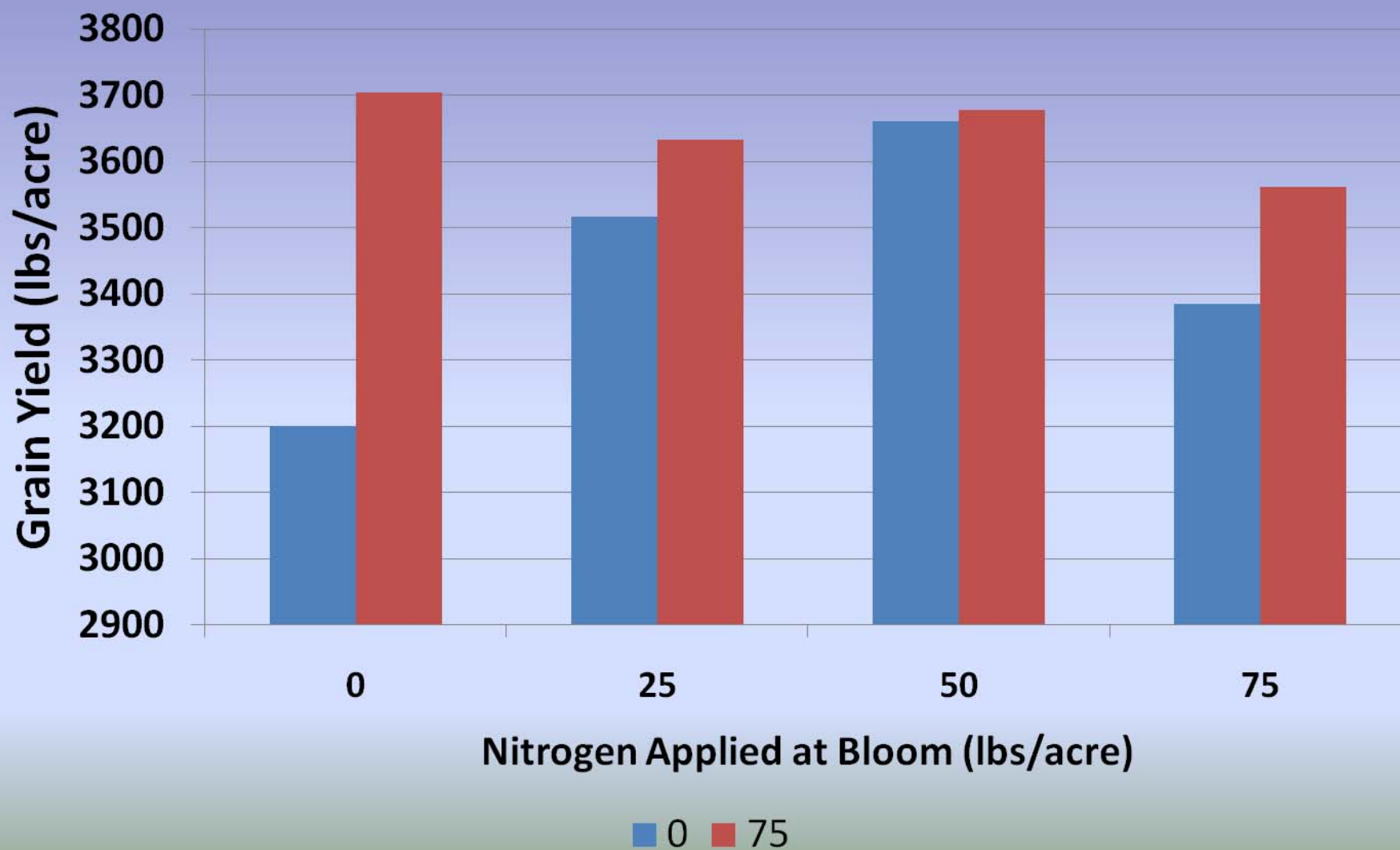


Chlorophyll Response to N

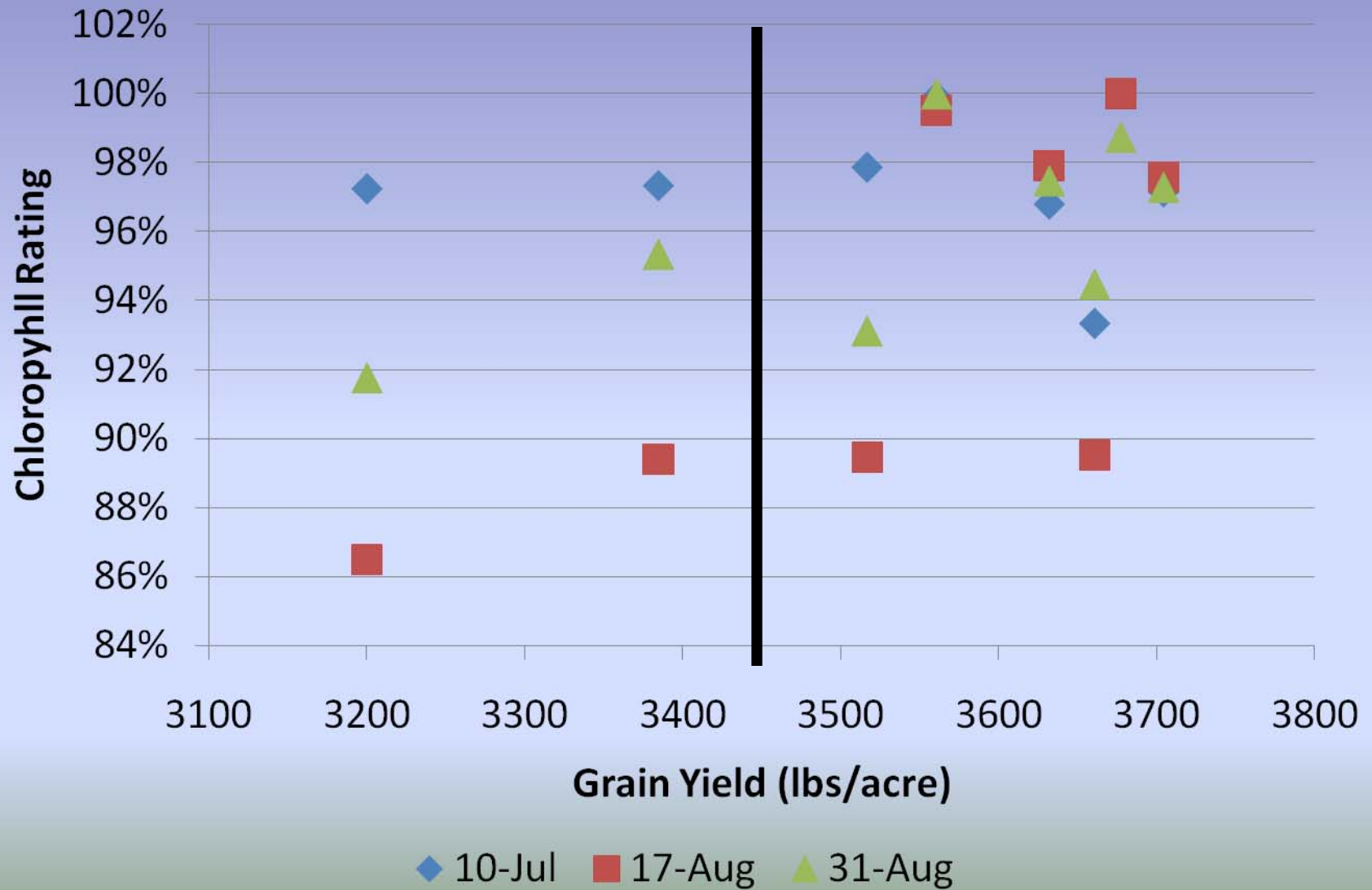
0 lbs N Pre-plant



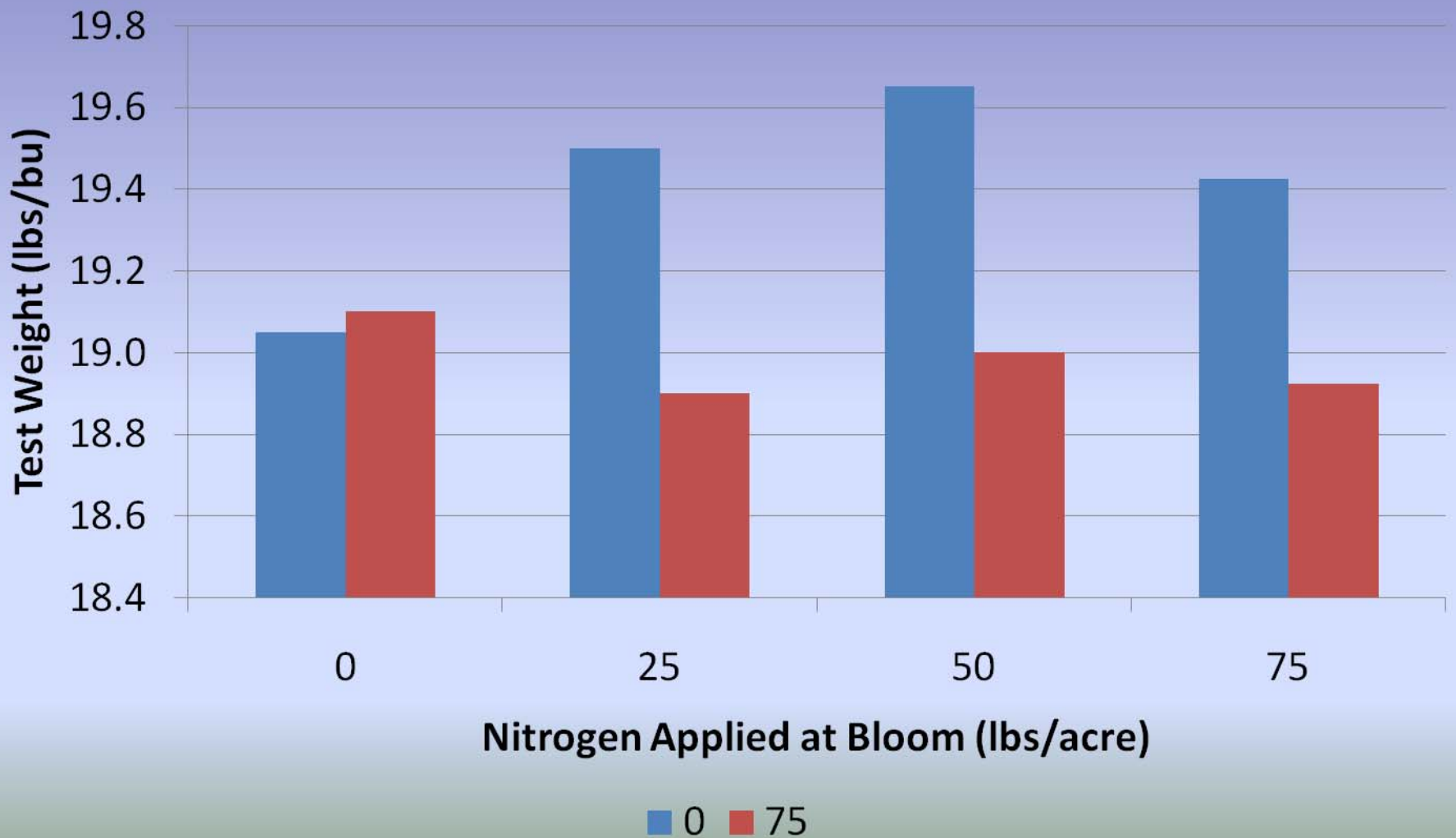
Confection Sunflower Yields



Chlorophyll vs Grain Yield

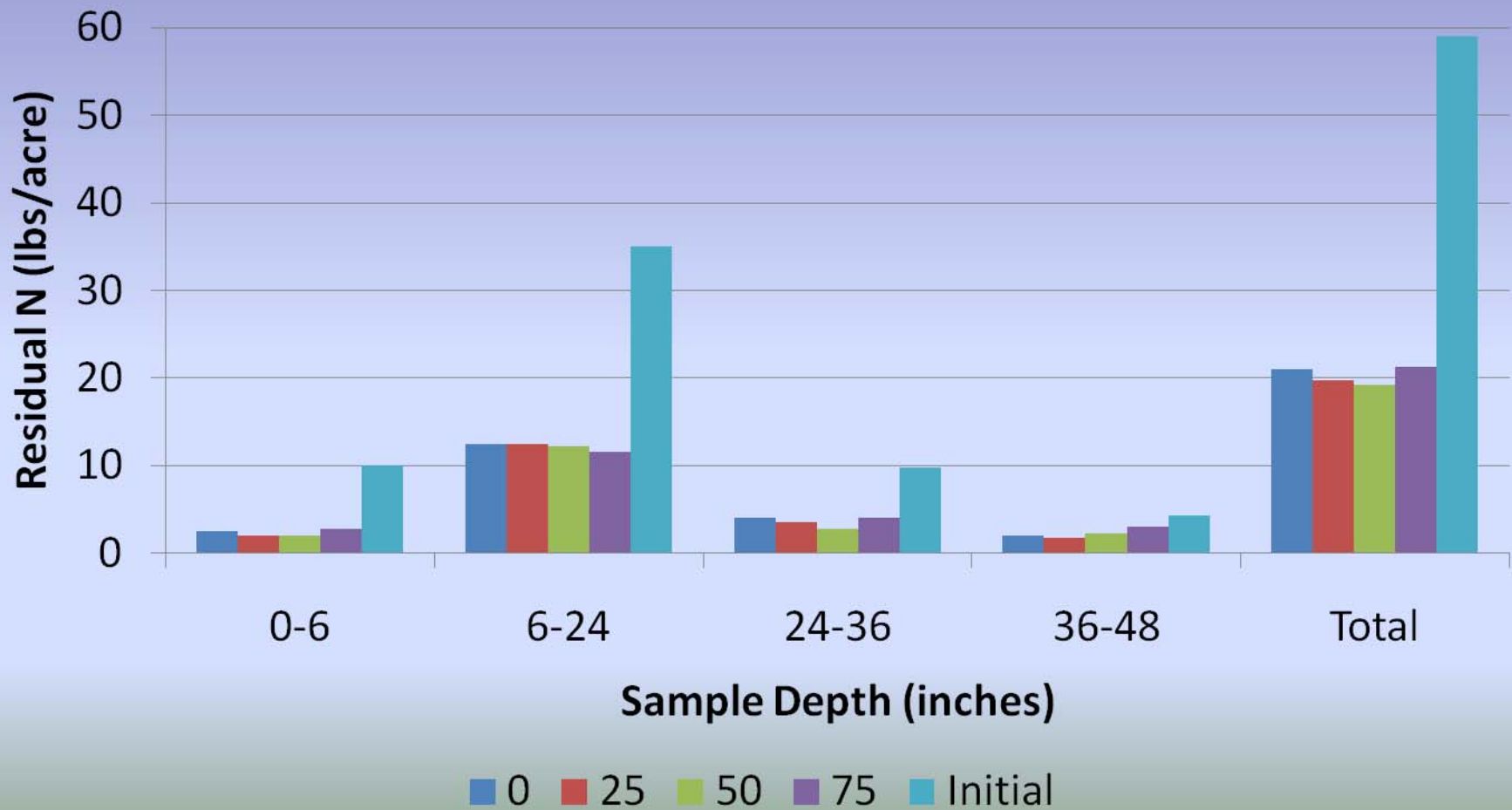


Confection Sunflower Test Weight



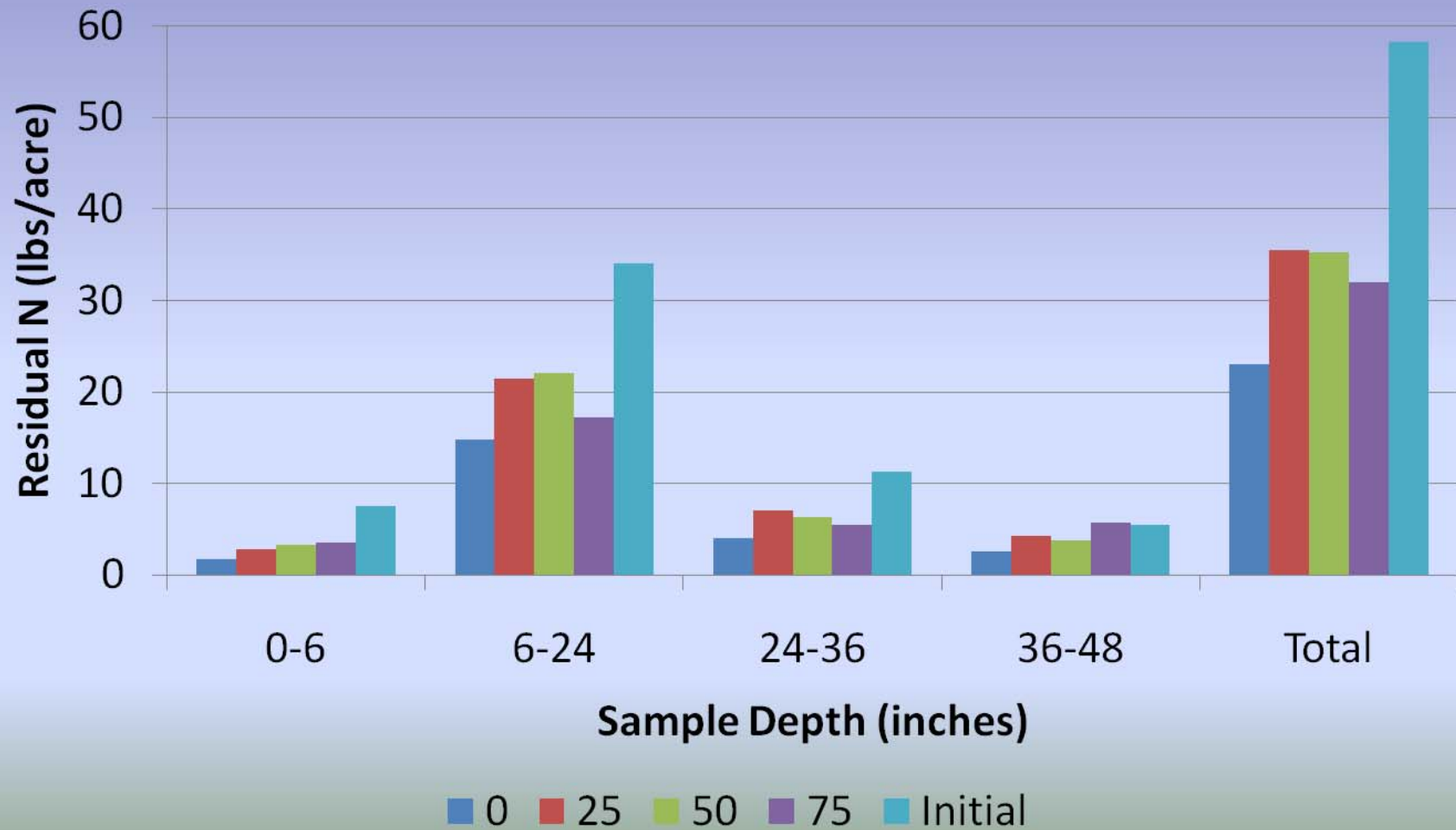
Residual Nitrogen

0 lbs Pre-plant



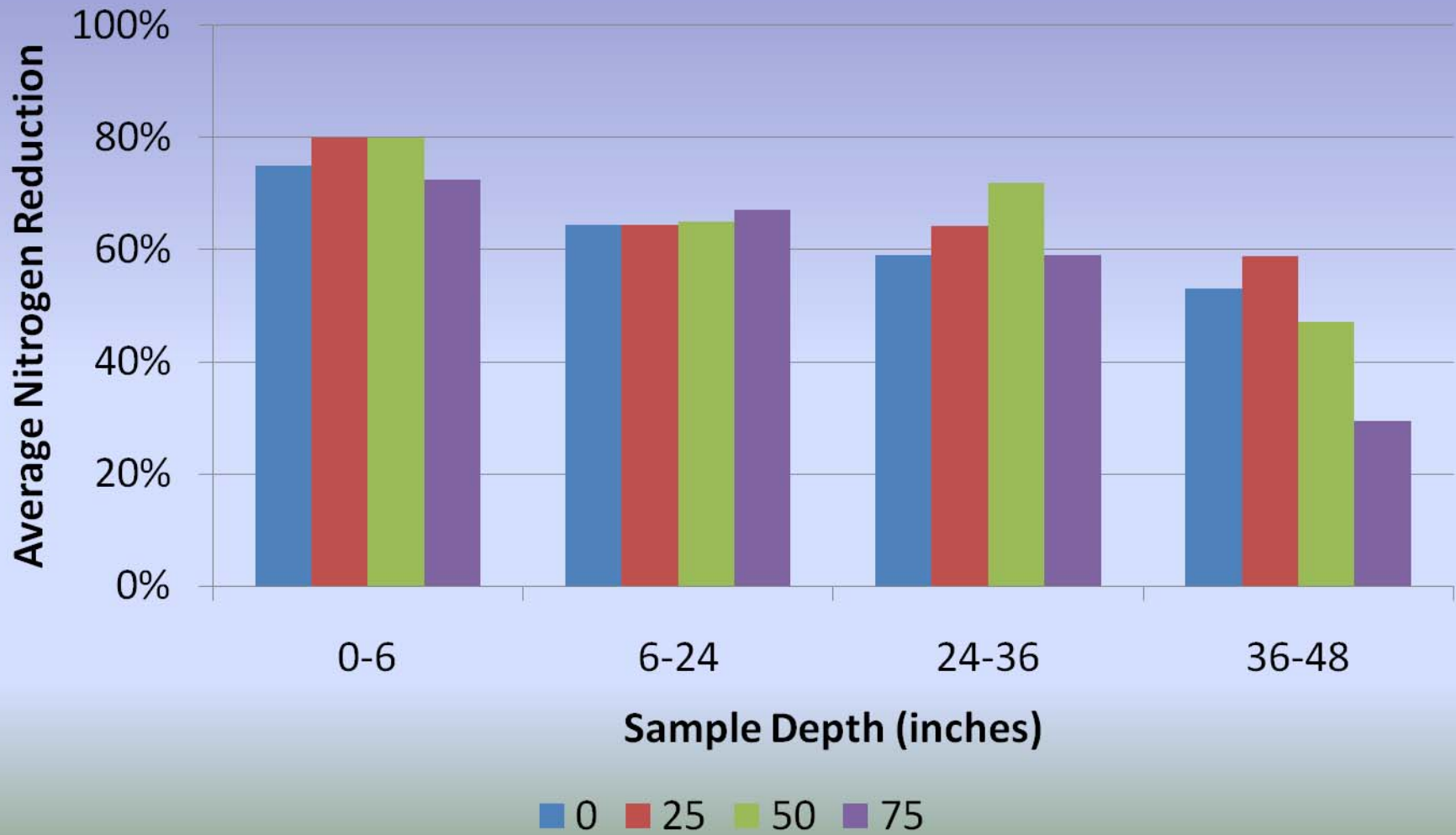
Residual Nitrogen

75 lbs Pre-plant



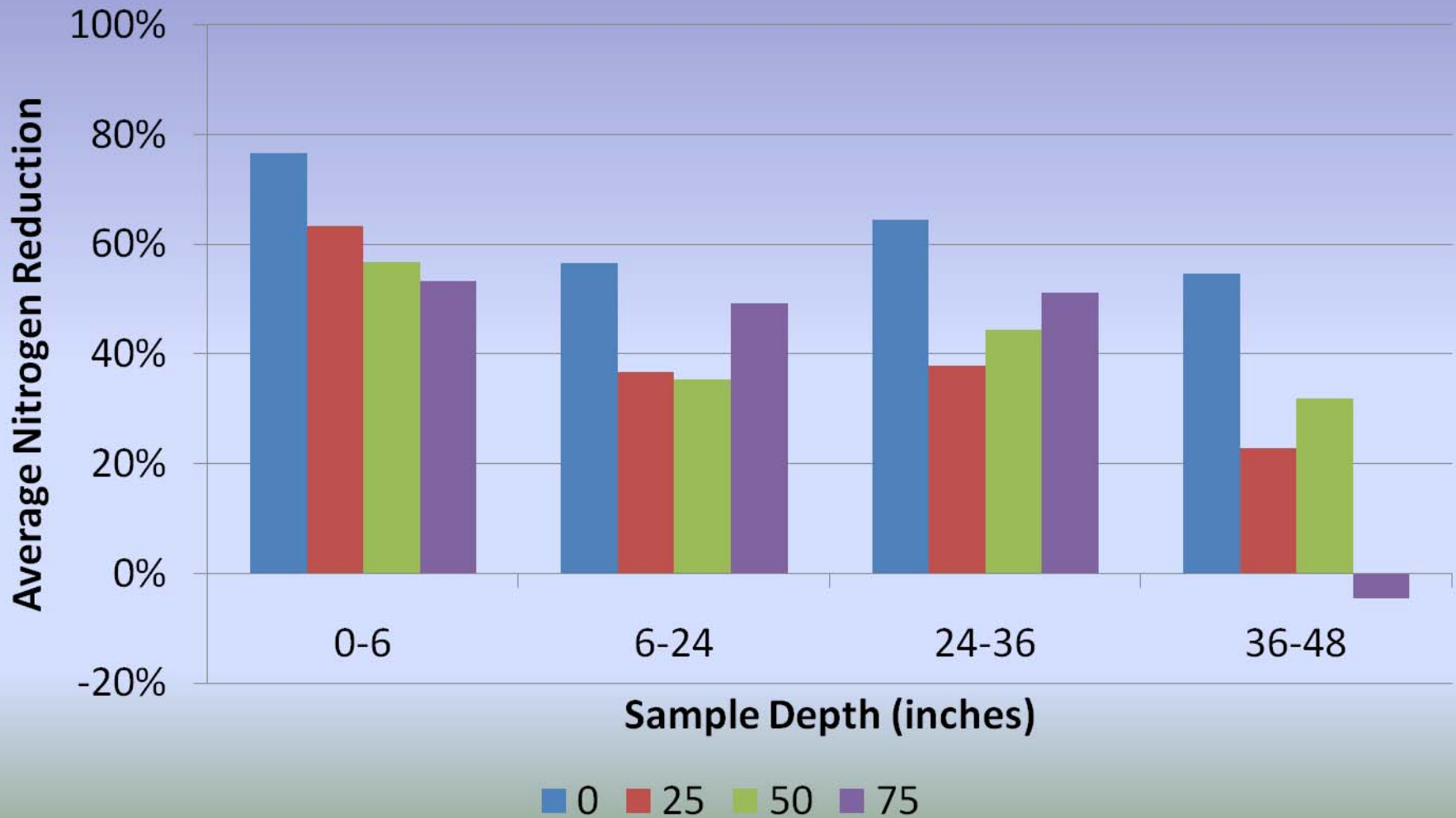
Nitrogen Removal

0 lbs Pre-plant

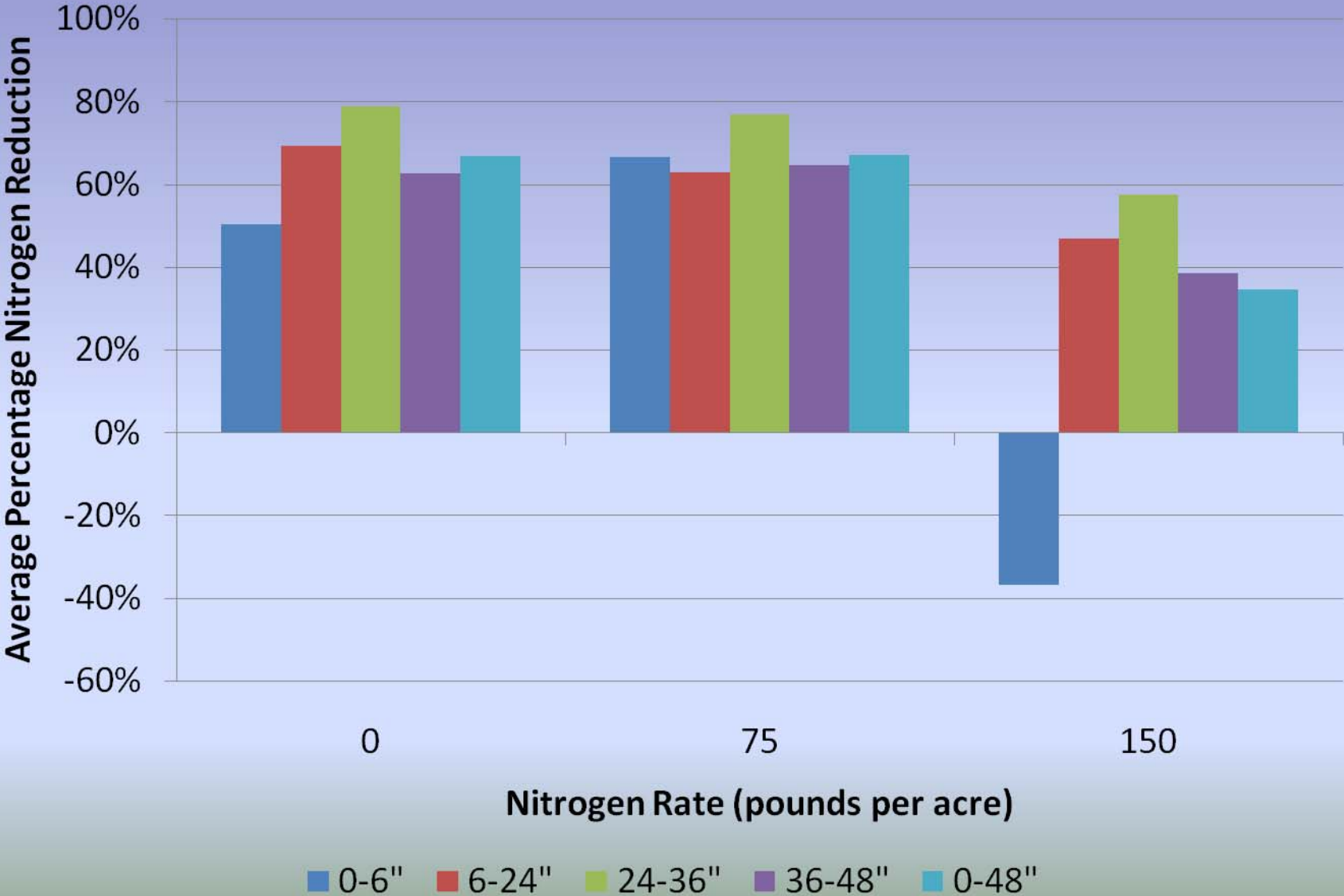


Nitrogen Removal

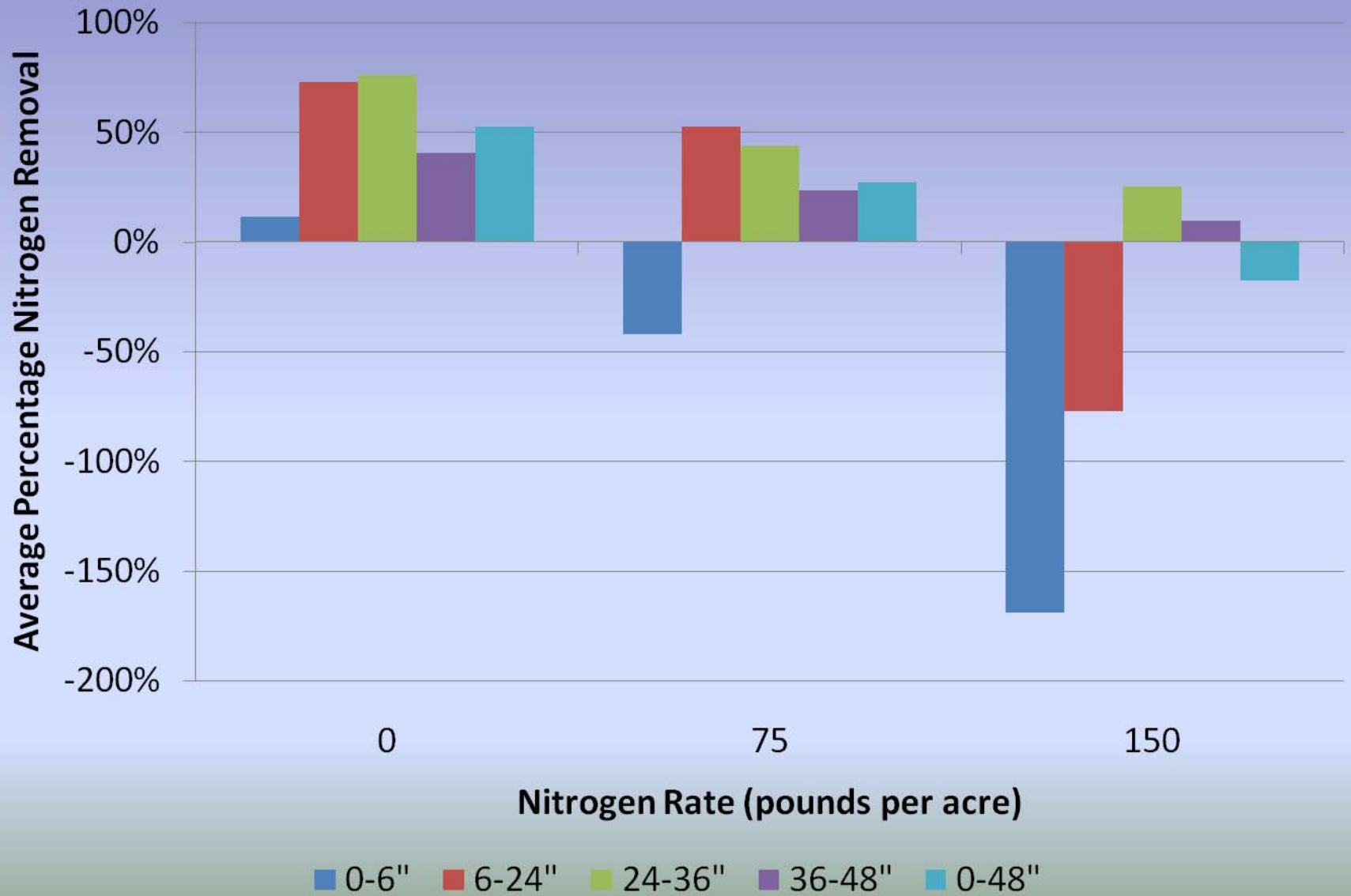
75 lbs Pre-plant



Nitrogen Reduction By Sunflowers 2006 and 2009



Nitrogen Removal By Sunflowers 2010



Conclusion

- **Application of 75 lbs pre-plant N was better than no pre-plant N.**
- **An application of 25 to 50 lbs/acre N at bloom increased yields similar to that of 75 lbs N pre-plant.**
- **Sunflowers reduced residual N by 50% or more with proper N rates.**
- **Are nitrogen recommendations high for irrigated sunflowers?**
- **Can Chlorophyll Ratings be utilized in fertility management?**