Soybean Response to Liming

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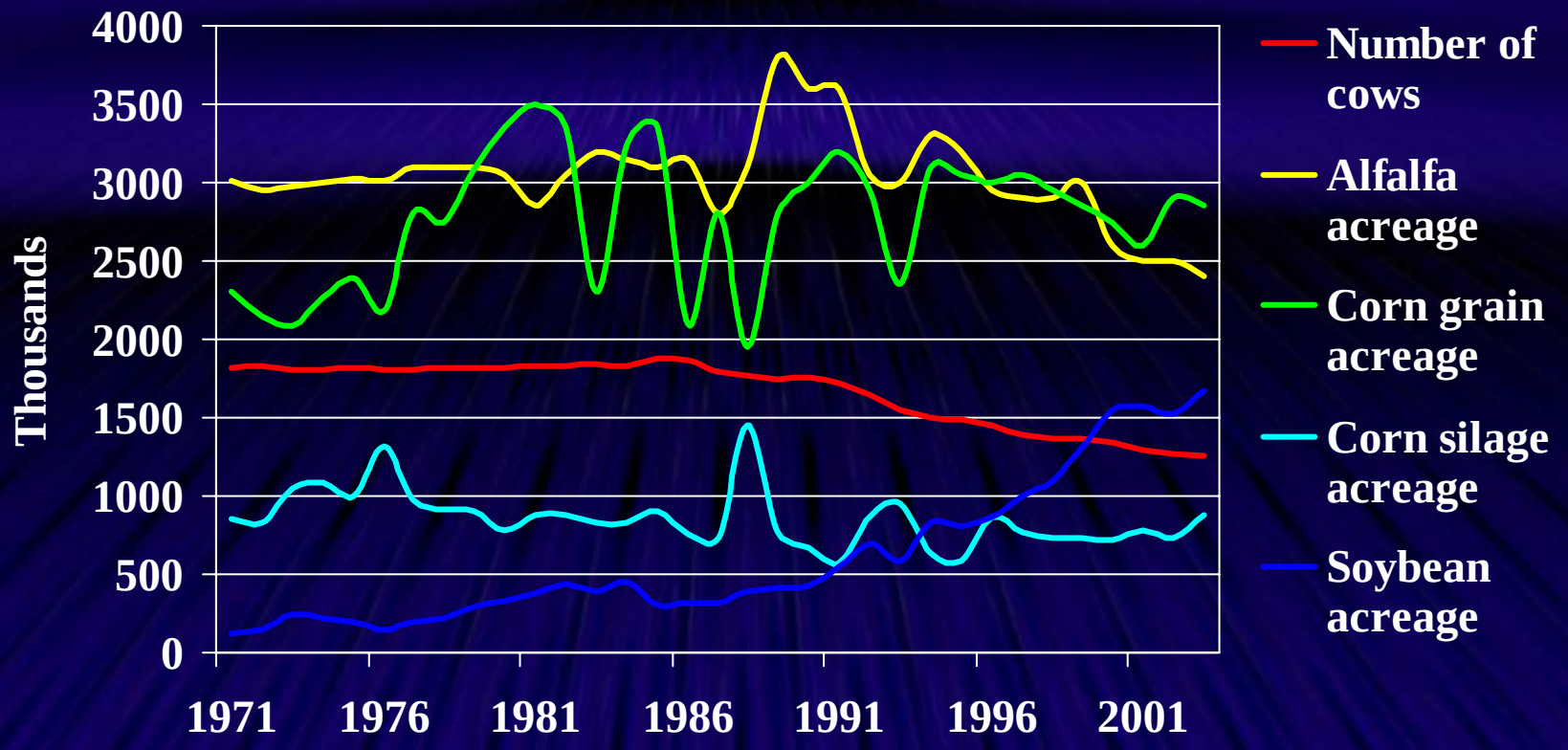
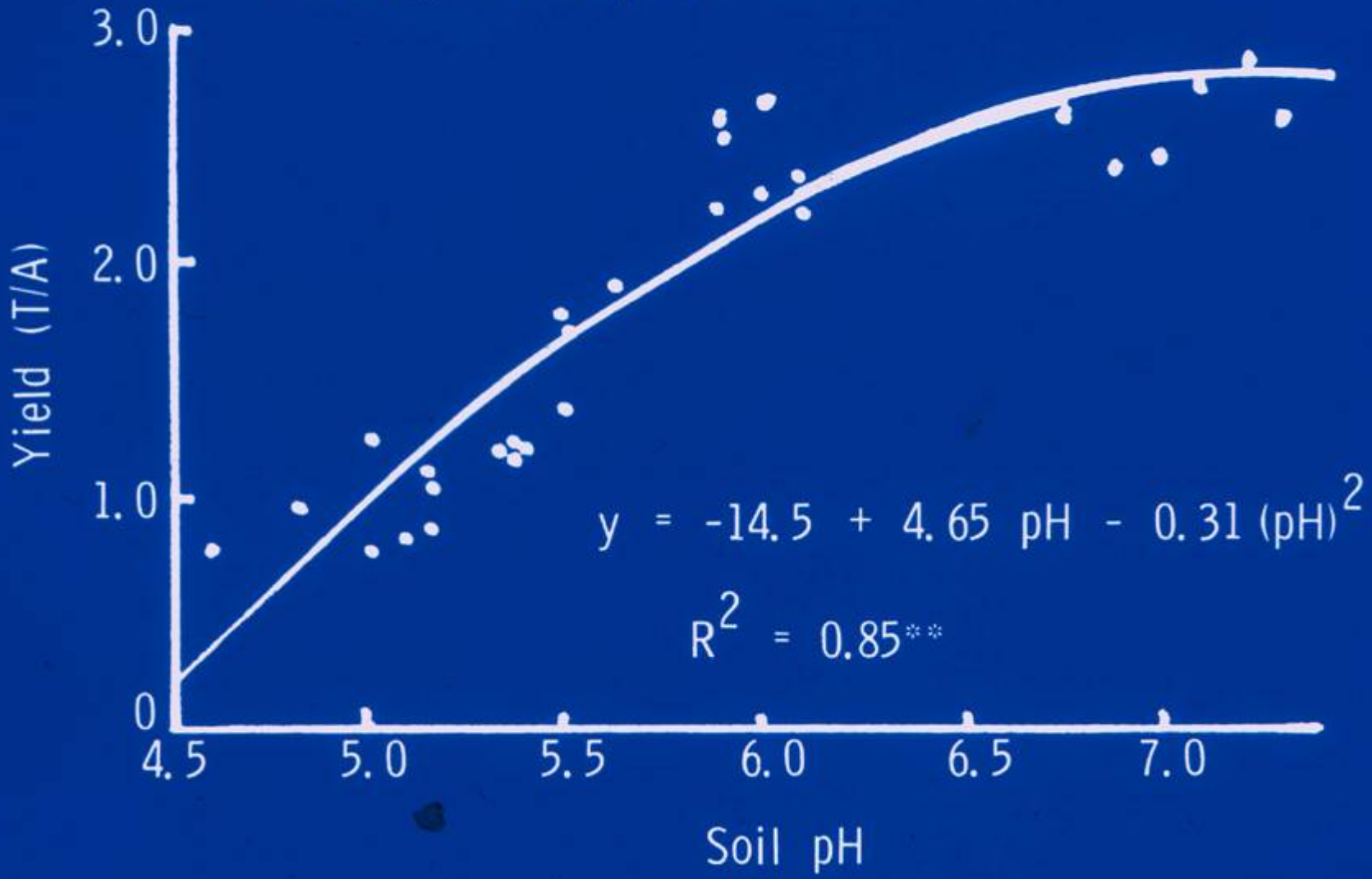
Long-term production trends



One year old stand

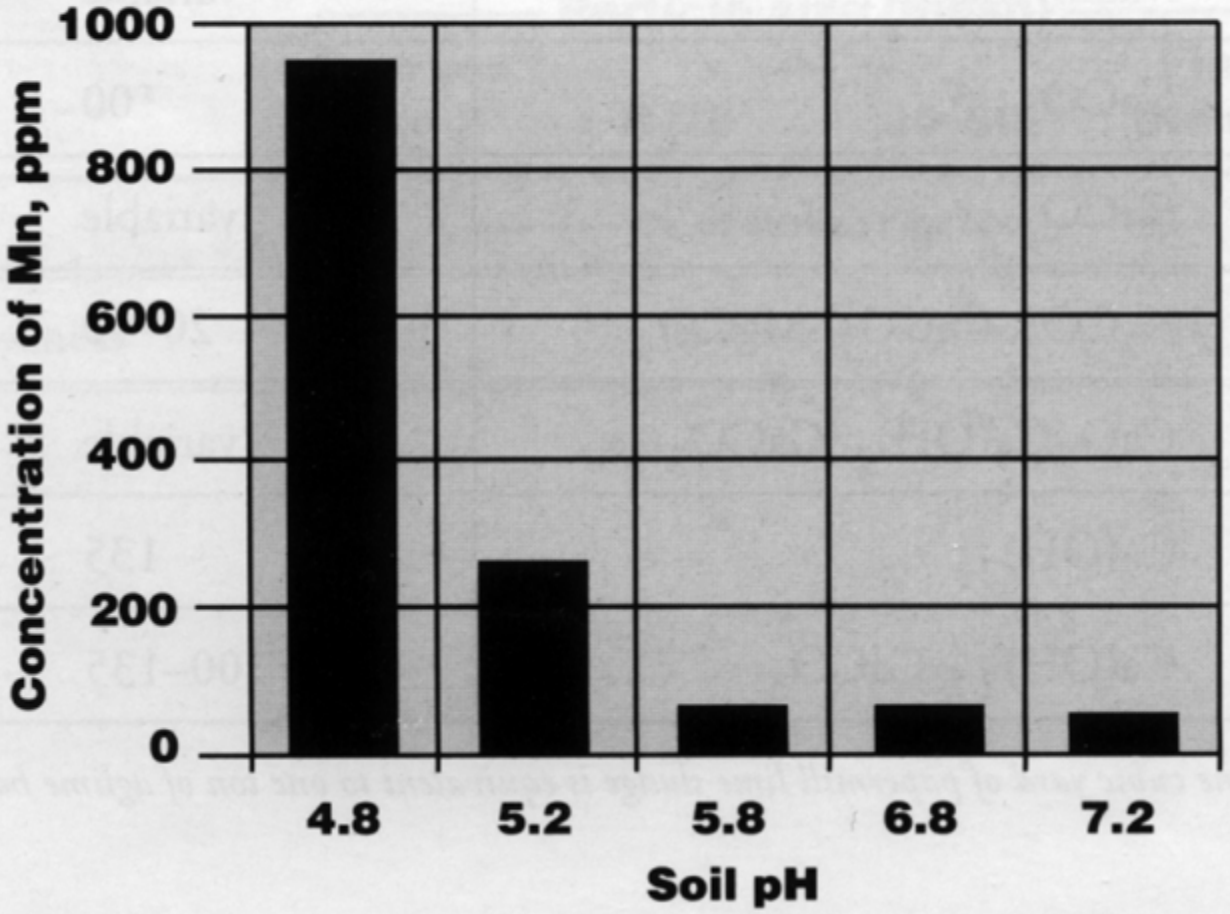
One year old stand

Effect of soil pH on avg. alfalfa yields at Marshfield (avg. of 1980-1981; sum of 2 cuttings each year).

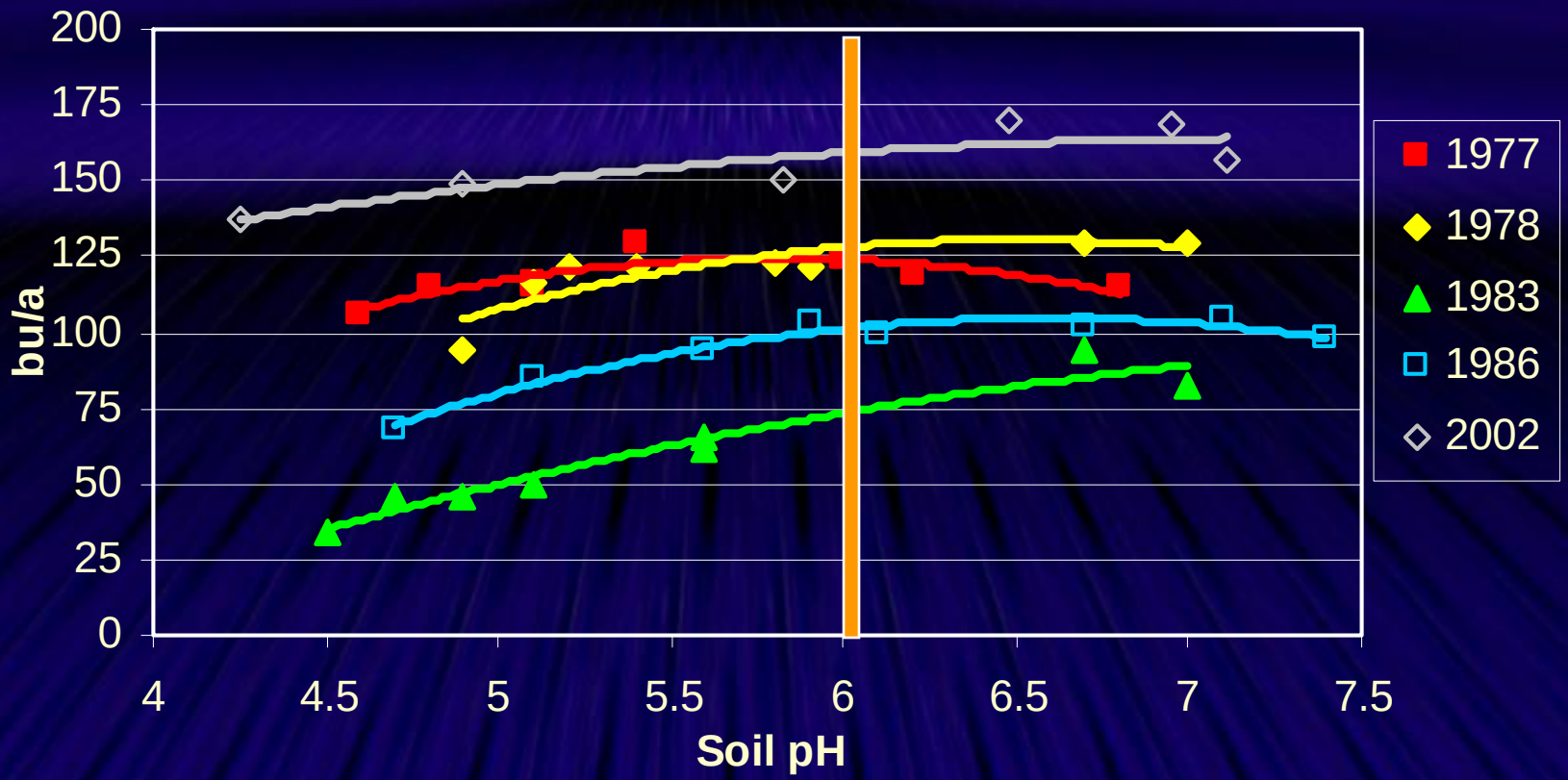


Mn toxicity at low pH levels

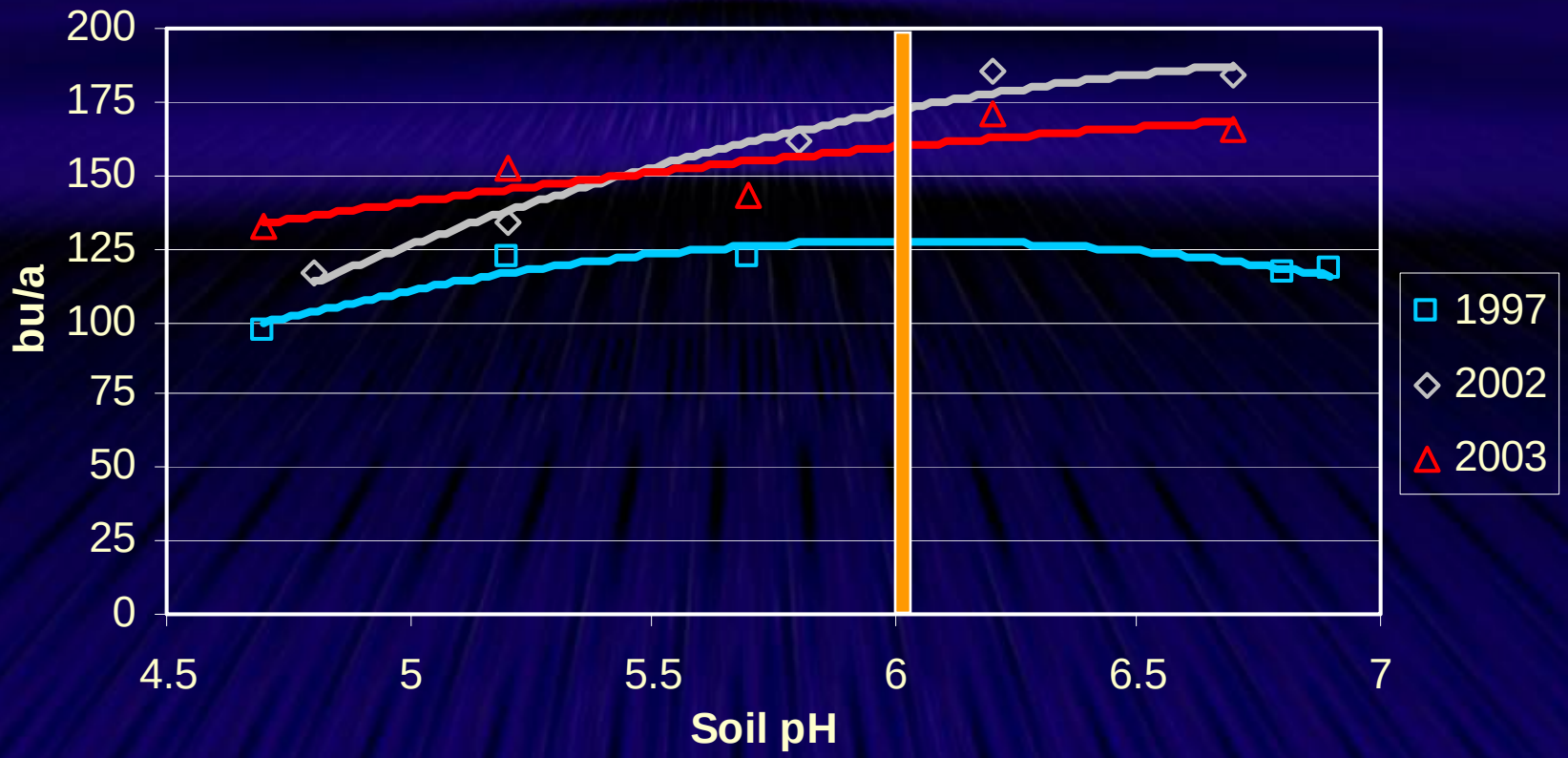
Figure 6-8. The influence of soil pH on the concentration of manganese in alfalfa tissue (Marshfield, WI). *Source: Schulte, E.E. 1982. Unpublished data.*



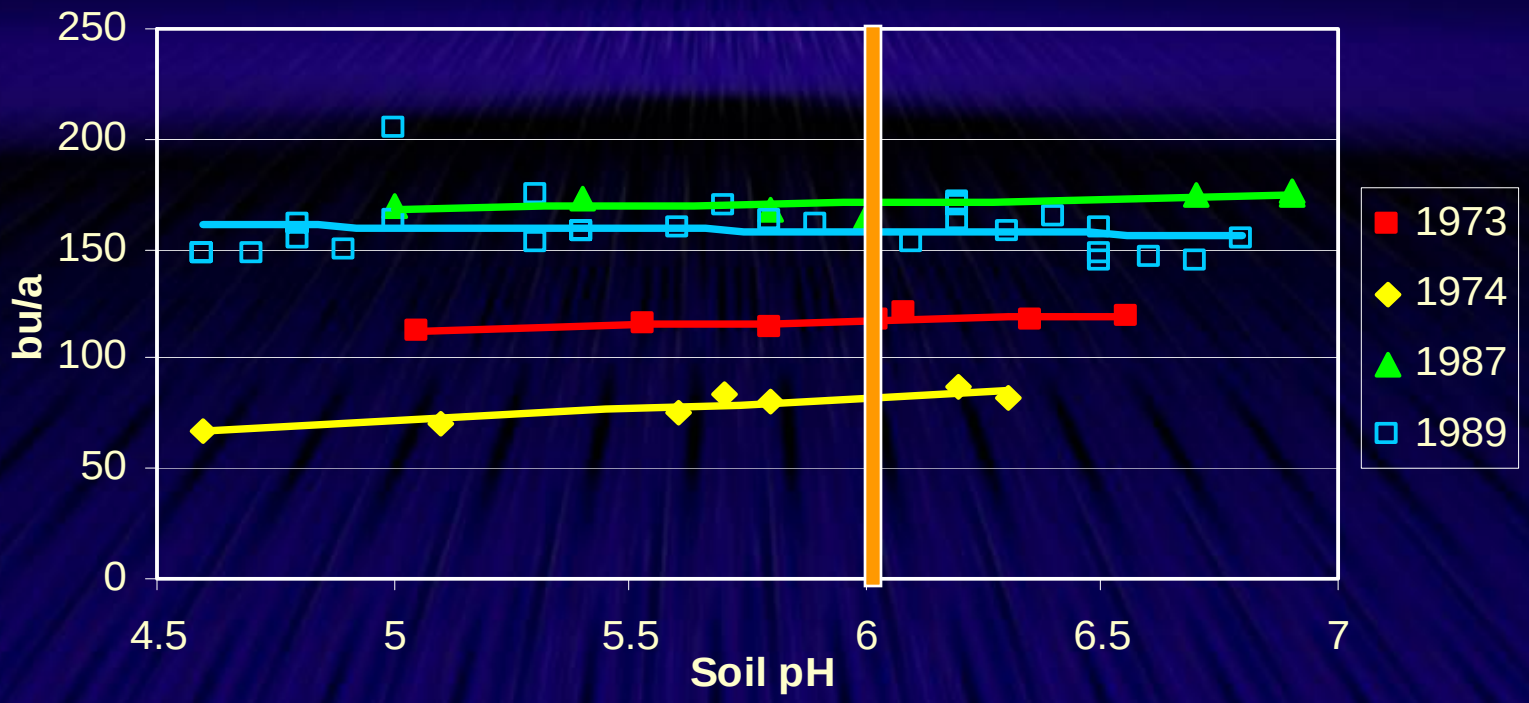
Marshfield Grain



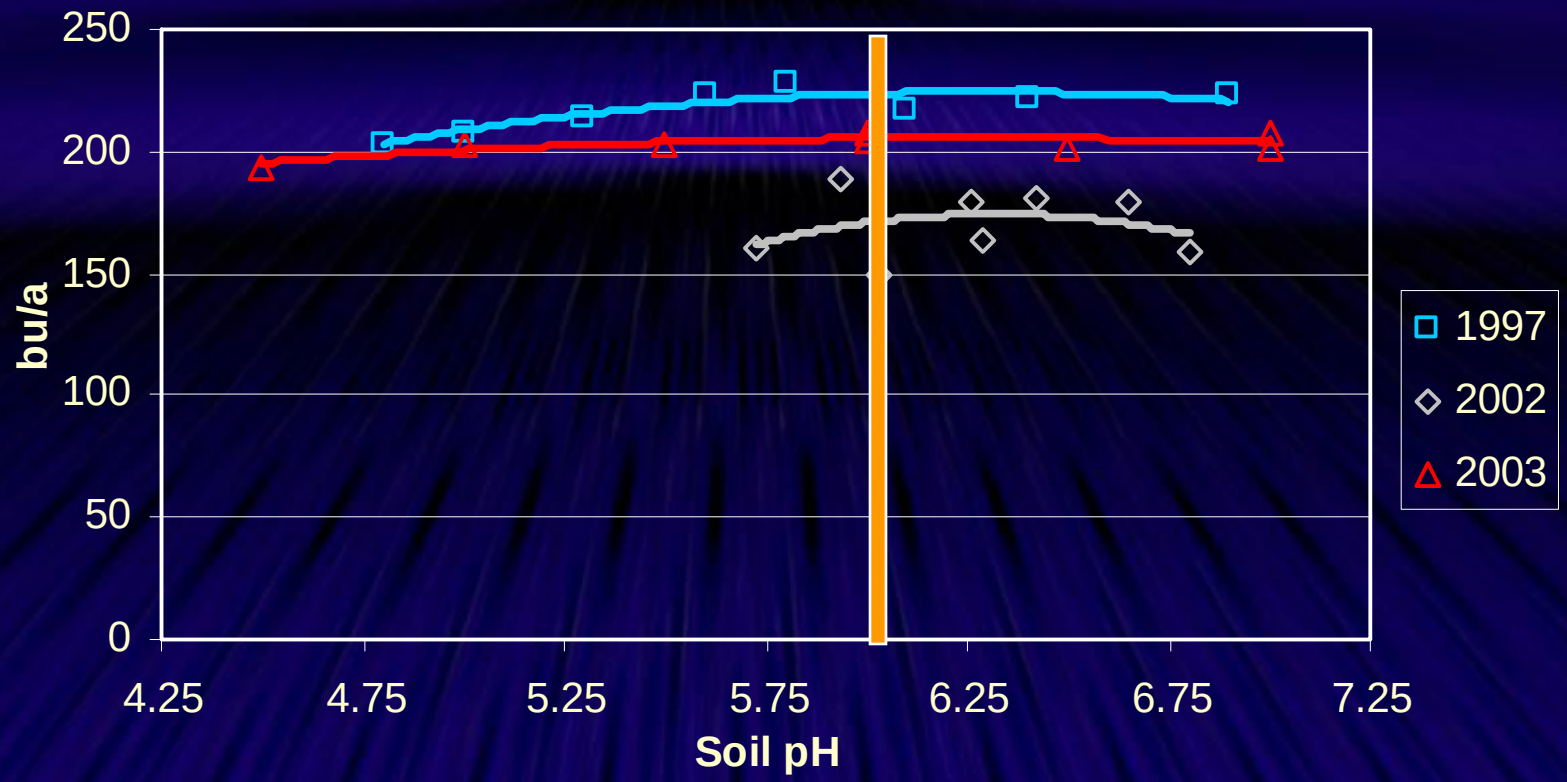
Spooner Grain



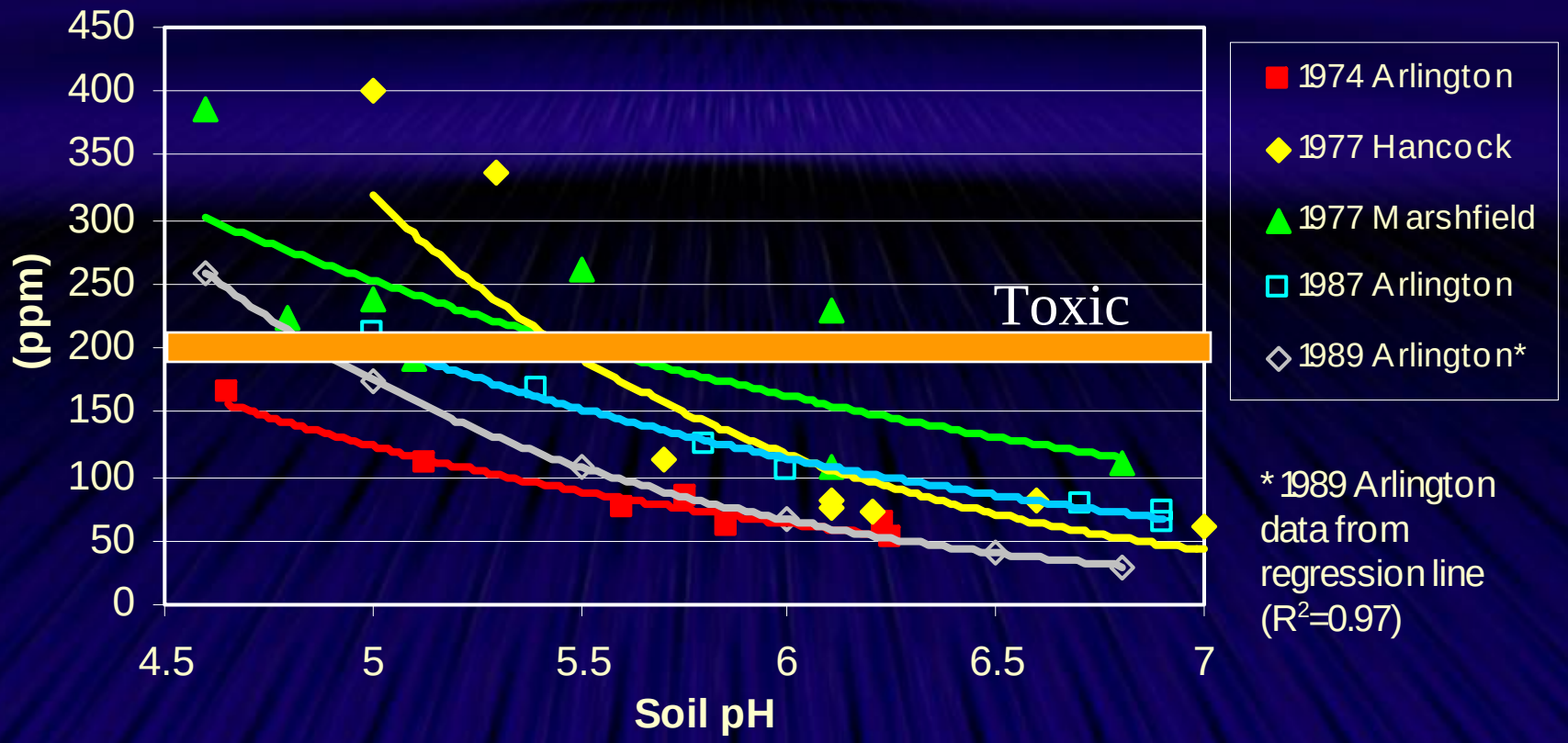
Arlington Grain



Hancock Grain



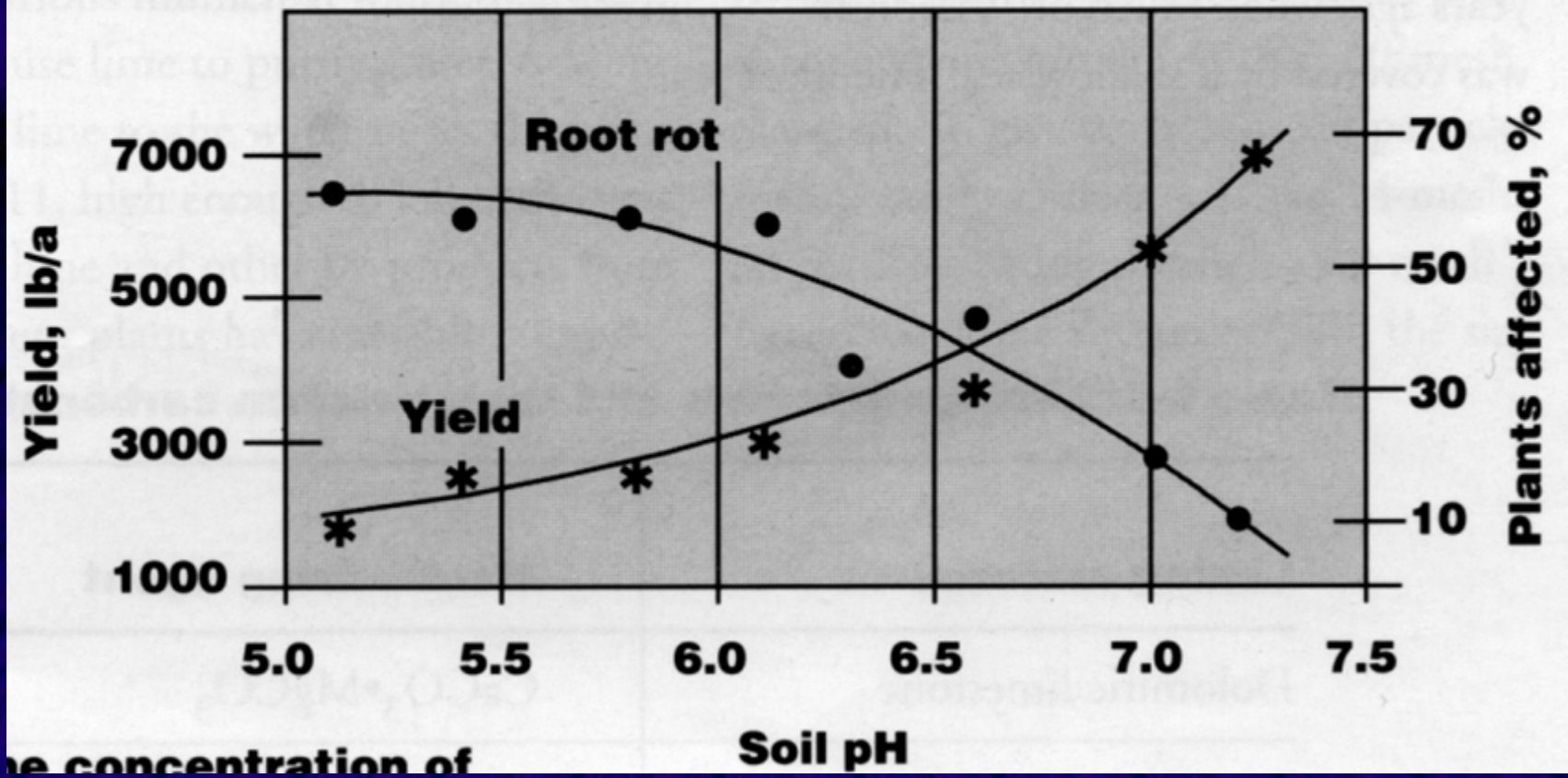
Earleaf Mn content at silking



* 1989 Arlington data from regression line (R^2=0.97)

Soil pH influence on root rot of Snapbeans

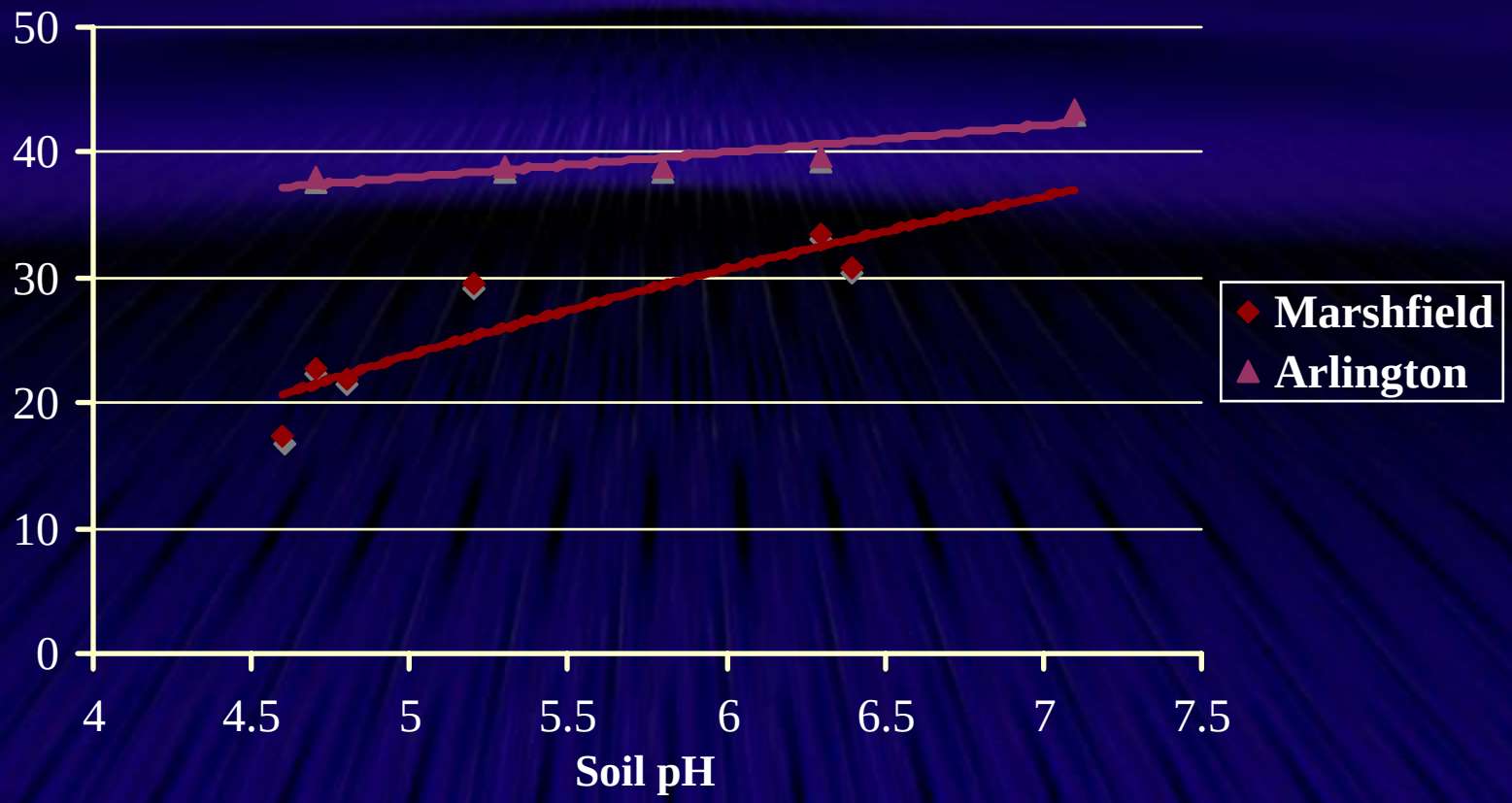
Figure 6-7. Relationship between soil pH, snapbean yield, and root rot (Hancock, WI). *Source: Schulte, E.E. 1987. Proc. Processing Crops Conf. Dept. of Hort., UW-Madison.*



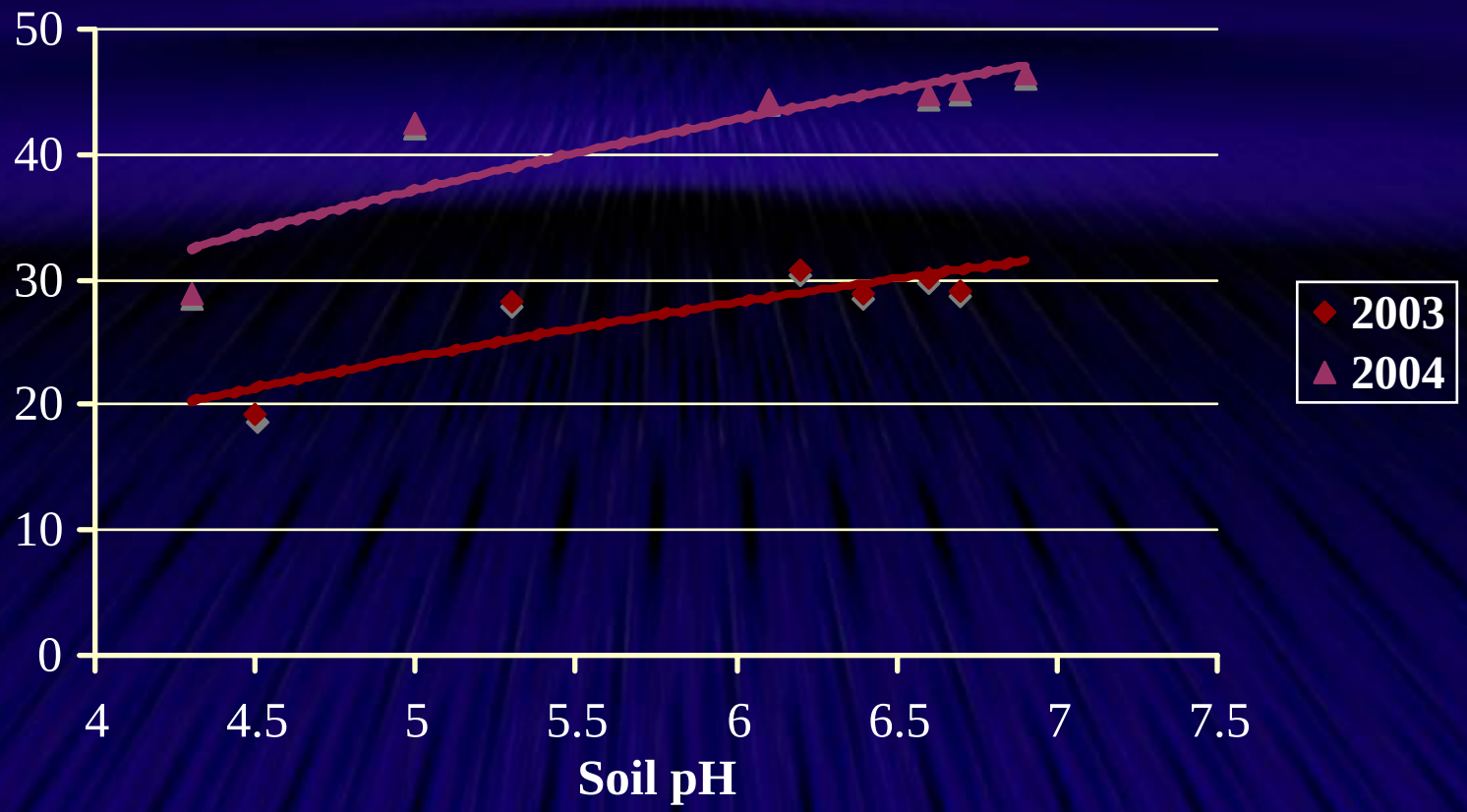
Plot Locations

- Hancock
  - Plainfield loamy sand
- Marshfield
  - Airport & Station
  - Withee silt loam
- Spooner
  - Pence sandy loam

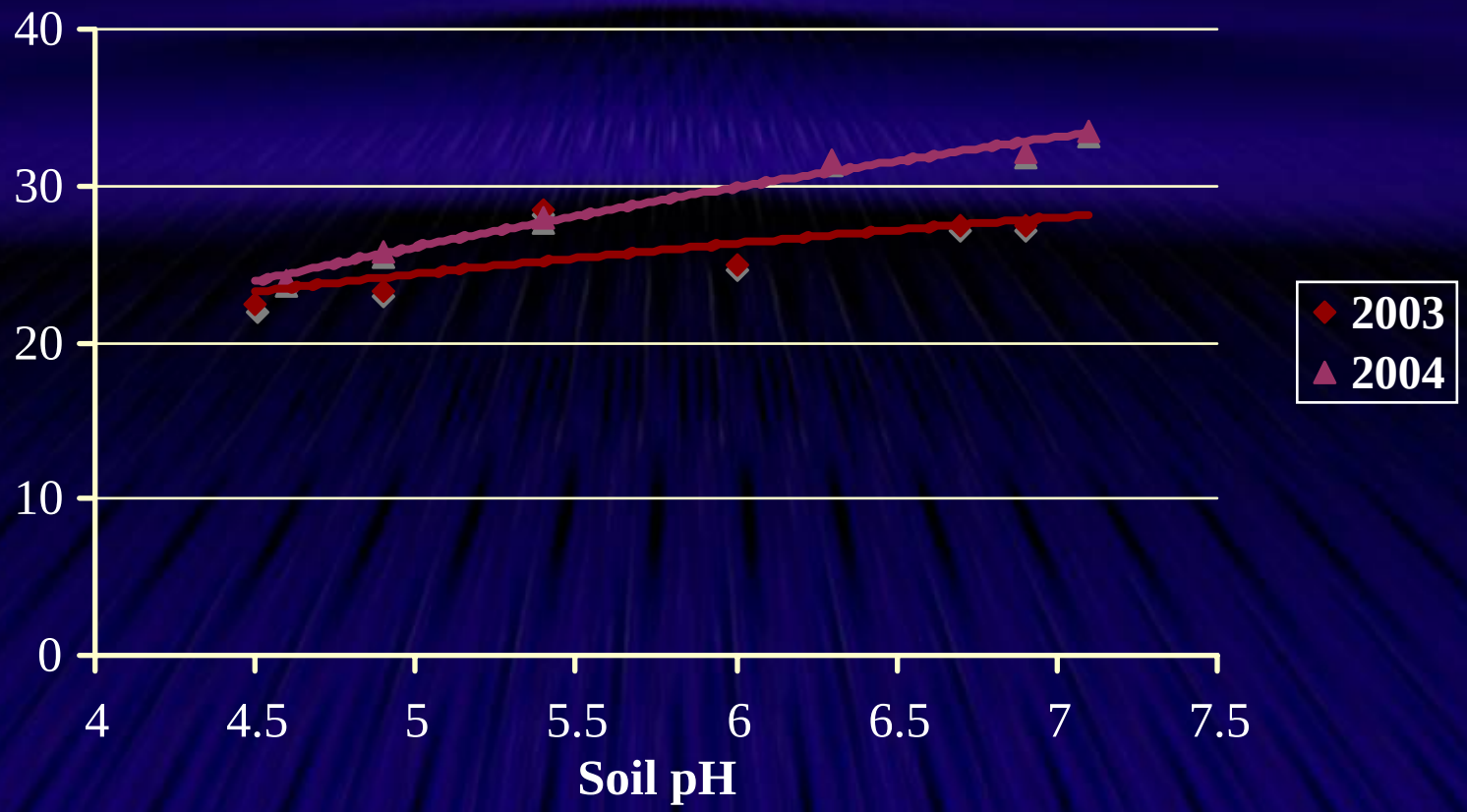
Effect of soil pH on soybean yield, Marshfield 1984



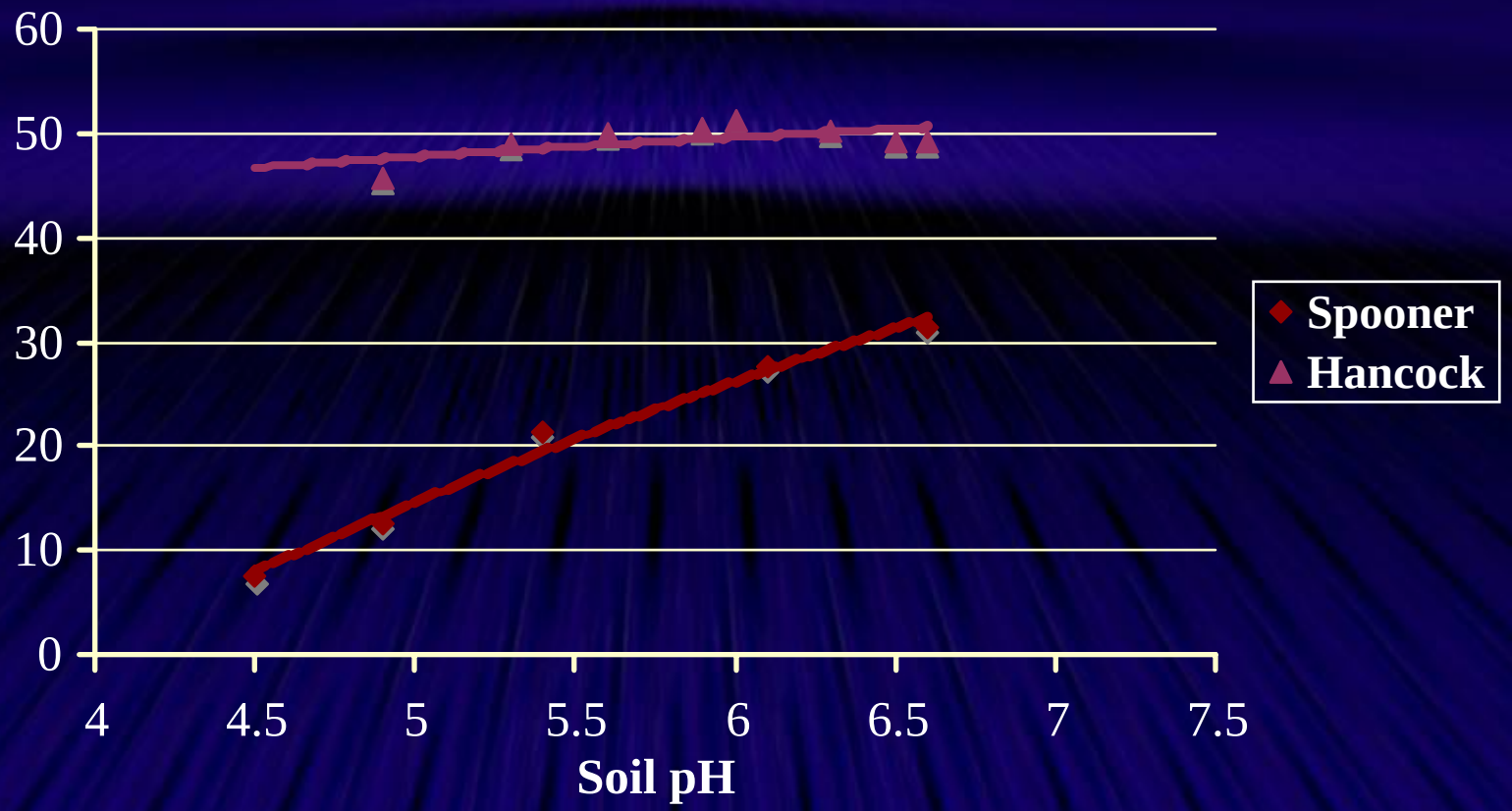
Effect of soil pH on soybean yield, Marshfield airport site



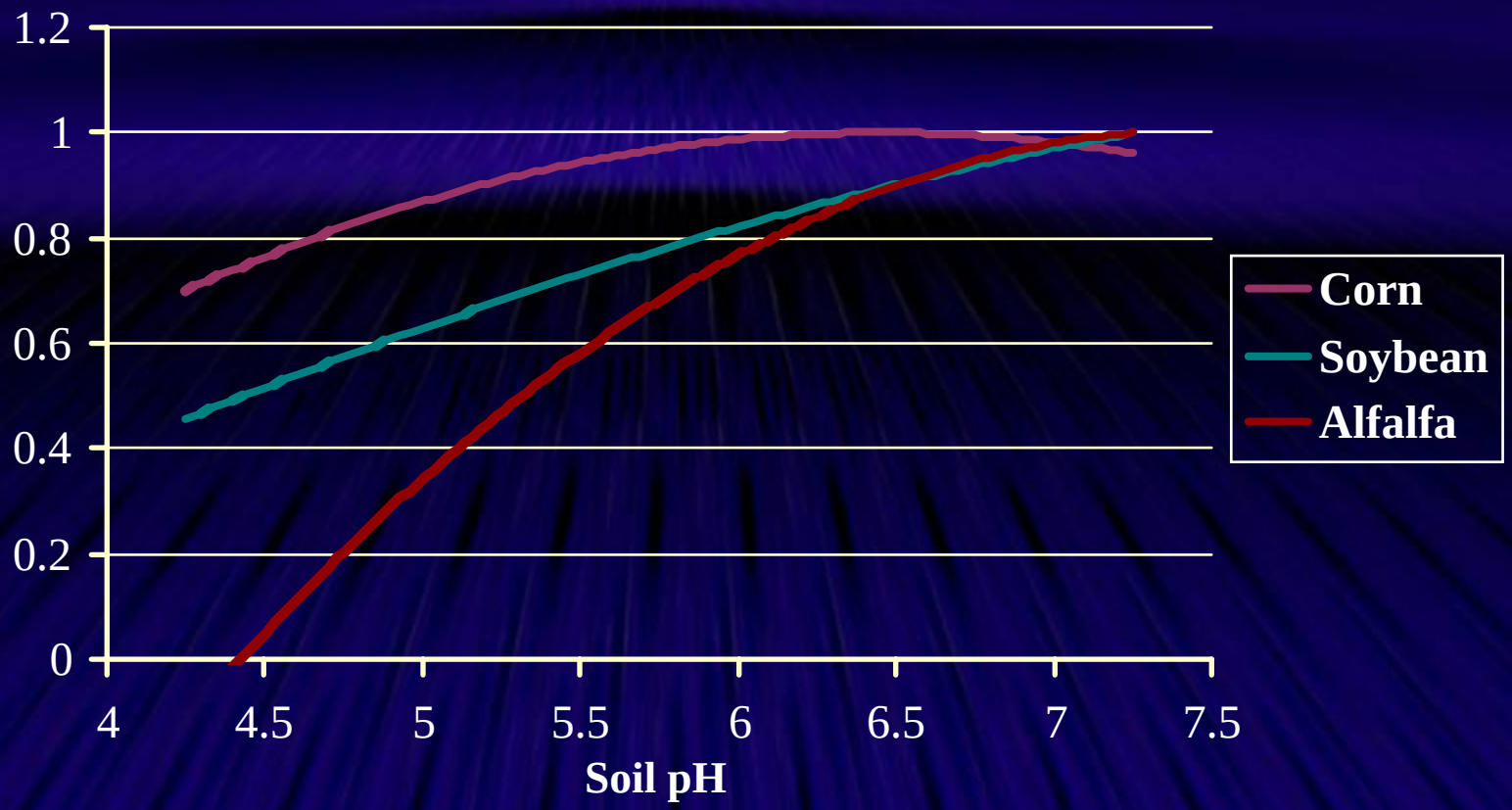
Effect of soil pH on soybean yield, Marshfield station site



Effect of soil pH on soybean yield, 2004



Effect of soil pH on crop yield response



Summary of soybean response to liming

- Significant yield responses to liming were seen on the central and northern silt loam and sandy loam soils
- Earlier work showed a significant response on a silt loam soil at Arlington.
- Little response was seen on the irrigated sandy textured soil at Hancock

Summary of soybean response to liming

- The yield response of soybeans to liming is somewhere between what is typically seen for alfalfa and corn
- Overall, these results support the current UW recommendation of liming to a pH of at least 6.3 for soybean production

Any questions?