

The more things change, the more they
stay the same: Advances in soils and
agronomy over 50 years

Carrie Laboski
and friends

COMPUTERS "TAILOR MAKE" RECOMMENDATIONS

Article written by
Leo Walsh for
Crops & Soils, October 1964



U. of Wisconsin Photo

Circa 1961. UW was the first
lab to implement computerized
recommendations in the U.S.

WCMC presentation topics through the decades

1961 Lime & Fertilizer Dealers Program

- Held:
 - LaCrosse (1/17)
 - Wausau (1/18)
 - Fond du Lac (1/19)
 - Madison (1/23)
- Sponsored by:
 - UW Soils Dept.
 - Wisconsin Fertilizer Assoc.
- Program chairmen varied with location and were representatives of the WFA

1961 Presentation Titles

- Accurate soil sampling and testing – The first steps in developing a sound fertility program. J.K. Hammes
- A look at Wisconsin's lime recommendations past and present. J.R. Love
- Balanced fertility – Its effect of the yield, lodging, and maturity of corn. J.T. Murdock
- Service and counsel – The key to sales. R.D. Munson, American Potash Institute
- Principles of nutrient uptake from fertilizer bands. A.J. Ohlrogge, Purdue University
- Results of 1960 corn fertility demonstration. L.M. Walsh

Service and counsel – The key to sales.

R.D. Munson, American Potash Institute

- “There is nothing so constant as change.”
- “In an Iowa study, 95% of farmers contacted thought YOU should be a reliable source of information on fertilizer use. REMEMBER – reliable information stems from knowledge.”
- “Services that you can offer that farmers like
 - Soil sampling and testing programs
 - Fertilizer spreading
 - Following up to check on fertilizer results
 - Sponsoring fertilizer demonstration plots
 - Fertilizer clinics held with a specialist present”

Conference titles and locations

- 1961 Fertilizer and Lime Dealers Program
 - Multiple locations
- 1964 Fertilizer and Lime Dealers Conference
 - Madison only
- 1965 Fertilizer and Lime Conference
 - Soils Dept., WFA, & Wis. Aglime Producers Assoc.
- 1967 Fertilizer and Aglime Conference

Conference titles and locations continued

- 1975 Fertilizer and Aglime Conference held in conjunction with 29th Annual Wisconsin Pest Control Conference with Industry
 - Playboy Convention Center, Lake Geneva
- 1976 Back in Madison
- 1979 Wisconsin Fertilizer, Aglime, & Pest Management Conference
- 2009 Wisconsin Crop Management Conference

1971

(17 presentations)

- Potassium fertilization of alfalfa. R.D. Powell
- Manganese fertilization of soybeans in Wisconsin. G.W. Randall & E.E. Schulte
- Survey of sulfur needs of alfalfa. L.M. Walsh and R.G. Hoelt
- Atmospheric N and S. Hoelt, Walsh, and D.R. Keeney
- Fertilizer efficiency and movement in sandy soils. J.J. Gension, R.F. Hensler, D.R. Keeney, L.M. Walsh
- Optimum yields mean minimum pollution. S.R. Aldrich (U of IL)

1971

- Lime law – one year later. D.D. Forsyth
- The cost of services. E.F. Downen (FS Services)
- New developments in fertilizer. R.P. Achorn
- Changes in the fertilizer law. H.M. Grundahl
- Selling dealer problems J. Mayr
- What is an ideal service program from a dealer to farmer? L.R. Kapelke
- Collections and credit. A.H. Uebele

1971

- Use of N on specialty crops. L.A. Peterson
- Southern corn leaf blight. G.L. Worf
- Copper and zinc toxicity. L.M. Walsh
- The non farm fertilizer market. L. Lamb (Swift Ag Chemicals)

1981

(45 presentations)

- Role N mineralization in conservation tillage
- Effect of soil P, soil K, and broadcast N on response of corn to row fertilizer
- Importance of K fertilization in alfalfa
- Verticillium wilt on alfalfa – a new disease problem for Wisconsin farmers
- Understanding your business and managing for profit
- Dealing with pesticide and fertilizer spills
- Selective postemergence grass control herbicides
- Rodent & wildlife remedies
- Wisconsin insect survey results
- Corn rootworm insecticide picture 1981

Wisconsin Fertilizer Research Program

- Tonnage fee is \$0.10/ton of fertilizer
 - To support fertilizer research
- 1980 first year funded projects
 - 17 proposals submitted
 - 14 funded
 - Had \$38K left over to roll forward
- 2010
 - 7 proposals submitted
 - Only enough money to fund 2 or 3
- Current fund is too small to support a diverse research portfolio that is needed advance Wisconsin agriculture
- For more info visit: <http://www.soils.wisc.edu/frc/>

1991

(49 presentations)

- Biotechnology at work – Testing of superior Rhizobium strains
- Experiences producing an organic crop
- Effectiveness of topdressed lime from various sources
- Management of alfalfa quackgrass mixtures
- Usefulness of N tests in humid regions
- Atrazine break, movement, and the importance of metabolites

1991

- Mixing and loading sites: What's next for dealers
- Environmental self-evaluation
- Prescription nutrient management with intensive soil sampling and differential fertilizer spreading
- "Advantage" and varietal resistance for reducing herbicide injury to corn
- Are economic thresholds, economic injury levels and treatment thresholds the same?
- Diseases, nematodes and rotation crop selection: A case study

2001

(73 presentations)

- Economics of N fertilizer use with low crop prices
- Managing weed control inputs with WEED-SOFT
- Put N and P into the crop, not water
- The Wisconsin P index and its relationship to P losses in runoff
- Knowing when to look for what: Weed emergence and flowering sequences in Wisconsin
- Selecting insecticides that are less hazardous to beneficial insects

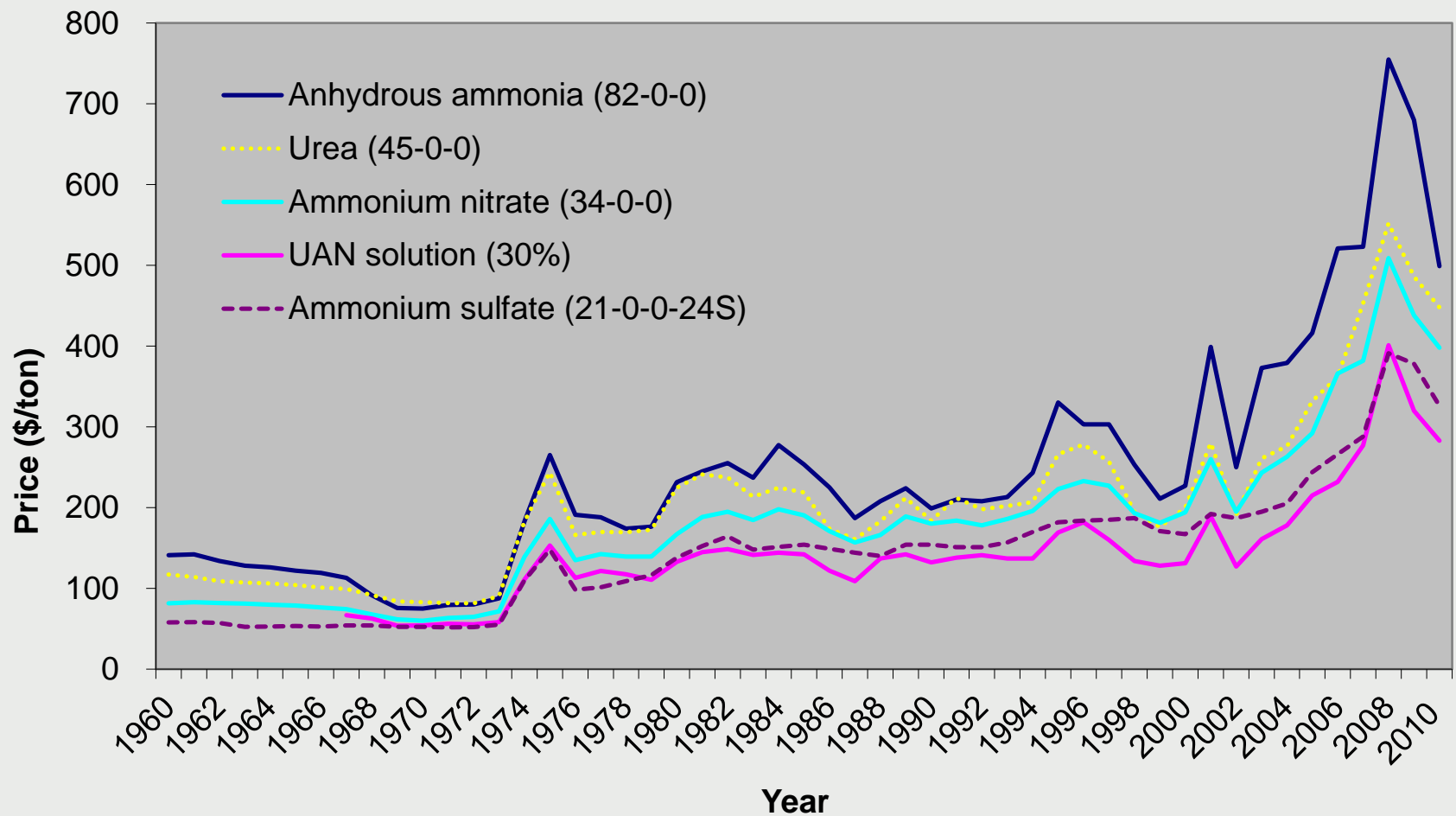
2001

- Combined impacts of Western corn rootworm larval feeding, European corn borer and giant foxtail on field corn
- Soybean viruses: curiosity or production problem
- The continuing hypoxia saga
- Transgenic crops: are milkweeds and butterflies in trouble?
- Using in-field reflectance to identify N or K deficiency
- Compaction effects on plant water use
- A web-based herbicide injury diagnostic key
- Lessons on soybean aphid in 2000 and 2001
- Unconventional approaches to combat soybean diseases

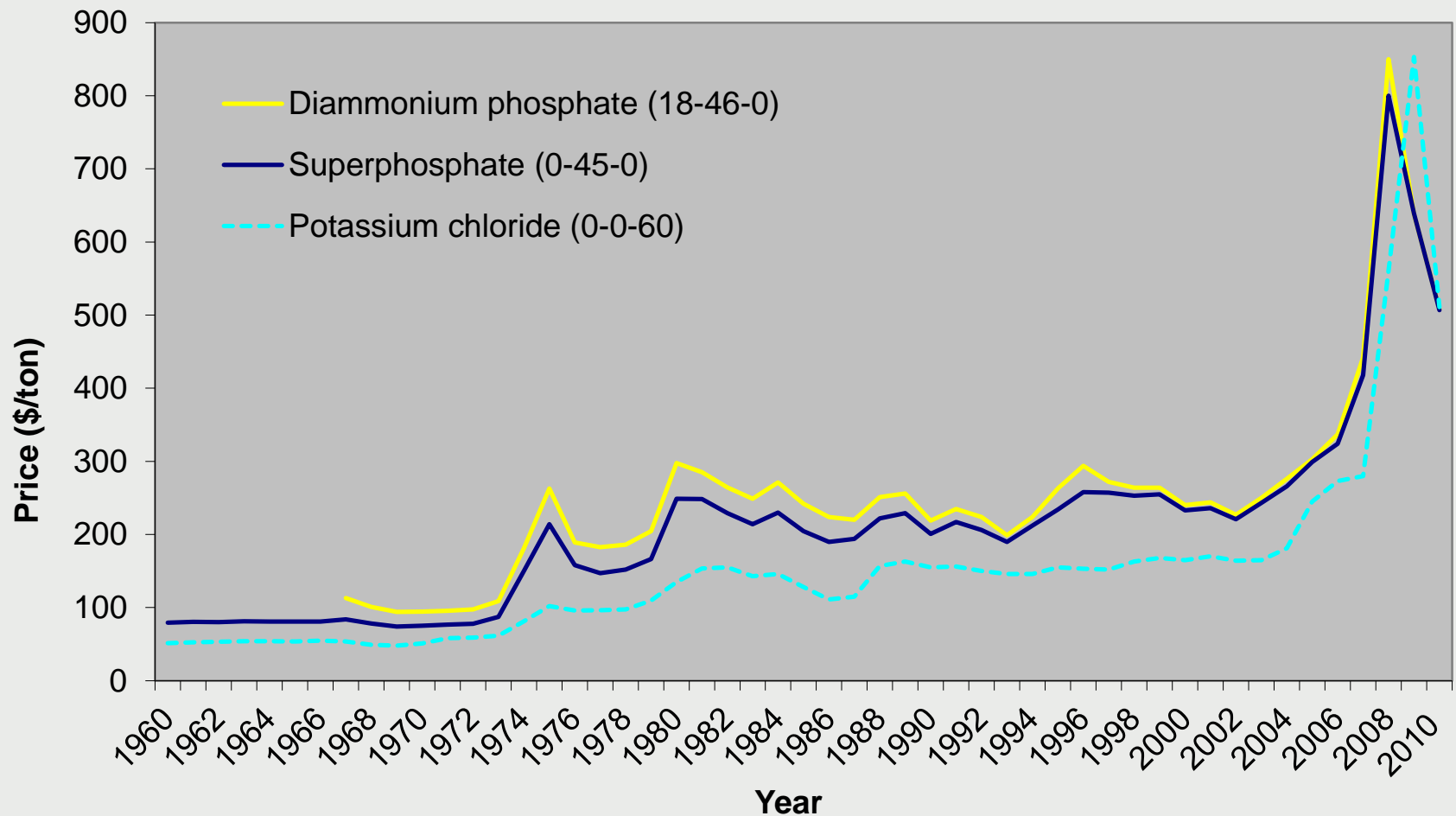
2001

- Fungicides for winter wheat production
- Raising non-rotation soybean
- Agronomics and economics of using GMOs
- Evaluation of variable rate liming for corn/soybean rotations
- Evaluation of N tests for site-specific N recommendations for winter wheat
- Potential for atrazine reintroduction to prohibition areas

N fertilizer prices from 1961 to 2010



P & K fertilizer prices from 1961 to 2010



WI Historic Soybean Acreage

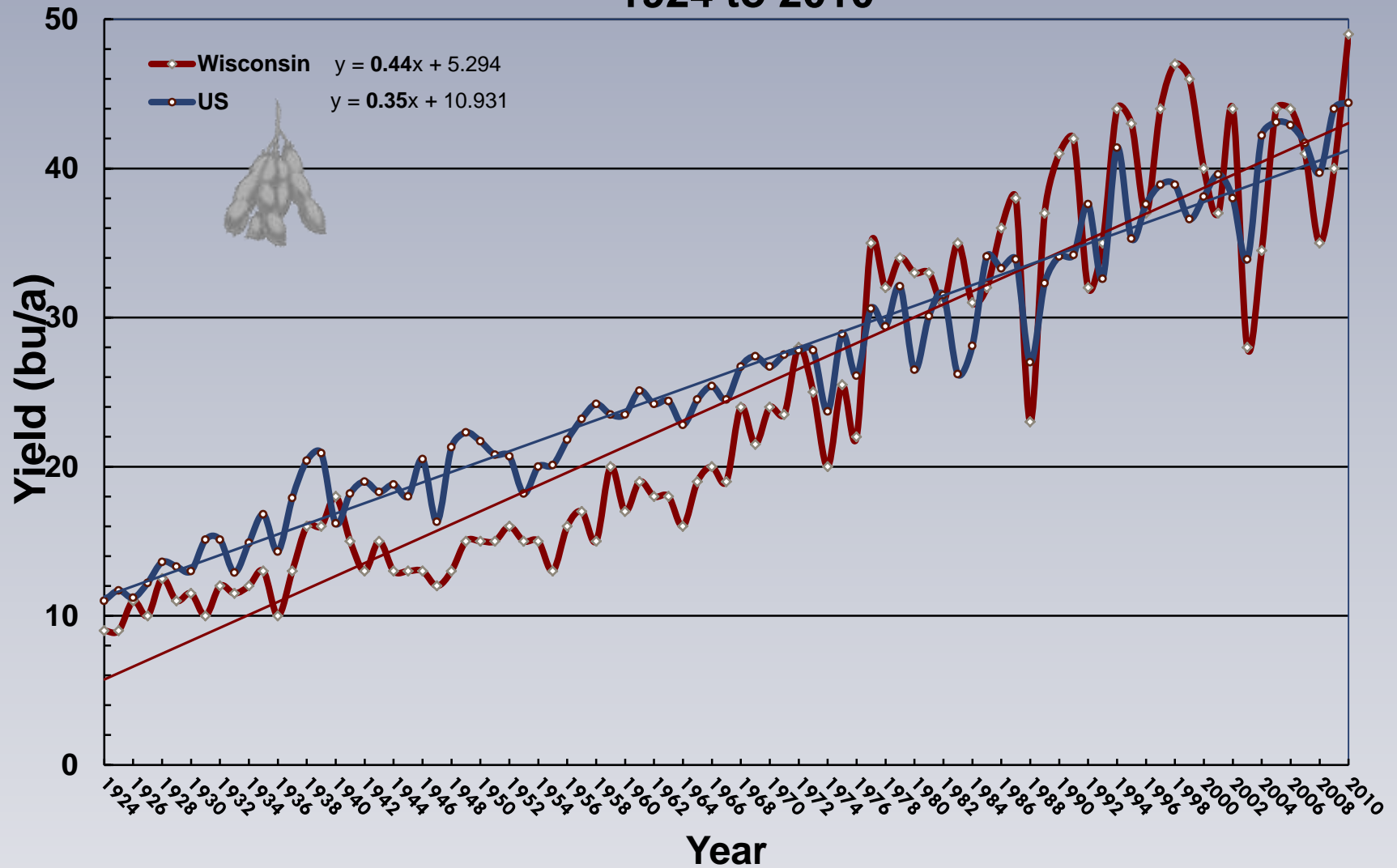
1924 to 2010



Conley & Gaska

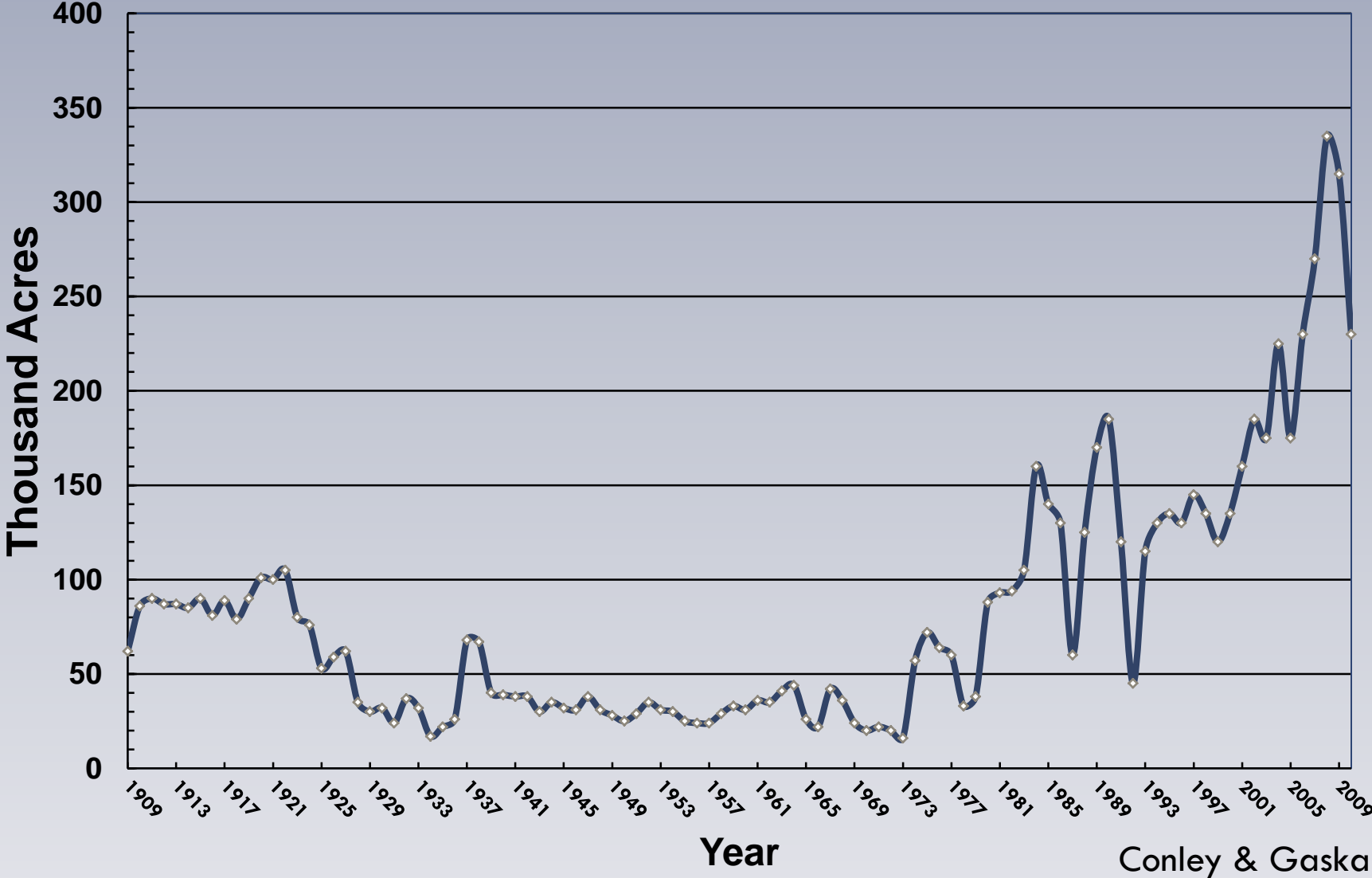
US and WI Historic Soybean Yields

1924 to 2010



WI Historic Winter Wheat Acreage

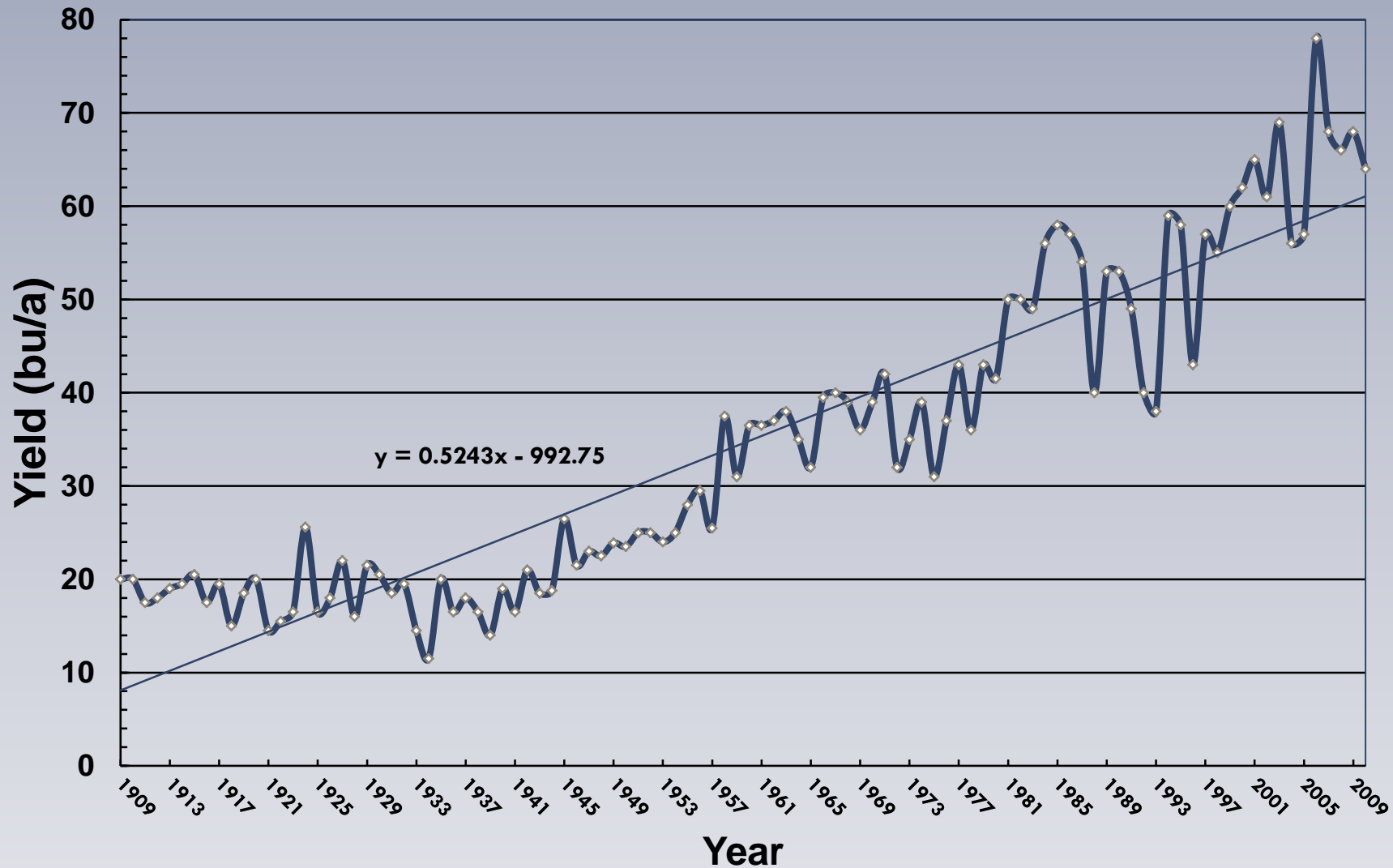
1924 to 2010



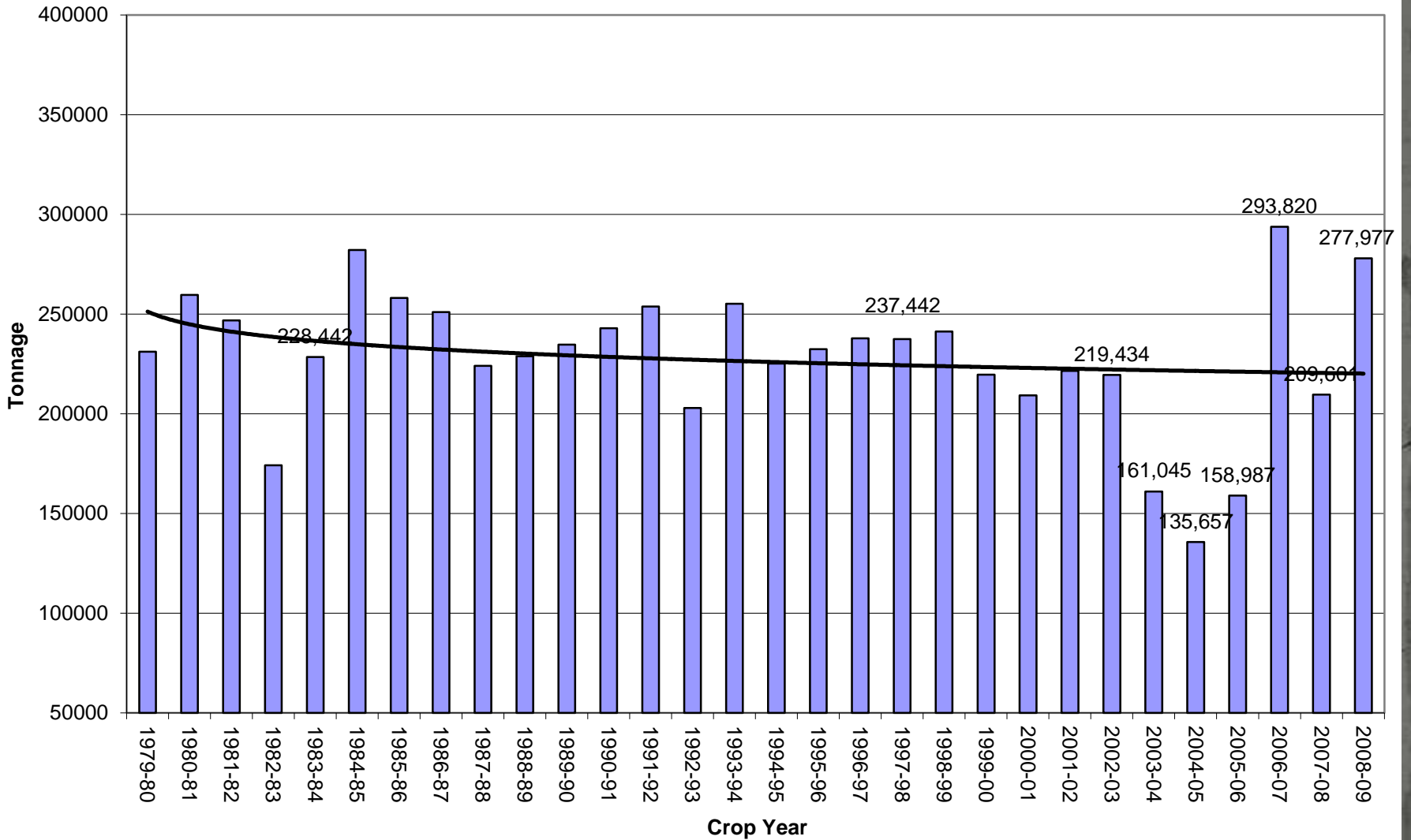
Conley & Gaska

WI Historic Winter Wheat Yields

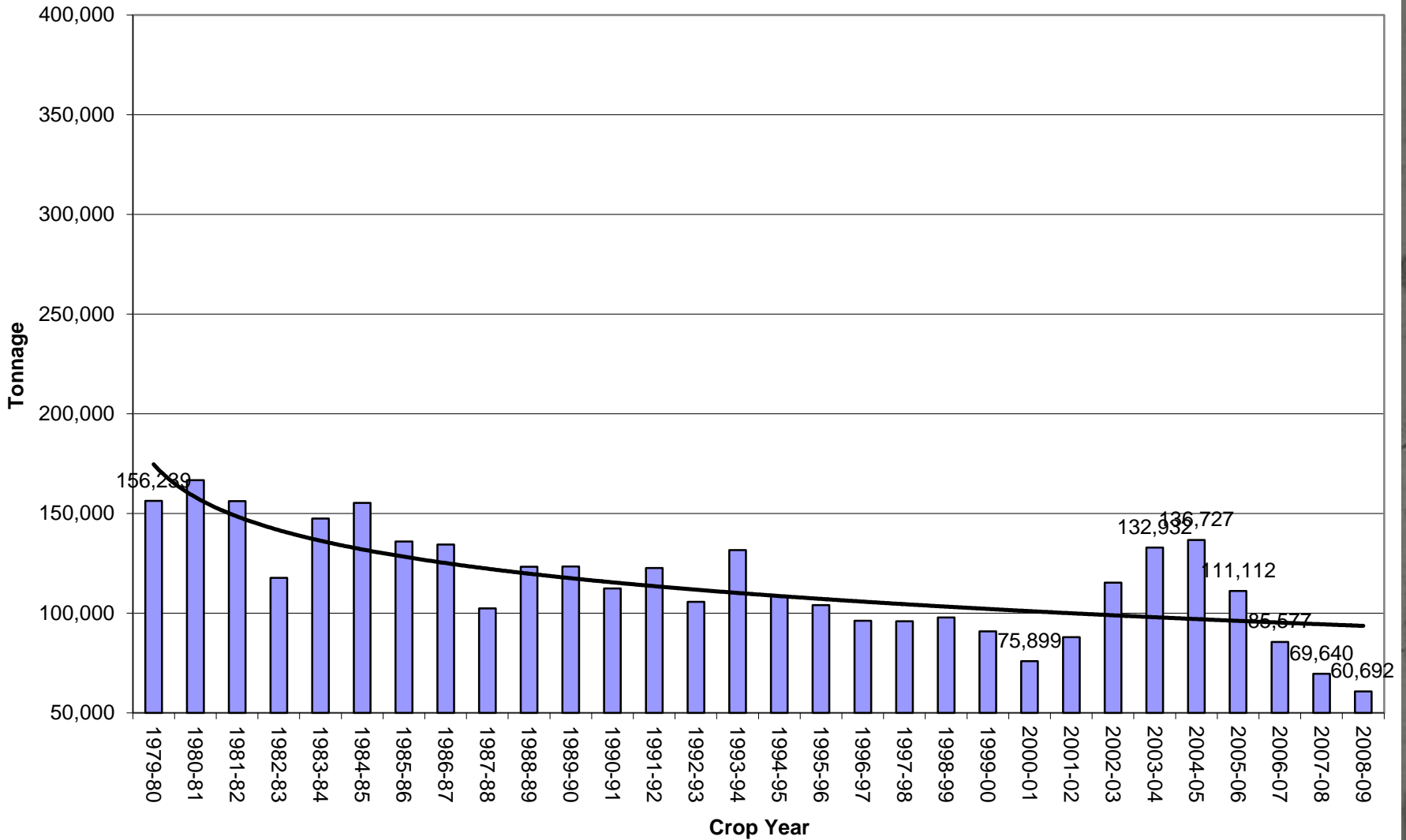
1909 to 2010



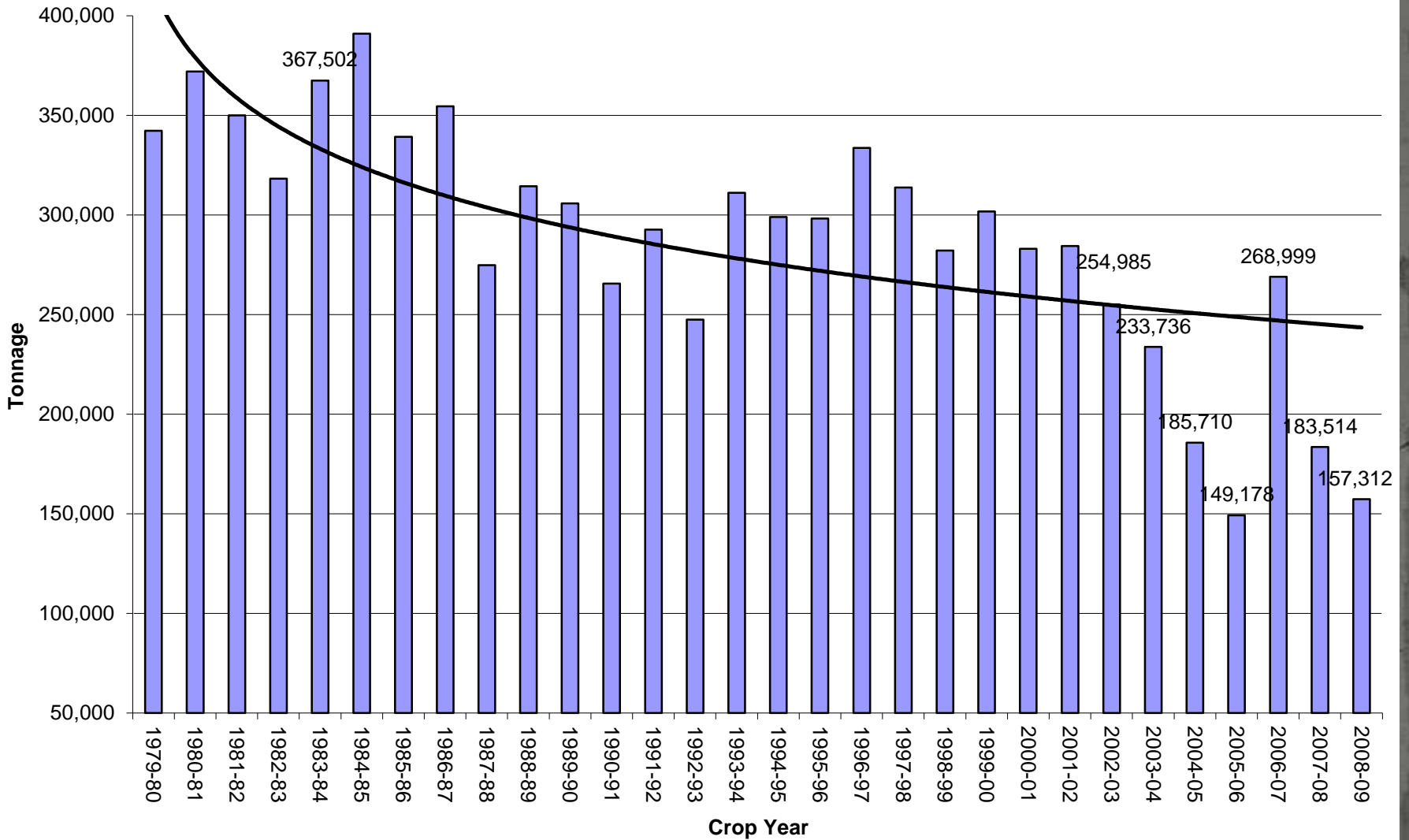
Commercial Nitrogen Consumption in Wisconsin



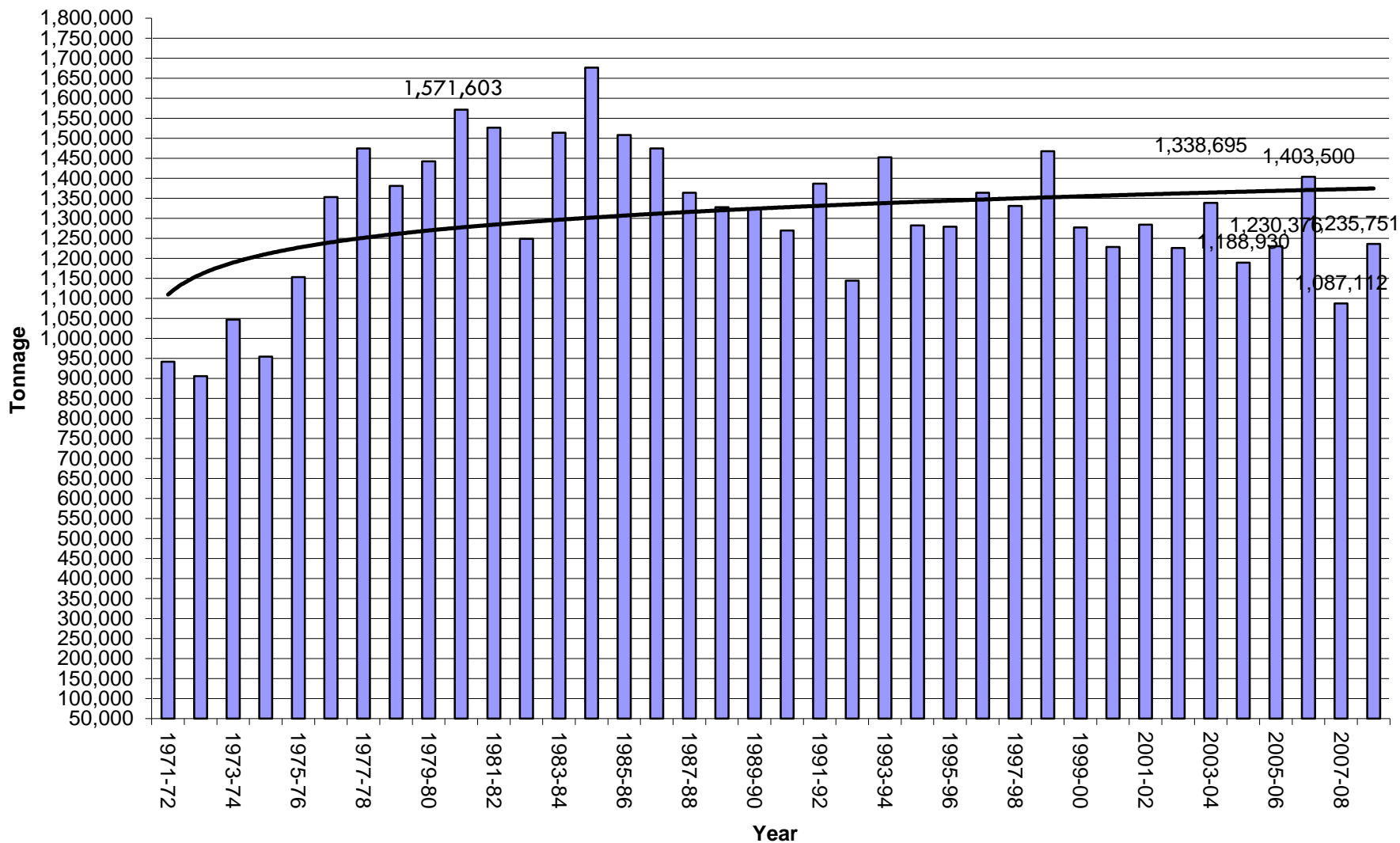
Commercial Phosphate Consumption in Wisconsin



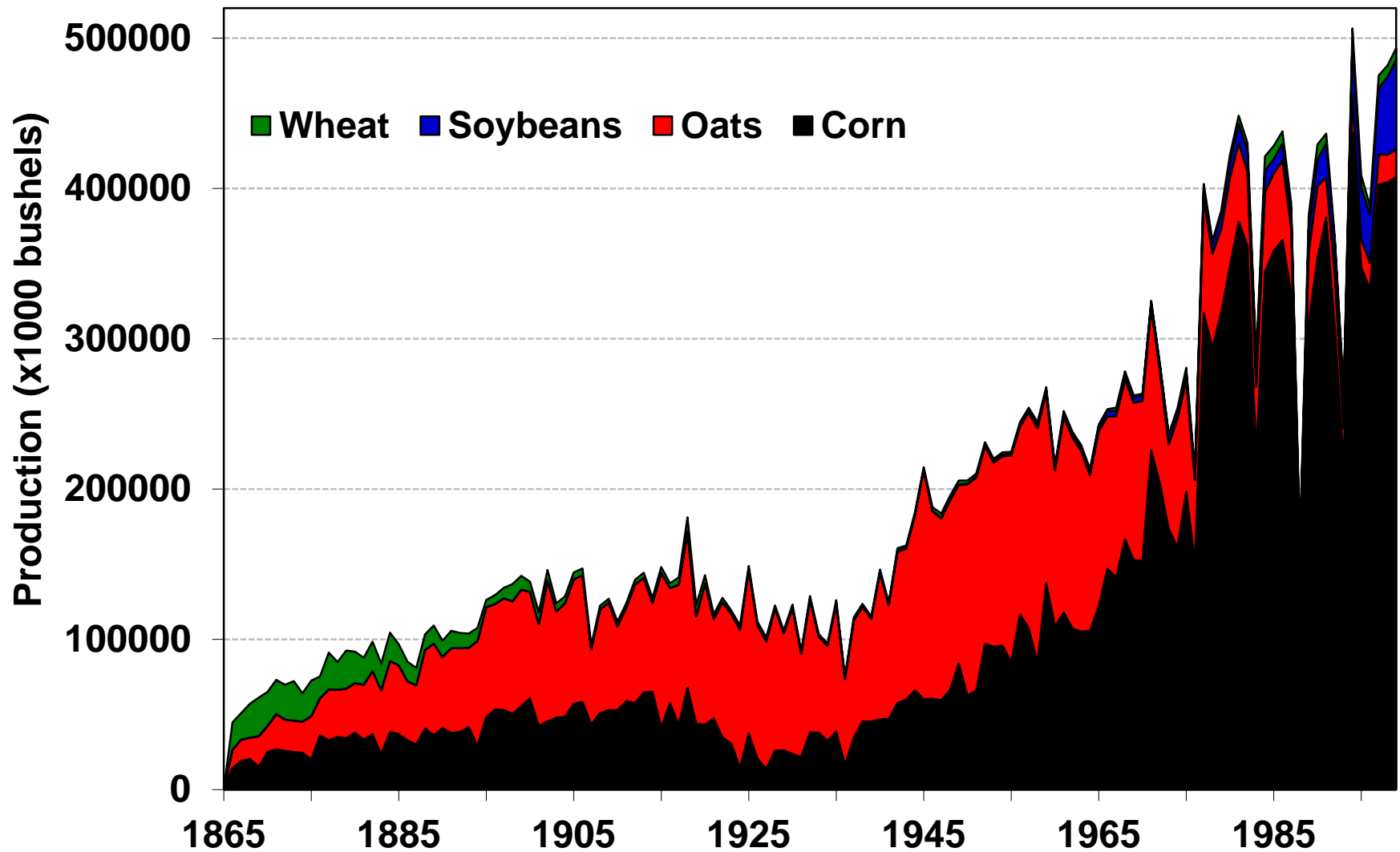
Commercial Potash Consumption in Wisconsin



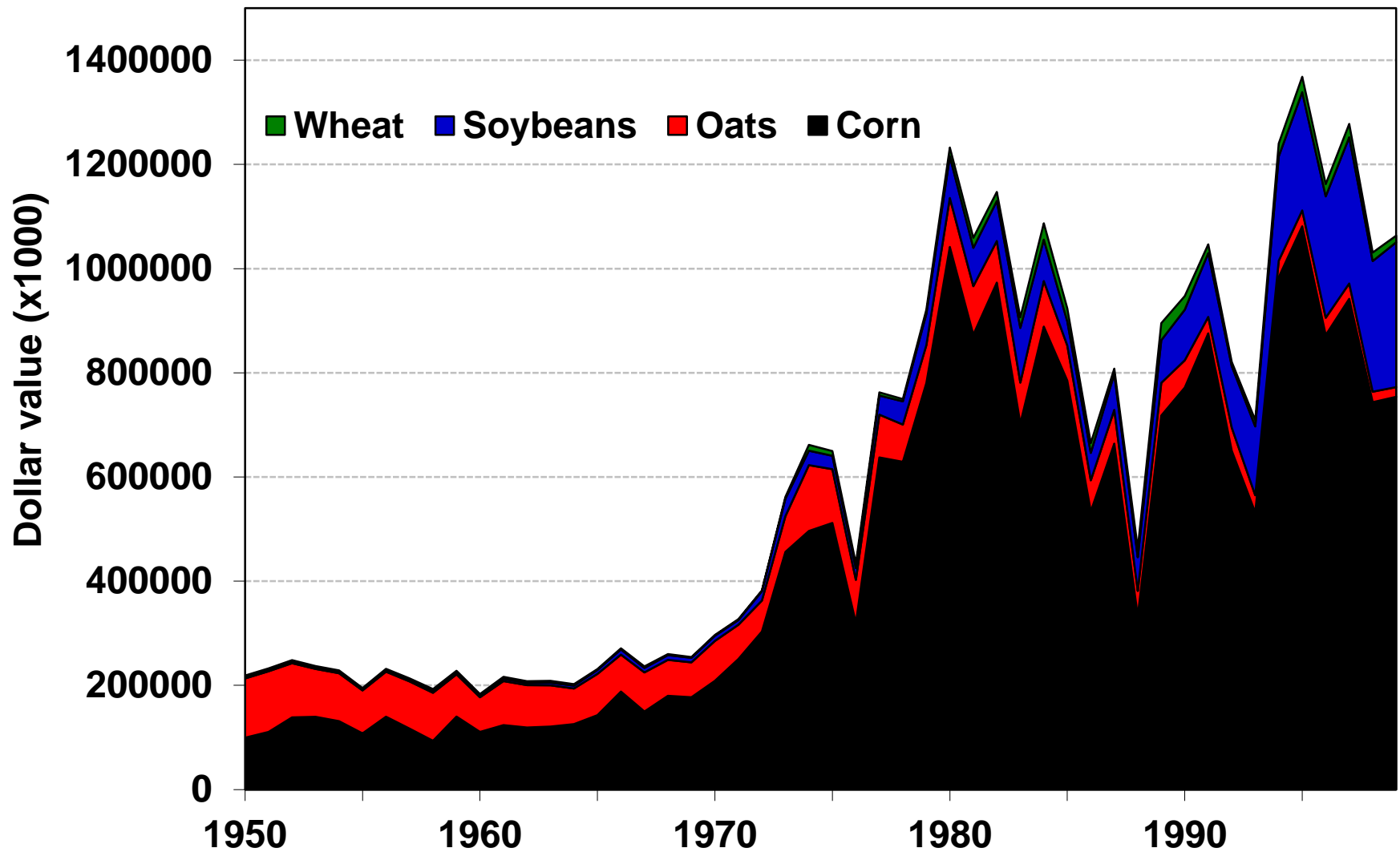
Fertilizer Tonnage Reported in Wisconsin



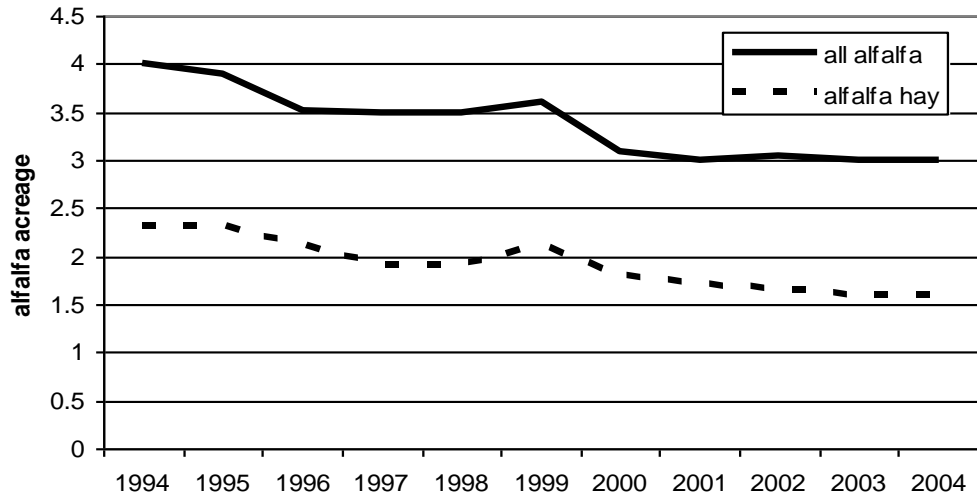
Production of Various Grain Crops in Wisconsin (1866-1999)



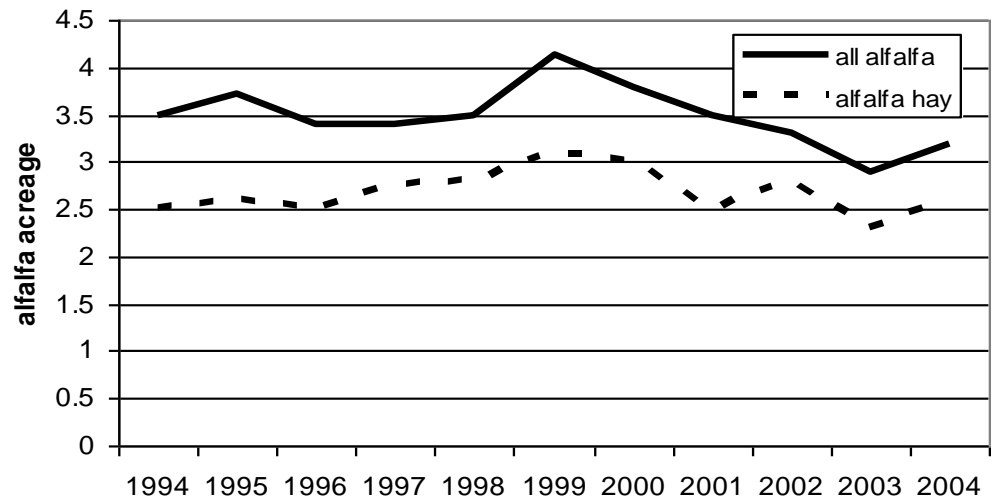
Value of Various Grain Crops in Wisconsin (1950-1999)

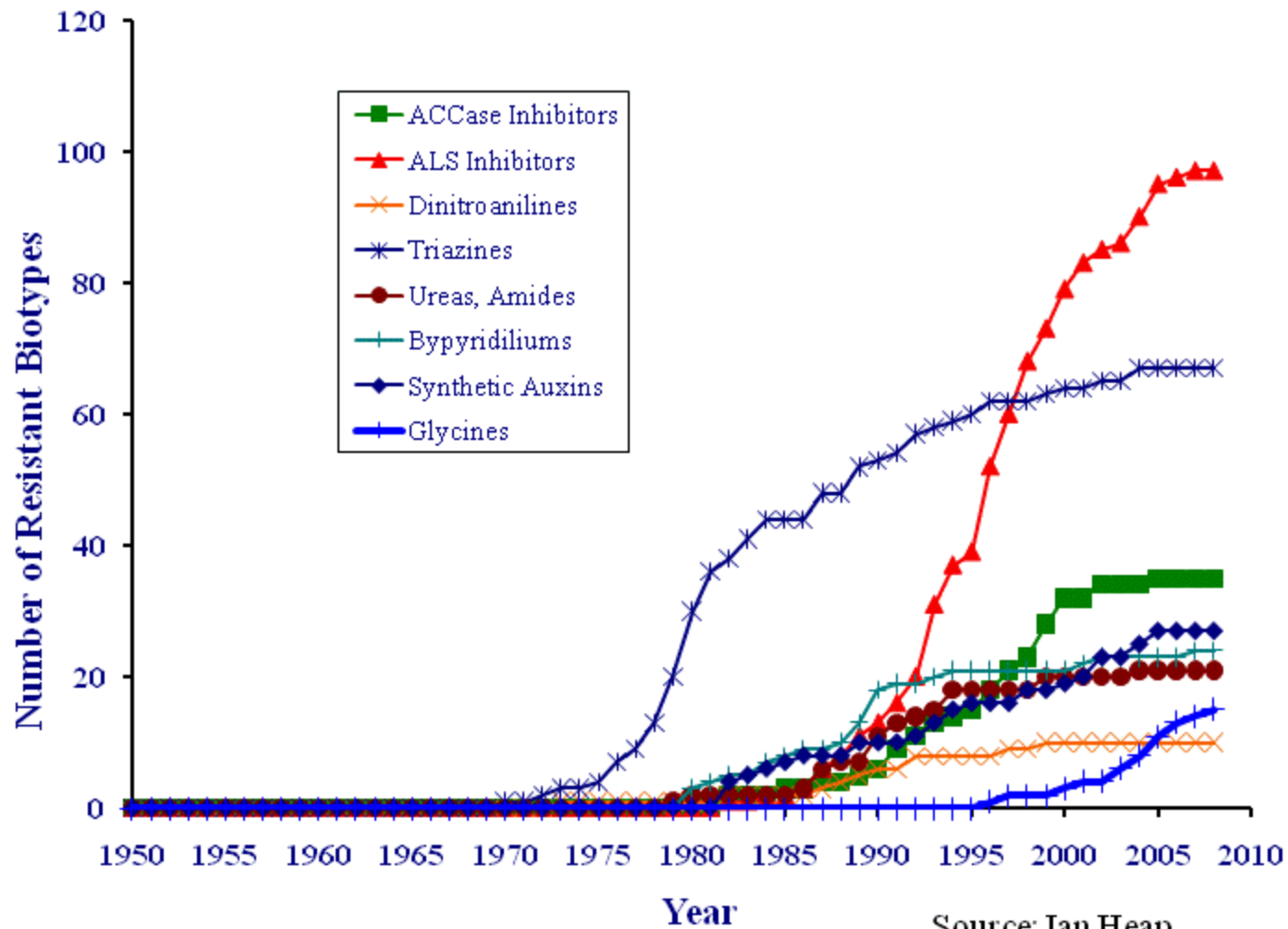


Alfalfa Hay vs All Alfalfa Acreage in Wisconsin



Alfalfa Hay vs All Alfalfa Yield in Wisconsin





Source: Ian Heap
<http://WeedScience.com>

HERBICIDE RESISTANT WEEDS IN WISCONSIN

Weed	Herbicide Site of Action	Year
Lambsquarters	PSN II inhibitors	1979
Smooth Pigweed	PSN II inhibitors	1985
Kochia	PSN II inhibitors	1987
Velvetleaf	PSN II inhibitors	1990
Giant Foxtail	ACCCase inhibitors	1991
Large Crabgrass	ACCCase inhibitors	1992
Kochia	ALS inhibitors	1995
Tall Waterhemp	ALS inhibitors	1999
Giant Foxtail	ALS inhibitors	1999
Green Foxtail	ALS inhibitors	1999
Eastern Black Nightshade	ALS inhibitors	1999

IPM

Peter, as usual you are underdressed for soil sampling.

