



Alfalfa Breeding & Selection

Genetic Improvements in Alfalfa

Information by Michael Velde, Alforex



King's
AgriSeeds^{Inc.}



Value of Aggressive Rotations

- Greater profit/acre
- Higher forage yields
- Higher forage quality
- Reduced pesticide usage
- Greater nitrogen credits
- Greater corn yields

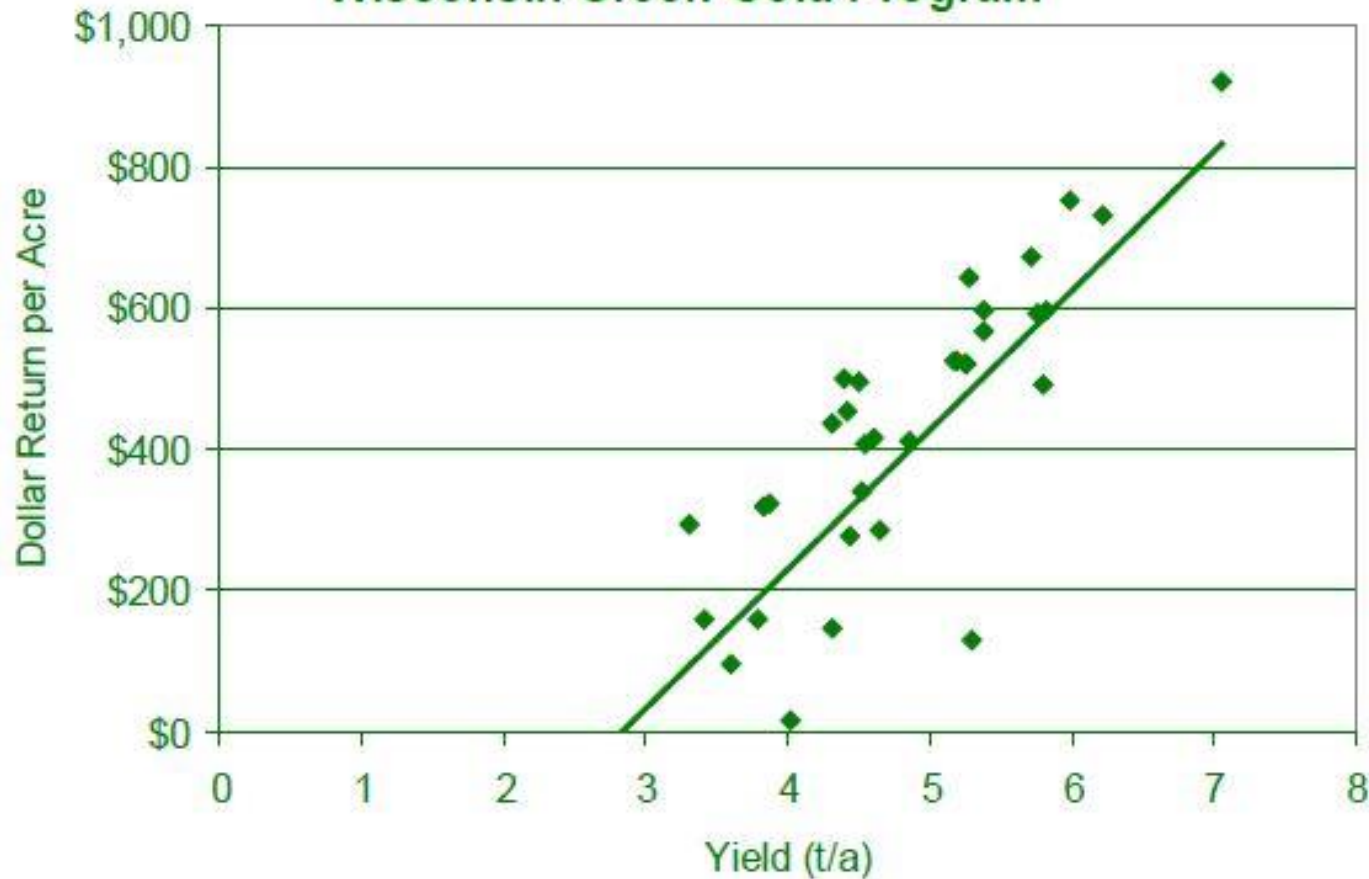


Annual Forage Yield

- Largest impact on profitability
- Inputs such as harvest costs, land rent change little with increase yield



Fig 1. Alfalfa Yield and Dollar Return/acre from Wisconsin Green-Gold Program



Declining Yield with Age

- Environmental stresses
- Wheel traffic
- Disease that appear with stand age.



**Fig 2. Effect of Alfalfa Stand Age on
Alfalfa Yield - 1971 to present**

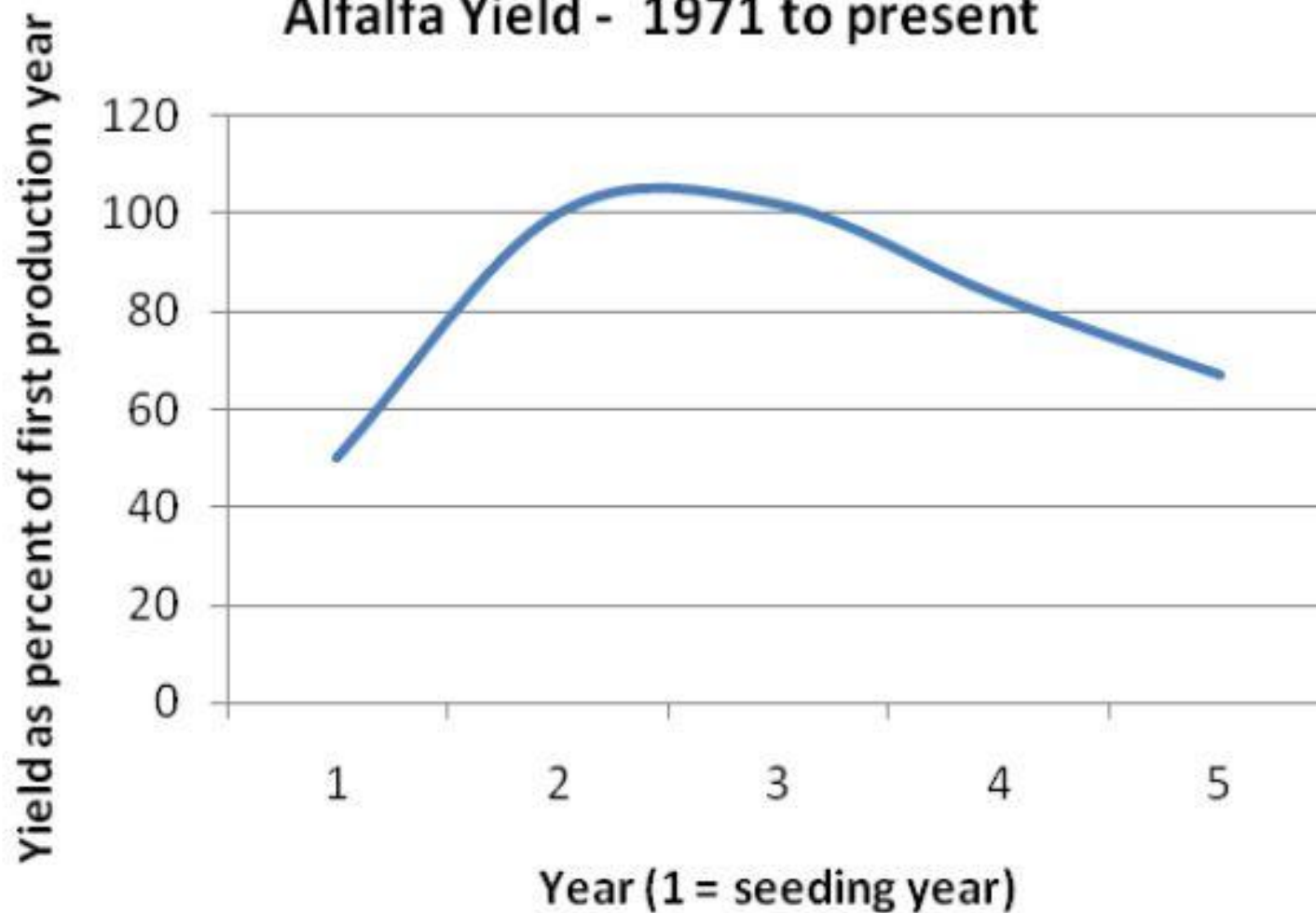
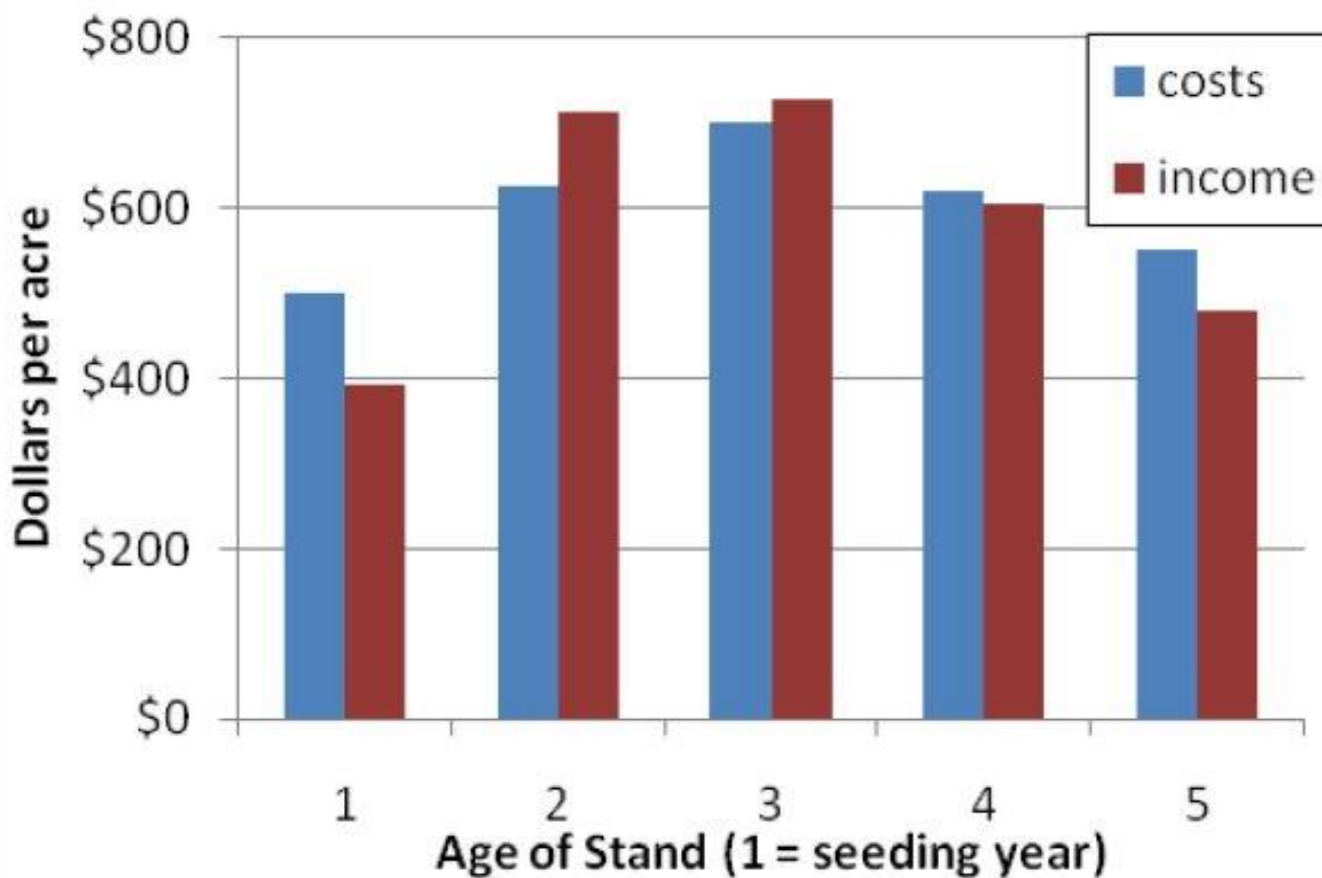


Fig 3. Alfalfa Costs and Returns by Stand Age

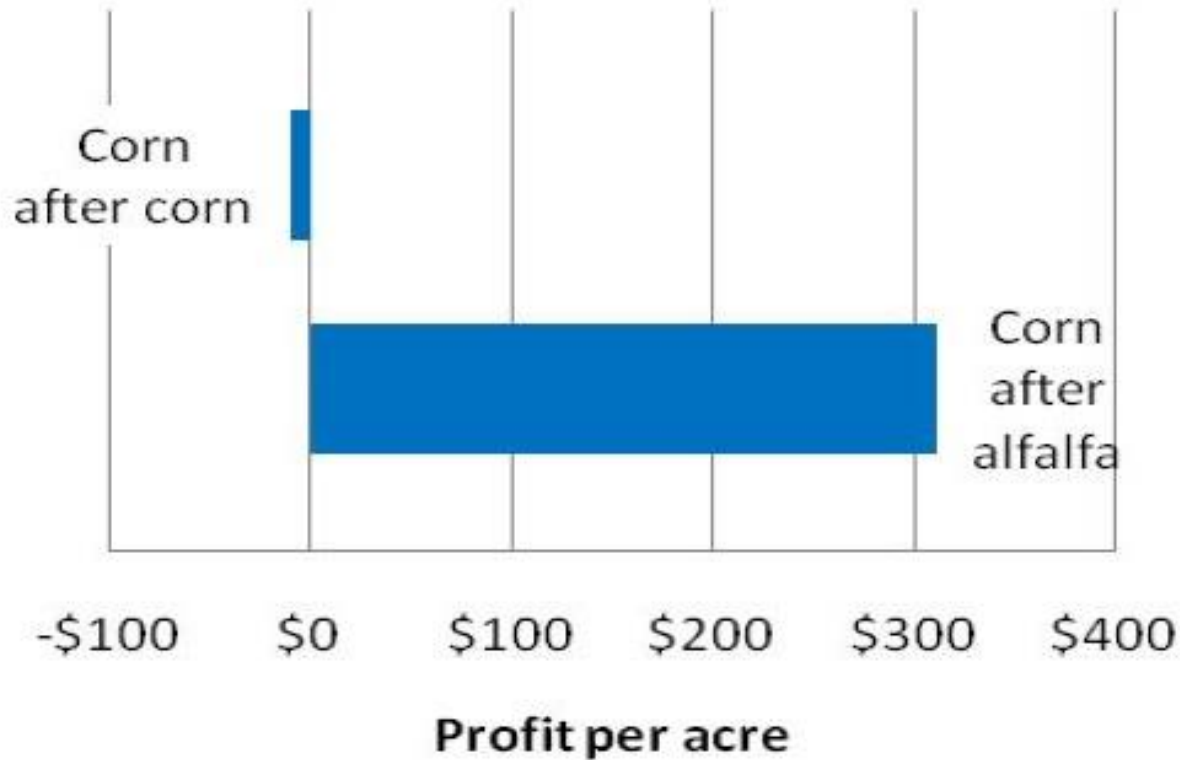


Alfalfa Increases Profit of Other Crops

- Corn grain
 - Corn valued at \$4.18/bushel
 - Nitrogen at \$.96/#
 - Corn losses we about \$10/acre growing corn after corn



**Figure 4. Value of Alfalfa to
Corn Grain Production**



Corn after Alfalfa

- Profit of \$310/acre
- Corn yields 10-15% more following alfalfa compared to corn after corn
- No need for additional nitrogen except for a starter fertilizer



Second Year Corn after Alfalfa

- 50% of nitrogen credits are still available to grow a crop of corn.



Crop Rotations

Year

1	Alfalfa	Alfalfa	Alfalfa
2	Alfalfa	Alfalfa	Alfalfa
3	Alfalfa	Alfalfa	Alfalfa
4	Corn	Corn	Alfalfa
5	Corn	Corn	Corn
6	Alfalfa Corn	Wheat/ Alf	

Acknowledgements

- Dan Undersander, Extension Forage Specialist, University of Wisconsin, Madison, WI 53706
- Ken Barnett, Extension Educator, Center for Dairy Profitability, Madison, WI 53706



Alfalfa Seeding Rates

Western Iowa Grower

- Increased seeding rate from 25 to 35#/acre.
- Observed an increase in tonnage more than paid for the addition cost of seed.
- Thicker and more robust stands the following season



Wisconsin Grower

- One half the field was 16#/acre and the other 32#/acre.
- Three replications
- Increased forage yield over $\frac{3}{4}$ ton/acre.
- Slightly lower forage quality.



Acknowledgements

- Experimenting to form new alfalfa traditions, Progressive Forage Grower, January 1, 2014

