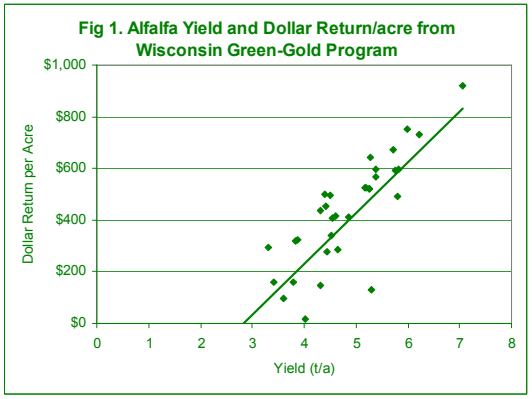
Alfalfa is a major profit center on most dairy farms. Annual yield has the largest impact on its profitability. This is shown in figure 1 where on-farm measurements of yield, quality and profitability are presented. The relationship is so strong that farmers should do all they can to remain in the high yield range with their alfalfa.



One of the challenges to alfalfa profitability is declining yield as the stand ages. The declining yield is due to environmental stresses, wheel traffic and diseases that appear as the stand ages.

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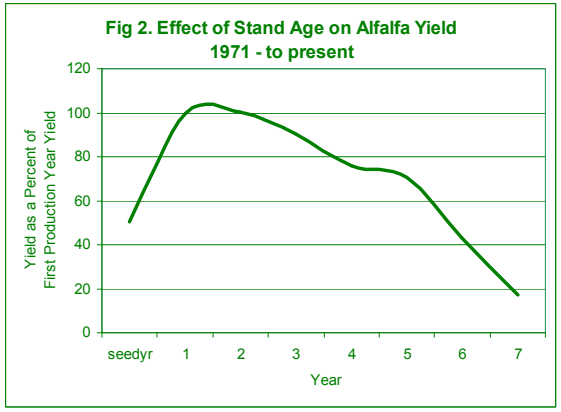
The figure 2 shows that, in university alfalfa variety trials, the average yield decline is 10% in the third production year and 24% in the fourth production year. Declines were generally greater east of the Mississippi and slightly less to the west of the Mississippi, unless under irrigation.

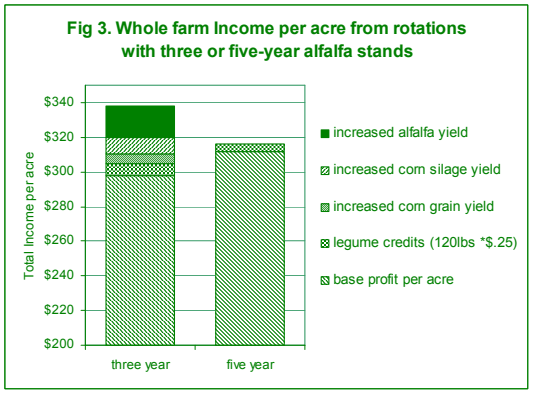


Alfalfa yield decline with advancing age means that farmers should consider turning over stands faster to stay in a high yield range.

We analyzed the economic value of short term alfalfa rotations compared to long term rotations on an average dairy farm. We did the comparison for the whole farm crop production and expressed the results on an average profit per acre. We analyzed for a farm with 300 acres of cropland (200 acres of alfalfa) and either three or five year alfalfa stands (including the establishment year). We used approximately state average yields, assuming the following:

- 200 acres of alfalfa
  - new seeding, 2 t/a yield at $80/tdm
  - established stand, 4 t/a yield at $80/t dm
- 60 acres corn for grain, 120 bu. at $2.50/bu
- 40 acres of corn silage, 18 t/a at $25/t

Average cost per acre is $14.03 more for 3-year rotations than 5-year rotations due to a larger acreage being seeded each year. Sometimes, as in this case, spending a little additional may cause a larger increase of income and result in greater profit.



When assuming the same alfalfa yield each production year, base income for the 3-year rotation is slightly less than for the 5-year rotation due to higher costs

and slightly less yield (because more land is in new seedings). However, increased legume credits and corn yield (corn following alfalfa yields 10% more than corn following corn) more than offset the difference.

The analysis also does not consider that many areas don't need root worm control on first year corn but do the second. This is an additional savings of $15 to $18 per acre. Additionally, there is increased value of higher forage quality from weed-free stands that occur in early production years ($16.20 figuring pure alfalfa over alfalfa/grass mixtures at $0.90 RFV/t).

Increased alfalfa yield from the shorter rotation will add $17 profit per acre to this system beyond the profits already shown – profit increases would be greater in higher yield ranges.

In summary, short rotations mean greater profit per acre because of:

- ✓ Higher alfalfa yield $17.00
- ✓ Higher forage quality $36.00
- ✓ Reduced pesticide use $15.00
- ✓ Greater nitrogen credits $ 2.25
- ✓ Increased corn yields $15.45

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Value of Short Rotations for Alfalfa Profitability