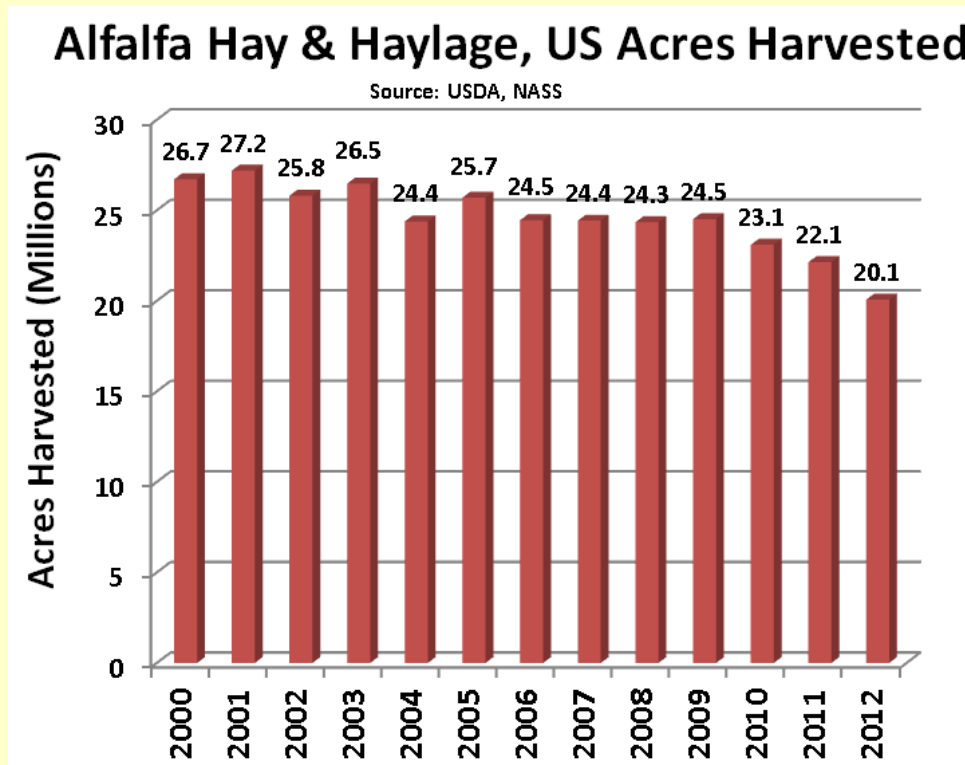


## IS A TURNING POINT FOR ALFALFA ON THE HORIZON?

*Robin Newell, NAFA Chair, DuPont Pioneer Forage Business Manager*

You've read many times in this newsletter that alfalfa is the nation's fourth largest crop. But did you know that total US alfalfa acreage has been in decline for the past decade? The National Ag Statistics Service (NASS) reports 2012 harvested alfalfa at just over 20 million acres, a 22% decline from a decade prior.<sup>1</sup> Production levels per acre were fairly static during that time period, meaning the productivity in terms of yield did not increase on the whole. This may be due in part to fewer newly seeded acres of alfalfa per year, leaving an increasing proportion of older presumably less productive stands as alfalfa acreage declined during the ten year period.



Much of the decline in alfalfa acres coincided with competition for acres driven by ethanol production in the US, particularly corn in the Midwest. Virtually all states where corn is a major crop experienced a decline in alfalfa acres. Over the same period, alfalfa acres increased among western intermountain states where corn is less prevalent. Hay producers in these cash hay growing areas responded to rising hay prices by establishing new stands. But that wasn't enough to maintain total acres in production across the entire US. What about the Upper Midwest and northeastern dairy states where alfalfa acreage declined over the past decade? Will alfalfa make a comeback in those areas?

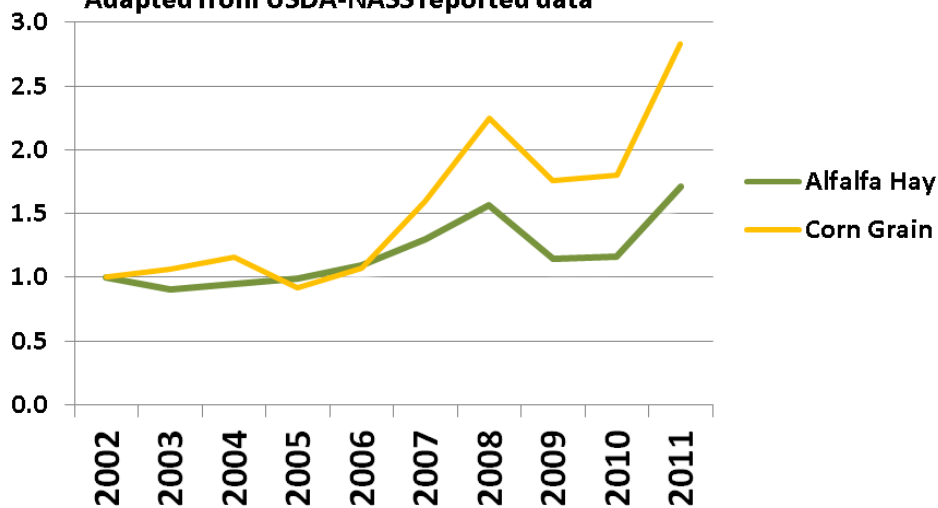
For some insight, let's recap work by UC-Davis Ag Economist Dr. Leslie Butler, who observed that new seedings for alfalfa hay production are influenced by competing crop prices during the prior two years. Alfalfa hay acres tend to decline when relative margins for competing crops exceed alfalfa, and vice versa. In essence, Dr. Butler's work noted a two year lag in alfalfa acres in response to the relative value of growing other crops.<sup>2</sup>

Alfalfa production may be slower to respond to market signals than production of annual crops. In addition to the lag described above, newly seeded acres represent only a minor portion of the total alfalfa acres in production. Furthermore, newly seeded stands aren't at full production in their first year. When all these factors are combined, you might reason that total alfalfa acres, potential production, and potentially hay commodity price, can take longer to respond to market signals for our perennial crop than markets for annual crops that adjust more quickly with the entire crop planted anew each year. Put another way, annual newly seeded acres of alfalfa may have less influence on current year total production and hay markets, but the hay production and market influence of those newly seeded alfalfa acres will be added to the collective total over a period of years to come.

If you look back over the past decade, you can observe corn and alfalfa hay prices trending higher beginning in 2005, with hay prices beginning to lag behind corn in late 2006. The corn price stayed on an increasing trend through 2013 albeit with some yearly fluctuation influenced by annual crop harvest size. Meanwhile hay price trends followed corn, but at a reduced relative level.

## Relative Commodity Price Comparison, US Indexed to 2005=1.0

Adapted from USDA-NASS reported data



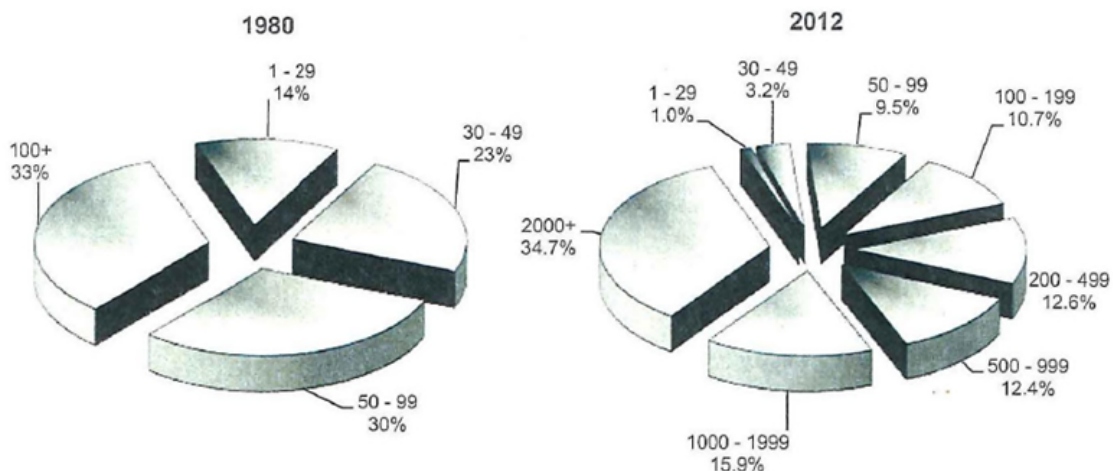
Now the current corn commodity market has declined from its earlier highs. If the downturn becomes a secular trend reversal in the long term corn market (which remains to be seen), then it may also lead to a turning point in market signals influencing alfalfa acreage. Will alfalfa acres stabilize or begin to rebound? How soon, and to what extent? And what are the implications for hay markets going forward?

To help you think about these questions and their implications in your local market, here are a few factors to consider:

1. There is a long-term trend in the dairy industry toward feeding more corn silage, for its high productive capacity both in the field and in the milk tank. Corn silage contains valuable energy from grain needed for milk production, and corn grain yields have been increasing over time. Furthermore, when yields are down in a given area, there's usually more acres of corn available to chop for silage if needed, not strictly limited by corn acres planted specifically with silage in mind.
2. Dairies continue to grow in size. Half the milk produced in the US now comes from herds exceeding 1,000 cows, just 2% of all dairy operations.<sup>3</sup> This trend could affect purchased hay and forage markets. Do large dairy farms in your market area purchase a high proportion of feed needs on average? Will they prefer to grow corn silage on their farmed land for the dry matter yield and efficiency of one harvest per season? How much hay or haylage will they grow and feed versus substitute commodities for protein and fiber? Will they purchase a greater proportion of hay not grown on their farm?

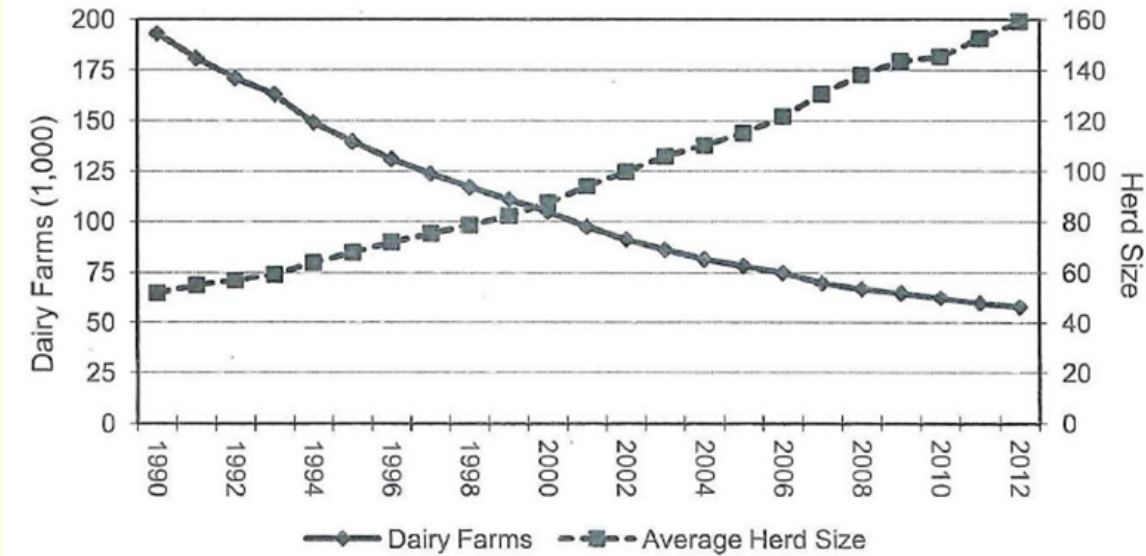
## Percent of U.S. Milk Production by Herd Size

National Milk Producers Federation. Dairy Data Highlights, October 2013.



# US Dairy Farms and Average Herd Size

National Milk Producers Federation, Dairy Data Highlights, 2013.



3. Distillers grains compete with alfalfa as a ration component to some degree (similar protein content but less physically effective fiber). Distillers grains are often priced more advantageously than alfalfa hay on a feed equivalent basis<sup>4</sup>. Availability has grown right along with ethanol production, but nutritionists usually limit the inclusion rate in ruminant rations due to fat content and other factors. Lower-fat versions are also available, but the fat reduction lowers the feed value. With recent proposed reductions in EPA-mandated biofuels production, the availability of distillers grains could decline if ethanol exports don't take up the potential slack in production capacity for ethanol producers. EPA's proposal is in a public comment phase, and a final decision isn't expected until early 2014. The EPA has the option to re-evaluate the ethanol mandate each year.
4. Environmental Stewardship issues are in the public dialogue, and we can expect continuing legislative proposals aimed at agriculture. Alfalfa can play a beneficial role as a very environmentally friendly crop. Alfalfa has great potential to reduce soil erosion on erodible land. Alfalfa helps reduce the carbon footprint of row crops in rotation through nitrogen fixation that has an N fertilizer sparing benefit for following crops. Alfalfa fixes a lot of rhizobium-sourced N to produce its high protein yield, but deep alfalfa roots also scavenge N from root depths that exceed other crops. N leaching has been shown to be much less under alfalfa than under row crops such as corn, and can play a role in reducing the nutrient load in our nation's waterways.<sup>5</sup>

Alfalfa is vital for meeting ruminant forage needs in this vast country. It requires no fertilizer N yet produces more protein per acre than other crops. Whether for home-grown forage or purchased hay, alfalfa is useful for both its high protein content and as part of the foundational forage requirement in ruminant rations. Whether you're an alfalfa grower, cattle feeder, or dairyman, you have a vested interest in alfalfa acreage and alfalfa production in the US. Thank you for supporting NAFA and your local, state or regional hay or seed grower's organization as we seek to promote our crop, and enjoy your front-row seat as market dynamics of the next few years unfold!

*Disclaimer: The views and information presented in this article are subject to change and potential bias, and must not be construed as market forecasts or commodity marketing advice.*

#### References:

1. National Agricultural Statistics Service (NASS), various reports found at [www.NASS.USDA.gov](http://www.NASS.USDA.gov)
2. Butler, Leslie J. "Factors Affecting the Supply, Demand and Price of Alfalfa." Davis, University of California: Department of Agricultural and Resource Economics, 2006.
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4. Normand R. St-Pierre. "Bargains and Rip-Offs: Assessing the Economic Value of Feedstuffs Using Market Prices." Department of Animal Sciences, The Ohio State University.) [dairy.ifas.ufl.edu/rms/2004/St\\_Pierre.pdf](http://dairy.ifas.ufl.edu/rms/2004/St_Pierre.pdf) See also: Cobanov, Branislov, and St-Pierre, Normand. Sesame software. The Ohio State University, Dept of Animal Sciences.
5. Baker, John, and Russelle, Michael P. USDA-ARS, St. Paul, MN. Personal discussion about the value and benefits of alfalfa in rotations. Feb 7, 2013.