

EMERGING ISSUES WITH FORAGES IN THE NORTHWEST

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ABSTRACT

Alfalfa, grass and mixed hay, and corn silage are major crops in acreage and economic importance for the Northwest and are used by and marketed for dairy cows, beef cattle, export, sheep, and horses. Irrigation is essential to the large production of forages in this region, although rain-fed production is significant in some areas. Drought, irrigation water shortages as agriculture competes with municipal and industrial uses, and politics such as endangered species protection will continue to influence the availability of water for irrigation in the Klamath, Snake, Columbia, and Missouri river basins. Alfalfa production management is trending toward longer stand life, frequent harvests, and more inputs.

Keywords: Alfalfa, *Medicago sativa*, hay production, hay acreage, forage, corn silage

ACREAGE AND PRODUCTION OF HAY

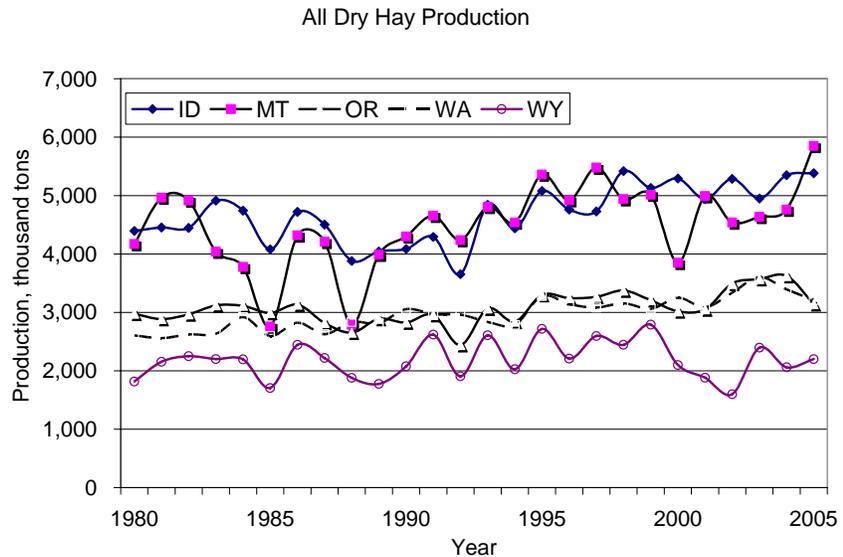
All Dry Hay—Montana had 2.75 million acres, the highest acreage of all dry hay in 2006 (Table 1). Washington had the highest average yield per acre, probably because of irrigation in the east and high rainfall in the Westside, and a longer growing season in the Columbia Basin than the more interior states. Montana had slightly more production in 2005 than Idaho. Idaho showed the highest value of production, because a large proportion is alfalfa hay and Idaho has a local dairy hay market. Production in the Northwest has increased slightly since 1980 (Figure 1). The value of production from the 5 states was \$1.88 trillion in 2005. The National Agricultural Statistics Service includes haylage in the relatively new classification of *Forage All (Dry Hay+Haylage)* but does not ask the question in many states yet.

Table 1. Statistics for all dry hay in the Northwest. Source: USDA—National Agricultural Statistics Service.

	Year	State					Northwest percent of US
		ID	MT	OR	WA	WY	
Area harvested, thousand acres	2006	1,500	2,750	1,080	790	1,110	12%
Average yield, tons/acre	2005	3.82	1.95	3.14	4.34	1.93	124%
Production, thousand tons	2005	5,382	5,850	3,140	3,210	2,202	13%
Value of production, million dollars	2005	\$ 587	\$ 414	\$ 355	\$ 366	\$ 162	15%

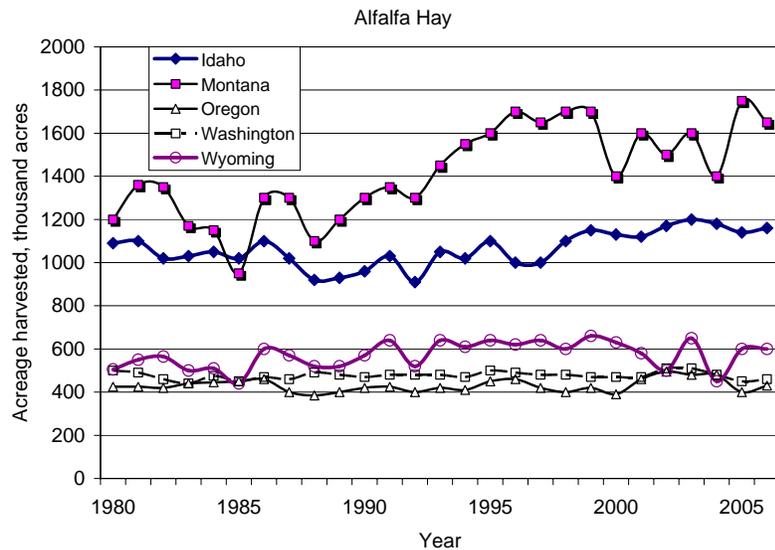
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Figure 1. The production (in 1,000 tons) of all hay harvested in Idaho, Montana, Oregon, Washington, and Wyoming from 1980 to 2005. Source: National Agricultural Statistics 2006.



Alfalfa Hay—The acreage of harvested alfalfa hay in the Northwest has been stable, except for Montana (Figure 2), for the last 25 years but production has risen because of better yields (Figure 3). Alfalfa Hay production in 2005 totaled 13.9 million acres for the Northwest. Irrigated alfalfa production was near normal for 2006 but dry-land alfalfa production suffered because of drought. Although Washington, Oregon and Idaho came out of severe drought in 2006, Montana and Wyoming remained in extreme drought in 2006. Reservoirs had ample irrigation storage in the Columbia and Snake rivers in 2006. In Idaho 79% of the harvested alfalfa is under irrigation and it produces 93% of the tonnage.

Figure 2. Alfalfa hay acreage from 1980 to 2006 by state in the Northwest. Source: USDA—National Agricultural Statistics Service.



Acreage versus Yield—The acreage of alfalfa and other hay has remained quite stable since 1920. The increased production is likely from increased yield of especially alfalfa.

Increase in alfalfa production at least in Idaho (Figure 4) beginning in the 1950's coincides with the development of sprinkler irrigation. Increased production is because of improved genetic materials, increase in irrigation on former dry-land areas, and more efficient harvest management and equipment. Effects of soil fertility management are unknown.

Figure 3. Alfalfa hay production from 1980 to 2006 by state in the Northwest. Source: USDA—National Agricultural Statistics Service.

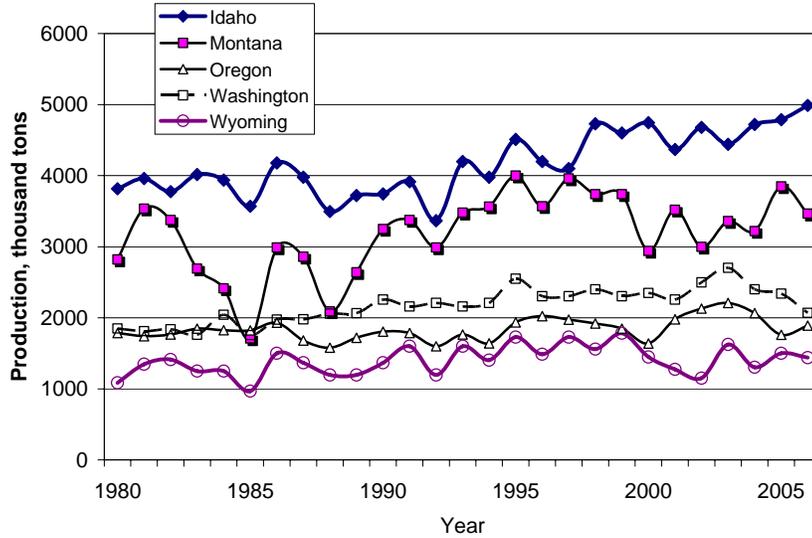


Figure 4. Alfalfa hay average yield from 1920 to 2005 in Idaho. Source: USDA—National Agricultural Statistics Service.

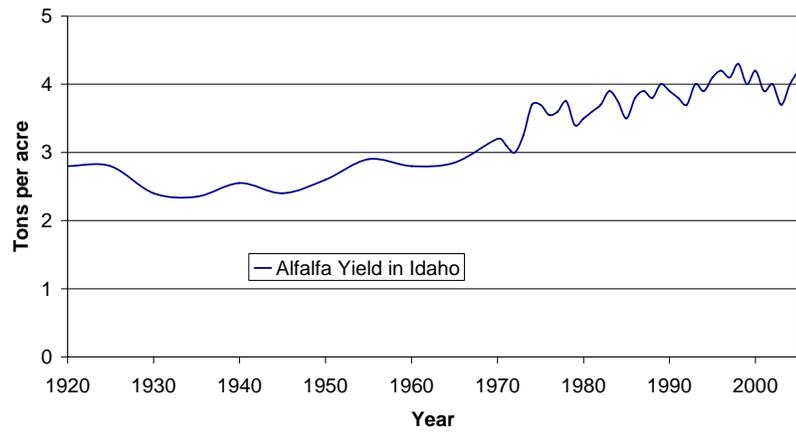
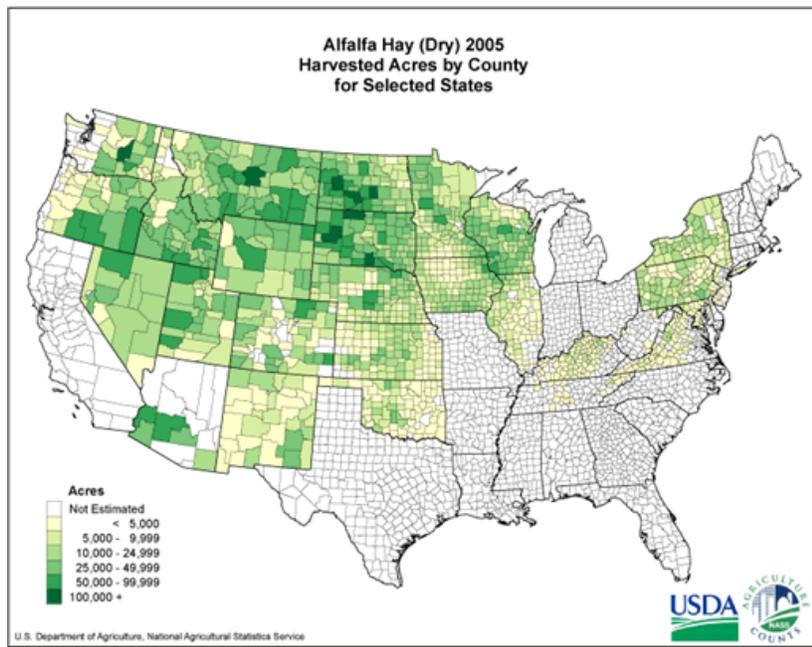


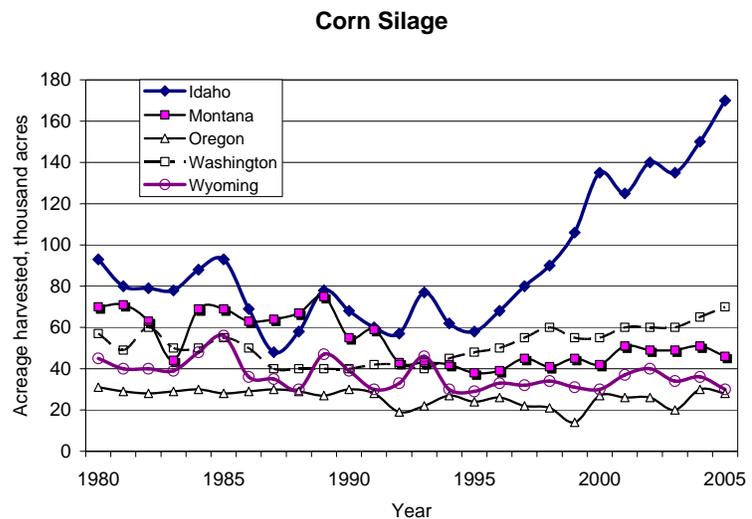
Figure 5. Alfalfa hay harvested acres by county in 2005. Source: USDA—National Agricultural Statistics Service.



TRENDS IN OTHER FORAGE PRODUCTION

Corn silage acreage has been steady from 1980 to 2005 for the Northwest with the exception of doubling in Idaho from 90,000 to nearly 180,000 acres (figure 6). The production of other hay and alternative forages seems to have increased the last decade more than the statistics show. The dairy industry has driven this use of forage. Much of the increased production was ensiled and often is a double-crop, e.g. triticale seeded into corn silage stubble and chopped in May. There appears to be a trend in what has been marginal wheat acreage for producers to convert the land to permanent grass for grazing or alfalfa for haying. The horse market has expanded greatly, especially export of alfalfa, grass, and mixed small bales and compressed bales shipped to the west coast and the southeast.

Figure 6. The acreage (in 1,000 acres) of corn silage harvested in from 1980 to 2006. Source: National Agricultural Statistics 2006.



TRENDS IN MARKETS: EXPORTS, DAIRY, BEEF, OTHER

Hay supplies are tight and may lead to higher prices. According to the Oct. 19 USDA Livestock, Dairy and Poultry Outlook report, U.S. hay supplies are likely to be fairly tight and expensive this winter, particularly if a more-normal winter develops following last year's mild one. National hay production was forecast at 147 million tons this year, down 2.4% from the 2005 total. May 1 hay stocks were down 23%, and dry conditions in many areas forced hay feeding this past summer. The September farm price of other hay averaged \$93/ton, up from \$78.90 a year ago. The alfalfa hay price averaged \$112/ton, up from \$106 in September 2005.

Observed trends:

- Rapid growth in Dairy (Table 2)
- Increasing market for organic forages
- Trend in baler use from 4 x 4 to 3 x 4 large bales for more efficient transportation.
- Limited use of wrapped unfermented bales put up at 25-30% moisture for more rapid harvesting and better leaf retention.
- Beef cattle are relying less on harvested hay because of economics and are relying more on grazed forages
- Export markets have improved since 2002 but not to record levels. About 6% of PNW hay production and nearly 20% of Washington's production is exported to the Pacific Rim. The export market helps support and stabilize domestic forage prices in the PNW.

- More global competition
- For sustained production, the true cost of exporting hay (the fertilizer nutrients) from farm to market needs to be realized by producers. Producers and regulators will be coming to grips with this one in the future. The more we mine our soils the more inputs will be required.

Table 2. Livestock inventories on January 1, 2006 for Northwestern states. Source: USDA—National Agricultural Statistics Service.

State	All cattle	Milk cows	Beef cows	Sheep
----- thousand head -----				
Washington	1,120	241	293	50
Oregon	1,440	121	619	220
Idaho	2,120	473	472	260
Montana	2,400	19	1,451	295
Wyoming	1,440	5	763	450
Total	8,520	859	3,598	1,275

Energy, Fertilizer and Transportation –Rises in energy costs will affect regional and international marketing of hay and forage products. Today, hay and forage customers may be located great distances from where the crop is grown and this continued practice is highly dependent upon continued cheap energy costs and reliable transportation. The harvest and transportation of high-moisture forages will cost significantly more in the future.

The rising energy costs will increase operating costs for irrigation and N fertilizer for forage production. This makes N credits more valuable for legumes in rotations but non-legume forages more expensive to produce.

EMERGING PROBLEMS: PESTS, CLIMATIC, ENVIRONMENTAL

Producers are specializing in alfalfa because it is a cash crop, and it requires specialized expensive equipment. This results in lack of adequate rotation intervals and the following issues and trends:

- We may be seeing more pest pressure
 - Thrips, clover root curculio, nematodes
 - In isolated areas armyworms, crickets, and grasshoppers are a problem
 - Gophers, ground squirrels, and voles are becoming more of a problem
 - Diseases may become more prevalent because of lack of crop rotation
- There is more “snake oil” than ever
 - Chemicals, biological products, and equipment are promoted as improving water infiltration, seedling establishment, forage quality, and pest control
 - Confirmation of response in university trials is a good indication of a products value

- Increase in N application on alfalfa
 - In part because fertilizers such as ammonium phosphate are less expensive forms of phosphorus than triple super phosphate
 - Some crop advisors are promoting N fertilization claiming a yield or quality response
 - University fertility studies have found no benefit of N fertilization when other crop management practices are adequate
- Forage testing accuracy and receiving a fair value for quality forage is still a problem
 - The tri-state hay test was developed by Washington, Oregon, and Idaho about 25 years ago and was probably the impetus for the National Forage Testing Assoc.
 - The recent developments of digestible neutral detergent fiber (dNDF), relative forage quality (RFQ) to replace RFV, and other methods to estimate the energy from forages will be evaluated and perhaps adopted
- Shortage of labor quality and quantity from competition from other industries that have higher salaries, benefits and set work schedules.

Pest Management Strategic Plan for Non-Rangeland Forages (excluding Alfalfa) in the Western States—This strategic plan is the summary of a workshop held on February 22-23, 2006 Boise, ID. A group of research and extension forage and pest specialists, forage producers, and regulatory personnel met and documented pest issues occurring in the Western US, excepting California. Research needs, needs for registration of pesticides, and integrated pest management programs to meet future production are documented. Lead authors are Tom Jahns, Ronda Hirnyck, and Lisa Downey. This strategic plan is sponsored by the Western Integrated Pest Management Center, which is funded by the United States Department of Agriculture, Cooperative State Research, Education and Extension Service, and the USDA Office of Pest Management Policy. This strategic plan is currently being reviewed. <http://www.ipmcenters.org>

EMERGING POLITICAL ISSUES

- Increase in anti-agriculture activism. There is organized resistance from the public in zoning hearings to siting dairy farms.
- Hay associations are effective in lobbying for legislative issues but struggle with low membership and lack a commission status compared to other commodities.
- The scheduled availability of genetically modified alfalfa in 2004 has controversial acceptance in regions where alfalfa may be exported to the Pacific Rim countries.
- Alfalfa has positive effects on the environment because of nutrient credits, nutrient uptake potential, erosion control, and wildlife benefits.
- More education is needed by new land settlers who migrated from the city and now are gentlemen farmers (small to even moderate sized operations)

Water for irrigation and power generation is critical—The irrigation water shortage in the Klamath Basin in 2001 has major implications on the future of alfalfa production in the region. Drought coupled with environmental activists demanding water for one endangered species or

another led to political scrambling and court action to attempt to appeal government agencies water restrictions.

The Northwest states face increased urban pressure for plentiful, clean water. The recovery of various salmonid species and domestic use will surely impact irrigation water use and availability in the future. Lowering surface water TMDL's leaving the farm will impart greater irrigation and farm nutrient/management practice changes in the future. Water rights have been over appropriated in many areas and as a result junior water rights will be restricted and some acres converted to conservation purposes.

REDUCED FUNDING FOR RESEARCH AND EDUCATION

For many years society had provided agricultural universities with hard dollar support to teach the next generation in the classroom, to continue teaching adults through Extension and to solve problems through research. With the shrinking of state budgets and recent large deficits, those days are largely in the past. Hay and forage products have no organized national or state commissions to support these endeavors through a check-off or other self-imposed annual contribution. In a today's 'user fees' based society this lack of commodity funding support in alfalfa and forages will only continue to weaken and reduce the research and educational information producers need. Hay and forages are several steps away from the final end user of our products since these must be marketed through an animal for either food or pleasure. Various commodities, i.e. wheat, have well-organized groups and commissions that annually fund research and educational programs. Until alfalfa and forage producers are willing to support their commodity; that serves as the major feedstuff for all ruminants and horses, that occupies millions of acres in the west, that is essential for maintaining environmental quality, the university support for these crops will continue to be reduced to you.