

EMERGING ISSUES WITH ALFALFA IN THE PACIFIC NORTHWEST

Glenn E. Shewmaker, Steve C. Fransen, and David A. Hannaway¹

ABSTRACT

Alfalfa is a major crop in acreage and economic importance for the Pacific Northwest and is used by and marketed for dairy cows, beef cattle, and export. Irrigation is essential to the large production of alfalfa in this region, although dry-land production is significant. Drought, power buy-backs, and politics such as endangered species protection will continue to influence the availability of water for irrigation in the Klamath, Snake, and Columbia basins. Alfalfa production management is trending toward longer stand life, frequent harvests, and more inputs.

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

ACREAGE AND PRODUCTION OF HAY

Alfalfa Hay -- The acreage of harvested alfalfa hay in the Pacific Northwest has been stable for the last 25 years but production has risen because of better yields (Figure 1). Harvested alfalfa acreage in 2002 was estimated at 470,000 in Washington, 394,000 in Oregon, and 1,120,000 acres in Idaho to total 1.98 million acres. Alfalfa Hay production in 2001 was estimated at 2.35 (Washington), 1.74 (Oregon), and 4.37 million tons in Idaho. Irrigated alfalfa production was expected to be near normal for 2002 but dry-land alfalfa production suffered because of drought in the Columbia and Snake River Basins. Variation in yield from dry-land alfalfa hay production is largely explained by spring precipitation in Idaho, e.g. Idaho yield dropped from 4.2 tons/acre in 2000 to 3.9 tons/acre in the drought year of 2001. In Idaho 79% of the harvested alfalfa is under irrigation and it produces 93% of the tonnage.

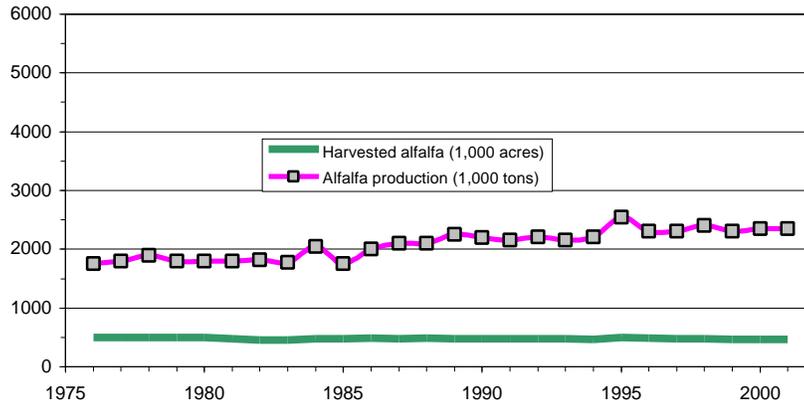
Alfalfa hay production is concentrated in the top five counties of Washington, Oregon, and Idaho (Figure 2 and Table 1). In the Columbia and Snake Basins, with the exception of Jefferson County in Idaho, alfalfa acreage is in proximity to large dairy operations.

Other Hay -- Harvested acreage of other hay has dropped from 370,000 to 320,000 acres in Washington from 1976 to 2001 (Figure 2). Oregon has the largest acreage of other hay and increased from 640,000 to 649,000 acres from 1976 to 2001. Other hay harvested in Idaho increased slightly in the last 25 years from 290,000 to 300,000 acres. Other hay production in 2001 was 986,000 tons (Washington), 1,195,000 tons (Oregon), and 600,000 tons (Idaho).

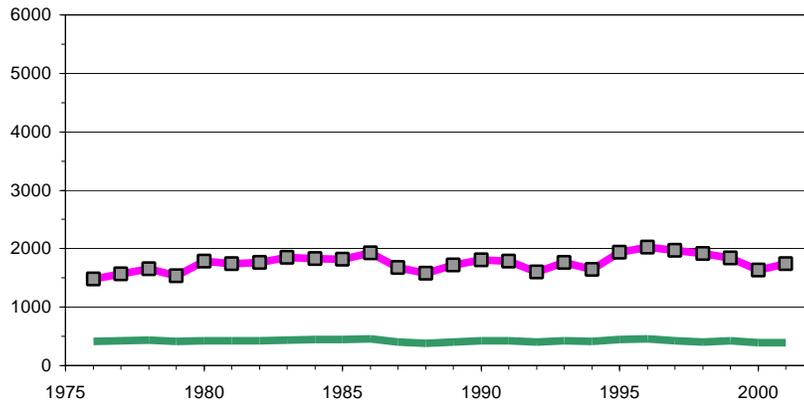
Acreage versus Yield -- Since the acreage of alfalfa and other hay has remained quite stable since 1920, the reason for the increased production is increased yield of especially alfalfa. Increase in alfalfa production at least in Idaho (Figure 4) beginning in the 1950's coincides with the development 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.

¹ G. Shewmaker, Univ. of Idaho Twin Falls R&E Center, P.O. Box 1827, Twin Falls, ID 83303-1827; S. Fransen, Washington State Univ. Irrigated Ag. R&E Center, 24106 N. Bunn Road, Prosser, WA 99350-8694; D. Hannaway, Oregon State Univ., Corvallis, OR 97331-3002. Published **In:** Proceedings, Western Alfalfa and Forage Conference, 11-12 December 2002, Reno, NV, UC Cooperative Extension, Univ. of California, Davis.

Washington Alfalfa Hay



Oregon Alfalfa Hay



Idaho Alfalfa Hay

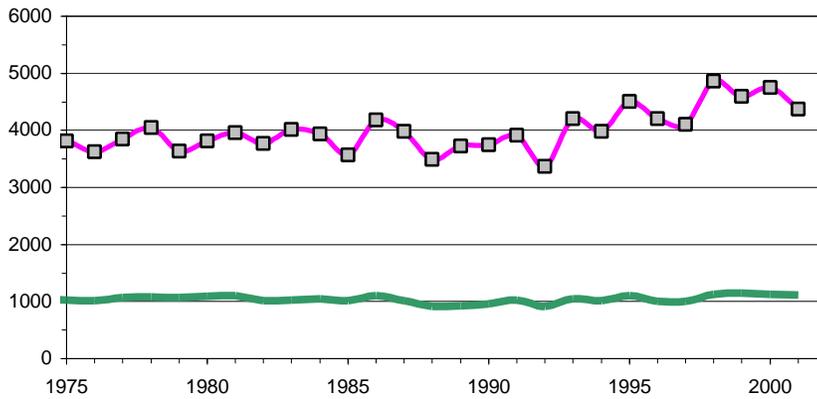


Figure 1. The acreage (in 1,000 acres) and total production (in 1,000 tons) of alfalfa hay harvested in Washington, Oregon, and Idaho from 1976 to 2001. Source: National Agricultural Statistics 2001.

Alfalfa Acreage in 1999 Harvested by County
Source: USDA-National Agricultural Statistics Service

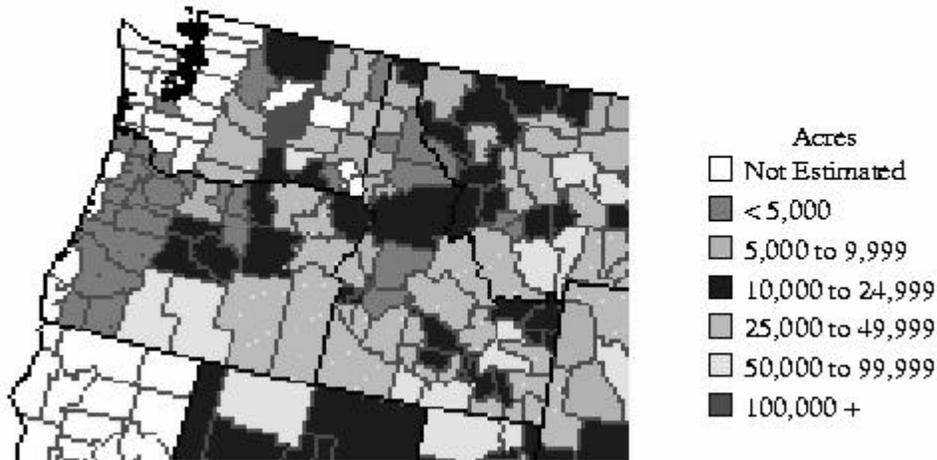
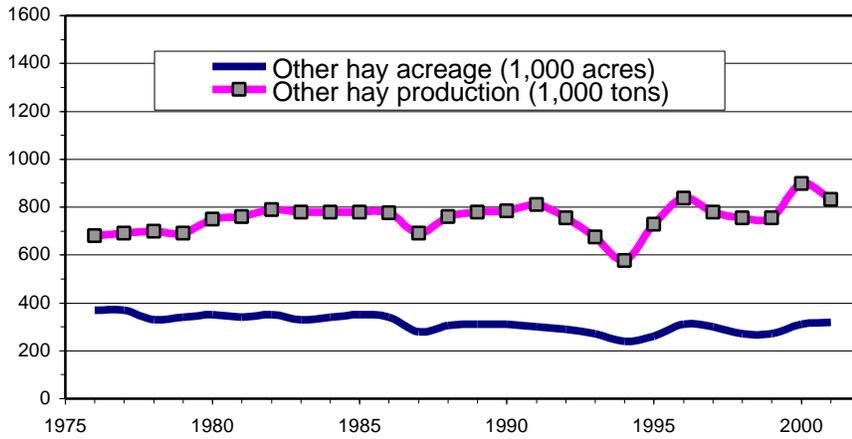


Figure 2. Alfalfa acreage in 1999 by county in the Pacific Northwest. Source: USDA—National Agricultural Statistics Service.

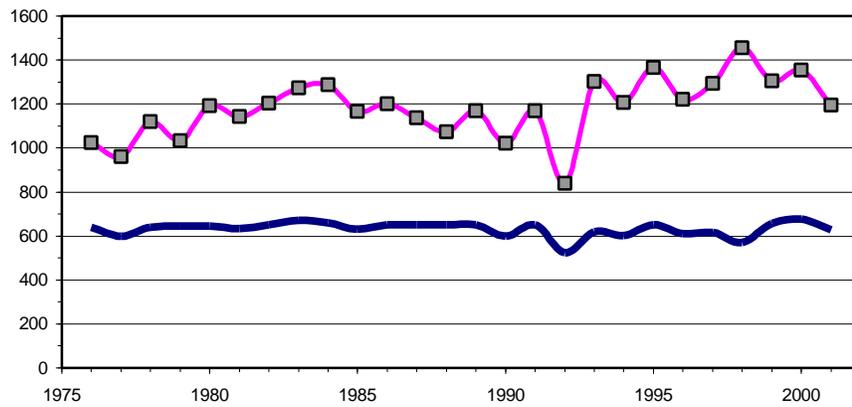
Table 1. Top five counties in the Pacific Northwest for alfalfa acreage. Source: USDA—National Agricultural Statistics Service.

State and county	Acreage harvested
<u>Washington</u>	477,000
Grant	126,700
Franklin	74,300
Yakima	35,900
Adams	25,600
Benton	14,200
<u>Oregon</u>	420,000
Lake	55,000
Klamath	50,000
Malheur	48,000
Harney	40,000
Umatilla	40,000
<u>Idaho</u>	1,130,000
Jefferson	98,000
Twin Falls	69,200
Canyon	50,000
Owyhee	49,700
Jerome	48,000

Washington Other Hay



Oregon Other Hay



Idaho Other Hay

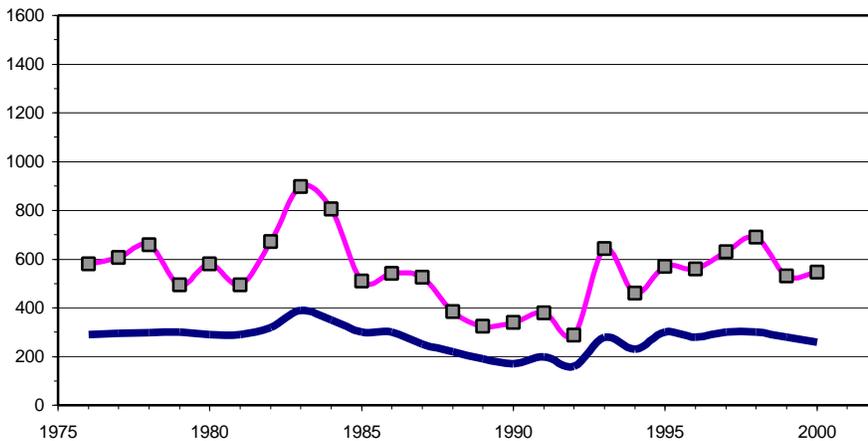


Figure 3. The acreage (in 1,000 acres) and total production (in 1,000 tons) of other hay harvested in Washington, Oregon, and Idaho from 1976 to 2001. Source: National Agricultural Statistics 2001.

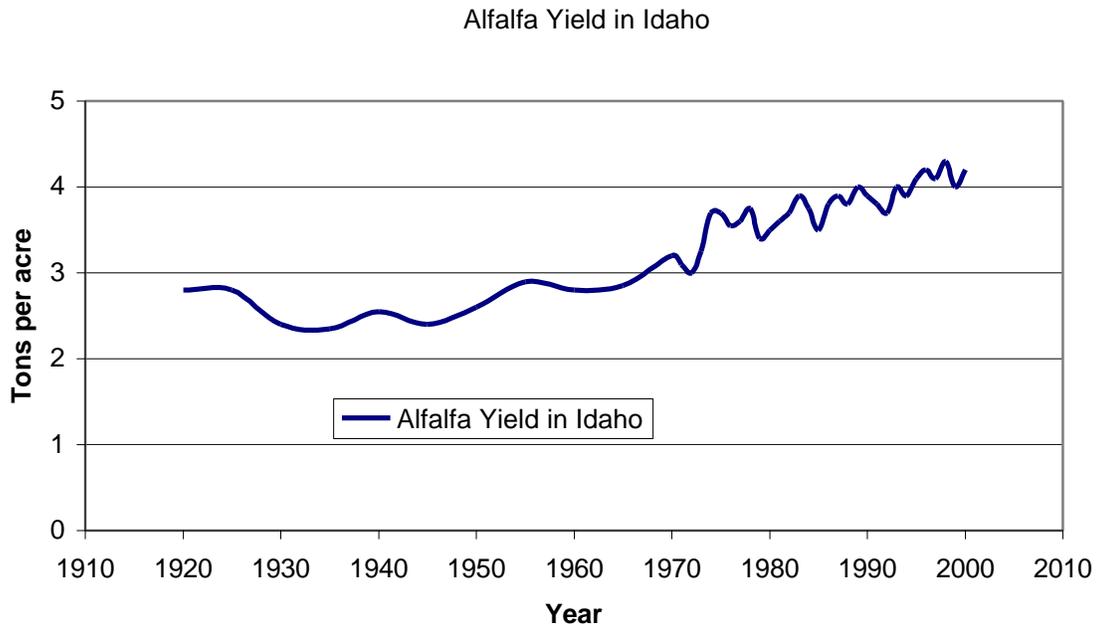


Figure 4. Trend in yield per acre for alfalfa hay produced in Idaho. Source: Idaho Agricultural Statistics 2000, Boise, Idaho.

TRENDS IN OTHER FORAGE PRODUCTION

Corn silage acreage has decreased in Oregon from 33,000 to 23,700 acres since 1976 but doubled in Idaho from 90,000 to 180,000 acres. Washington silage corn was 55,000 acres in 2000. The production of other hay 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. In the summer of 2002 a lot of wheat acres on dry-land or from the power buy-back program were either grazed or baled as hay. The statistics service may have reported them as wheat harvested acres rather than other hay. 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.

TRENDS IN MARKETS: EXPORTS, DAIRY, BEEF, OTHER

- Rapid growth in Dairy
 - Washington: 247,000 cows (2000)
 - Oregon: 105,000 cows (2002)
 - Idaho: 377,000 cows, now 5th in nation (2002)
- Beef cattle are relying less on harvested hay because of economics and are relying more on grazed forages
- Drought
 - Lack of rain for dry-land alfalfa
 - Lack or increased cost of power for irrigation
- Shift from wheat grain production to cereal forage and alfalfa

- Decrease in Exports
 - Soft Pacific-rim economy
 - More global competition

Energy And Transportation – we enjoy relatively cheap energy costs that allow long distance movement of hay and forage products. Future rises in energy costs will affect regional and international marketing of hay and forage products. The current West Coast port problems will be settled but will re-emerge in a few years. Today, hay and forage customers may live great distances from where the crop is grown and this continued practice is highly dependent upon continued cheap energy costs and reliable transportation.

EMERGING PROBLEMS: PESTS, CLIMATIC, ENVIRONMENTAL

- Producers want stands to stay in longer, 6 years or more
 - Alfalfa is now a cash crop, not a rotation crop
 - Following an alfalfa crop with another alfalfa crop
 - Producers are specializing in alfalfa
- We may be seeing more pest pressure
 - Thrips, clover root curculio, nematodes
 - In isolated areas armyworms, crickets, and grasshoppers are a problem
 - Gophers 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

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.

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.

Water fights will not be limited to just the Klamath Basin. According to USDA's National Agricultural Statistics Service (NASS), alfalfa hay acreage in Idaho declined by 10,000 acres (to 1.12 million acres) during 2001. Other hay acreage increased 40,000 acres. As a result of water shortages, the electrical power buyback program and dry conditions during the growing season, yields declined by a half ton per acre to 3.7 tons/acre and 1.6 tons/acre for alfalfa and other hay, respectively. Total alfalfa production fell from 4.7 million tons to 4.1 million tons and other hay declined to 480,000 tons.

Washington, Oregon, and Idaho 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.

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 you 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.