

# Farm Business Management Update

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## The Growth of the Virginia Wine Industry: Is it Sustainable?

**Gustavo Ferreira**, Extension Economist, Department of Agricultural and Applied Economics, Virginia Tech

**Introduction:** The Virginia wine industry has gone through a period of continuous expansion with growing number of wineries and increasing demand for Virginia wine. Today, Virginia is the nation's fifth largest state in number of wineries and sixth largest wine grape producer (Virginia Wine Board, 2012). While recent developments in this industry have been impressive and promising, now is the time to begin assessing the sustainability of this growth in the future. Consequently, this article evaluates the performance of the Virginia wine industry from both a supply and demand perspective. In other words, it is important to assess whether or not Virginia vineyards and wineries will produce enough grapes and wine to maintain the status quo or sustain any future expansion. On the other hand, it is important to identify some of the ongoing dynamics in the wine consumer market, because demand for Virginia wines will ultimately determine the success or failure of this industry.



**Supply Side:** The production of Virginia wine has relied heavily on wine grapes grown in the state (Virginia Wine Board, 2012). Consequently, any expansion in wine production depends on the ability of regional producers to deliver sufficient quantity of good quality grapes. This will not only contribute to the building of a reputation of quality wines, but could also help Virginia wineries to capitalize on the “buying local” market trend. Table 1 shows statistics of grape production, acreage allocated to grape production and the yields in Virginia for the past twelve years. It is important to note that this statistic aggregates all types of grapes that may be produced for different purposes (i.e. for wine, jellies or juice production, or simply for direct consumption, etc...). Total grape production in Virginia has increased from 4,200 tons in 2001 to 6,900 tons in 2012, which represents a 64 percent increase. The total number of acres used for grape production also experienced a significant increase of almost 53 percent for the same period of time. Finally, the yield per acre has averaged 2.47 tons per acre and has remained fairly constant over time.

**Table 1. Virginia Grape Production, Acreage and Yields (2001-2012)**

<b>Year</b>	<b>Bearing Acreage (all</b>		<b>Yield per Acre</b>
	<b>Total Production (tons)</b>	<b>types of grapes)</b>	
2001	4,200	1,700	2.47
2002	4,600	1,800	2.56
2003	3,600	1,900	1.89
2004	3,700	1,900	1.95
2005	5,600	2,000	2.80
2006	6,200	2,100	2.95
2007	5,600	2,400	2.33
2008	7,000	2,500	2.80
2009	8,600	2,900	2.97
2010	6,600	2,700	2.44
2011	6,900	2,600	2.65
2012	6,900	2,600	2.65

Source: USDA Non-citrus Fruits and Nuts 2001-2012 Summaries

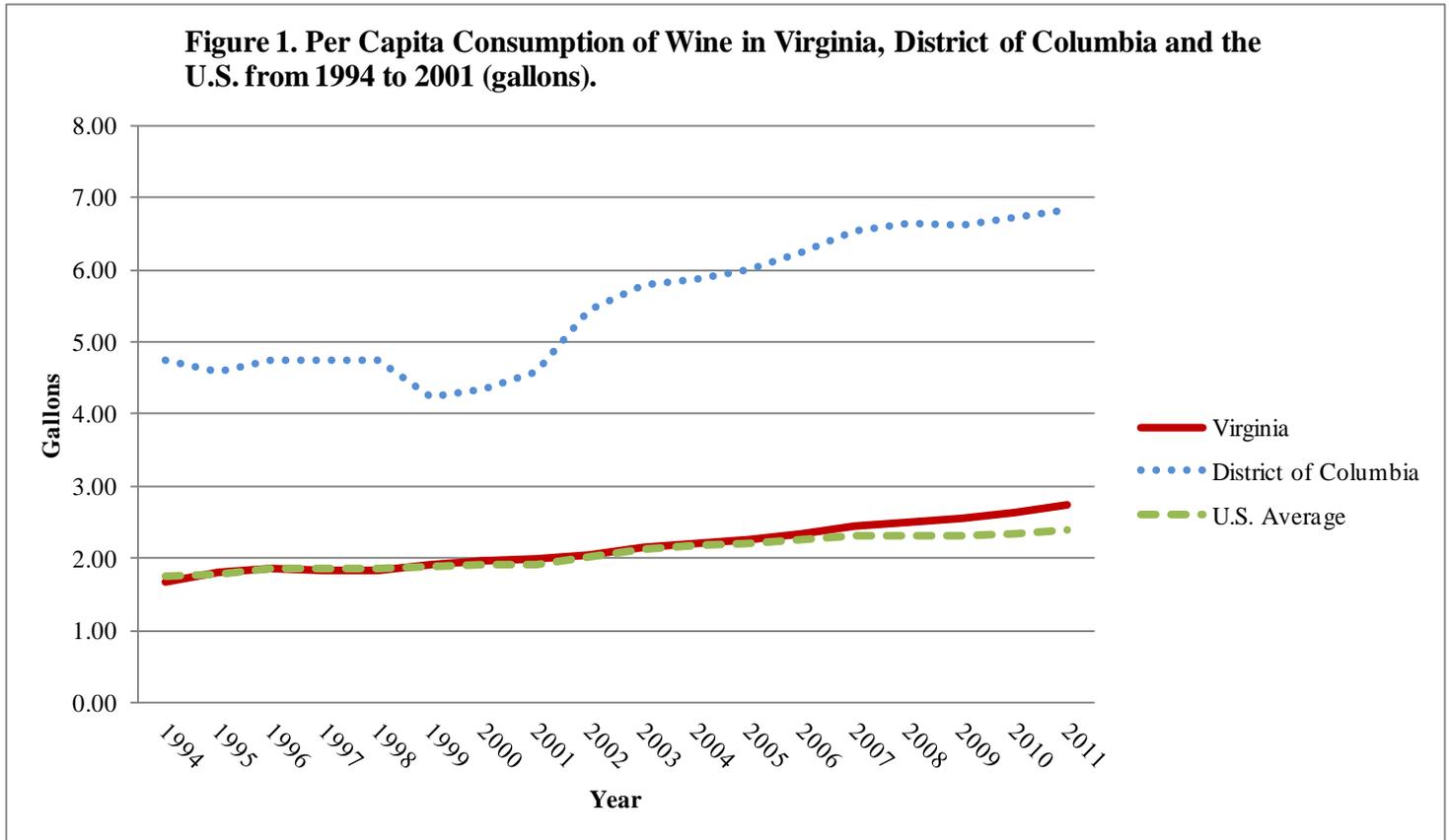
Another well publicized achievement of the Virginia wine industry has been the continuous growth in the number of wineries. Table 2 shows how in less than thirty years the number of wineries in Virginia went from 29 in 1985 to 229 in 2013 – an increase of 200 wineries. Furthermore, these figures also reflect the closing of some wineries overtime, thus reinforcing the idea of an ongoing momentum among winery operations.

**Table 2. Number of Virginia Wineries (1985-2013).**

<b>Year</b>	<b>Number of VA wineries</b>
1985	29
1990	40
1995	47
2000	64
2005	129
2010	193
2011	204
2012	206
2013	229

Source: TTB

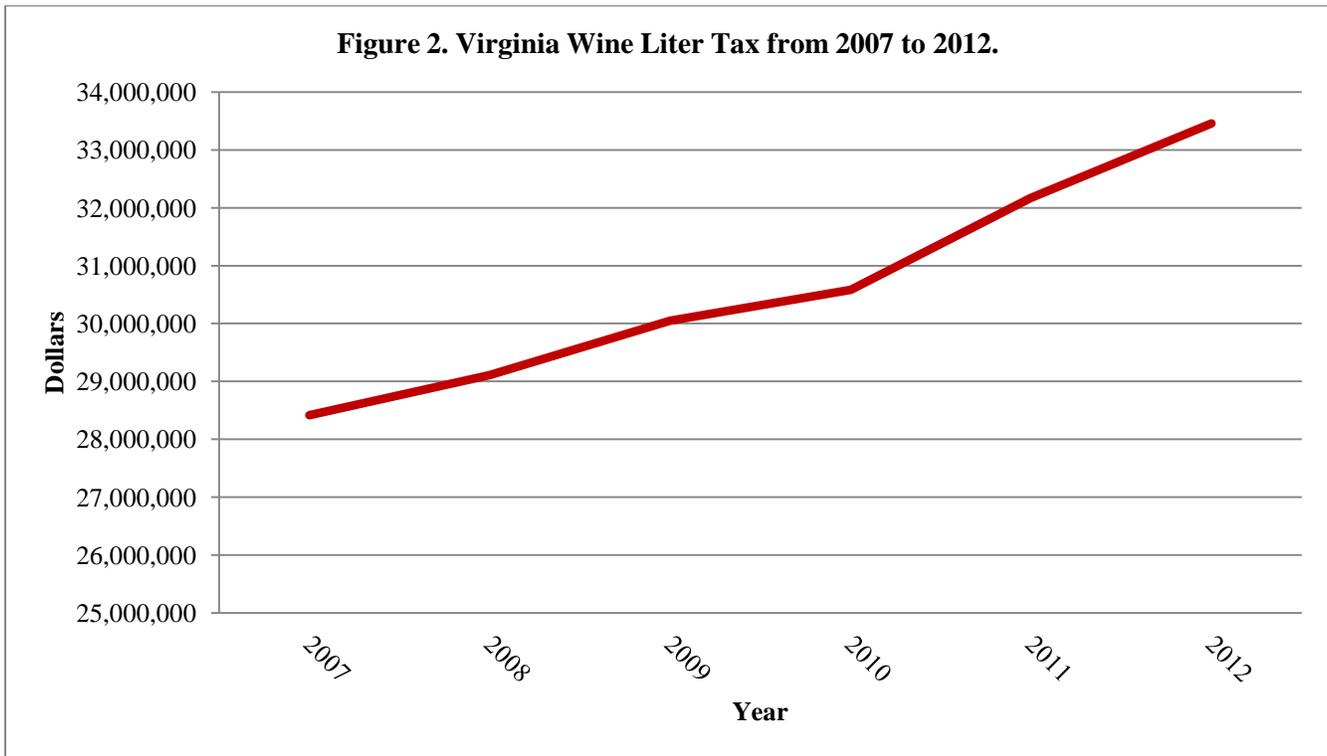
**Demand Side:** While conditions for the supply and production sides may justify some optimism, it is important to identify and interpret wine consumption and sales market trends in Virginia. According to the Beer Institute (2011), and as shown in Figure 1, wine consumption per capita in Virginia has steadily increased for the past eighteen years. In 2011, per capita consumption of wine in Virginia surpassed the national average with two and half gallons – a 63 percent increase compared to 1994. Although this statistic does not differentiate between the consumption of wines from different regions and countries, this positive trend represents good news for Virginia wineries because of their great dependence on local sales. More specifically, 65 percent of Virginia wineries’ business is linked to on-premise sales (MFK, 2007). Another important fact is that the District of Columbia (D.C.) ranks number one in the nation in terms of per capita wine consumption with almost seven gallons in 2011. Because of its geographic proximity, the D.C. market represents a promising opportunity for many Virginia wineries.



Source: The Beer Institute

Another demand indicator for Virginia wine is the wine liter tax. The wine liter tax is collected from the sale of wine in Virginia, and it is applied at a rate of \$3.60 per case of wine. A tax collection report is issued annually in a letter from the Department of Alcoholic Beverage Control to the House Appropriations Committee, the Senate Finance Committee and the Virginia Wine Board. The revenues from this tax are a good tool to monitor wine sales in Virginia. Figure 2 shows a clear upward trend in tax collection, which indicates an increase in overall wine sales - revenues from the wine liter tax increased by almost 18 percent between 2007 and 2012. Unfortunately, the overall wine liter tax revenues aggregate revenues from both out-of-state and Virginia wine sales.

**Figure 2. Virginia Wine Liter Tax from 2007 to 2012.**



Source: Virginia Department of Alcoholic Beverage Control

A more careful analysis of these revenues reveals that Virginia wines have a very small market share of total wine sales within the state. Table 3 shows that, in 2011, Virginia wine sales accounted for only six percent of total wine sales in the state. This is particularly troubling given that the vast majority of Virginia wine bottles are sold in the state, and in particular, at the tasting-room. On the other hand, this presents an opportunity for astute managers to gain market share from out of state wines.

**Table 3. Wine Liter Tax (WLT) Revenues (2009-2011)**

Year	Total WLT revenues (\$)	WLT revenues from Virginia wines(\$)	Virginia wines market share (%)
2009	30,050,875	1,428,216	5
2010	30,580,004	1,604,387	5
2011	32,171,151	1,800,000	6

Source: Virginia ABC

Table 4 also confirms a positive trend of Virginia wine sales. In this case, the number of wine cases sold has experienced an impressive growth from little over 35,000 cases in 1985 to close to half-a-million in 2012. Again, a more detail analysis reveals some intrinsic weakness of the Virginia wine industry. More specifically, Virginia wine industry remains quite insular and very dependent on within state sales. For instance, out of the 485,000 cases of Virginia wine sold in 2012, only 14,033 cases were sold in other states and 3,300 were exported (Richmond Times-Dispatch, 2013). Finally, this increase in sales is likely to be the result of improved quality of Virginia wines combined

**Table 4. Number of Cases Sold of Virginia Wine (1985-2012)**

Year	Number of Cases
1985	35,325
1990	89,164
1995	175,138
2000	238,203
2005	320,171
2010	439,520
2011	462,112
2012	485,000

Source: TTB

with the support from the state government. The promotion of the Virginia wine industry - domestically and internationally - has been one of Governor McDonnell's many economic development and job creation initiatives.

**Conclusion:** Overall, the data analyzed in this paper support the idea that the Virginia wine industry may be on a sustainable growth path. This seems to be confirmed by the growing numbers of wineries and increasing grape production. However, production has been stagnant since 2008. A quick analysis of wine consumption and wine sales statistics for Virginia reveals some promising trends, although a more detailed look also exposes some shortcomings in the industry, namely its small market share in the Virginia market – even though most sales occur within the state. The future of the Virginia wine industry will need a reliable supply of locally produced quality grapes, and Virginia wine must continue to penetrate new markets and carve a larger in-state market share.

## References

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## The Management Calendar

By **Gordon Groover** Extension Economist, Department of Agricultural & Applied Economics, Virginia Tech

Listed below are the items that need to be included on the farm business managers' calendar for spring of 2013.

- Make sure your Virginia state income taxes are postmarked by May 1.
- Review first quarter livestock records and compare them to last year's; look for problems and successes.
- Livestock producers should develop a detailed feed budget each year. Include current feed costs, estimate this year's production under average and drought conditions, and estimate demand until a full year out. Deficits should be addressed now. First, look locally for alternatives. For example, can you contract with a neighbor to buy their forages or grains, can you rent additional land, can you work with a grain farmer to harvest his grain crop as silage, can you buy grain at harvest at a discount, or consider high moisture grain? Second, if you cannot find local solutions, then look to reputable brokers for forage and try to line up part of your supply needs this spring. As the season progresses, keep the budget up-to-date to make sure you have covered your feed demand for the next year. Conversely, if you expect a surplus begin to consider alternatives to increase cash income and cash flow.
- Follow up with your lender to review and update your line-of-credit needs because higher feed, fuel, fertilizer, and input other prices may strain previous estimates.
- Prepare your crop record keeping system for a new year, updating soil tests and reviewing and problems from last season.
- Update your marketing plan by collecting information on prices and world market situations. Be sure to check with your local Farm Service Agency for changes in government programs and signup deadlines. Review USDA and other crop and price forecasts. You can receive notification of all USDA reports now via many different media. See the following web site for details: [www.usda.gov/wps/portal/usda/usdahome?navid=USDA\\_STR](http://www.usda.gov/wps/portal/usda/usdahome?navid=USDA_STR)

Listed below are the items that need to be included on the farm business managers' reading list and calendar for the next two months.

- Interested in a Microloan? Yes, Take a look at the Farm Service Agency (FSA) web site and look for the section titled “Farm Operating Loans & Microloans,” visit your local FSA office, or click here [Microloans](#).
  - Overview of the program: FSA developed the Microloan (ML) program to better serve the unique financial operating needs of beginning, niche and the smallest of family farm operations by modifying its Operating Loan (OL) application, eligibility and security requirements. The program will offer more flexible access to credit and will serve as an attractive loan alternative for smaller farming operations like specialty crop producers and operators of community supported agriculture (CSA). These smaller farms, including non-traditional farm operations, often face limited financing options.
  - Microloans can be used for all approved operating expenses as authorized by the FSA Operating Loan Program, including but not limited to:
    - Initial start-up expenses;
    - Annual expenses such as seed, fertilizer, utilities, land rents;
    - Marketing and distribution expenses;
    - Family living expenses;
    - Purchase of livestock, equipment, and other materials essential to farm operations;
    - Minor farm improvements such as wells and coolers.
    - Hoop houses to extend the growing season;
    - Essential tools;
    - Irrigation;
    - Delivery vehicles
- The National Ag Risk Library is a repository of excellent educational materials for farmers, educators, and service providers to agriculture and is found at [www.agrisk.umn.edu](http://www.agrisk.umn.edu). Some recent additions to the library are:
  - Farm employee management: employment eligibility verification - the basics of form I-9 compliance. Author Melissa O'Rourke, Iowa State. <http://agrisk.umn.edu/Library/Display.aspx?RecID=4917&NEW=1>.
  - Flexible Farm Lease Agreements. Author William Edwards, Iowa State. <http://agrisk.umn.edu/Library/Display.aspx?RecID=4919&NEW=1>
- Need to find information about Virginia’s Population, Income, Food Insecurity, Education, and Employment, Federal Funds, Organic Agriculture, Farm Characteristics, and much more (links to county-level data are included when available). Then follow this link to USDA-Economic Research Service State Fact Sheets: <http://www.ers.usda.gov/data-products/state-fact-sheets.aspx#.UVrY2FeQMmx>.

## How Grain is Transported in the United States

By Peter Caffarelli,<sup>1</sup> Gustavo Ferreira,<sup>2</sup> Gordon Groover,<sup>3</sup> and Kathryn Boys<sup>4</sup>

An efficient grain transportation system allows U.S. farmers and processors to experience lower shipping costs, which can result in lower food prices for U.S. consumers and competitive prices for U.S. producers in international markets.<sup>5</sup> Transportation of U.S. grain primarily occurs by three methods or “modes”: truck, rail, and barge. The purpose of this article is to 1) highlight the trends in modal shares of aggregated U.S. grain and 2) examine the specific trends in modal shares for U.S. corn, soybeans, wheat, and barley—Virginia’s main grain crops.

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<sup>5</sup> Source: “Transportation of U.S. Grains: A Modal Share Analysis,” United States Department of Agriculture, Agricultural Marketing Service (March 2012): <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5097327>.

Of the grains grown in the United States, barley, corn, sorghum, soybeans, and wheat are the primary grains shipped domestically and exported.<sup>6</sup> Figure 1 displays the modal shares of “all” U.S. grain shipments from 1984 to 2010, where “all” includes barley, corn, sorghum, soybeans, and wheat. Importantly, for this and subsequent analysis, modal share data come from the United States Department of Agriculture’s Agricultural Marketing Service and are derived by the tonnage shipped for each method.<sup>7</sup>

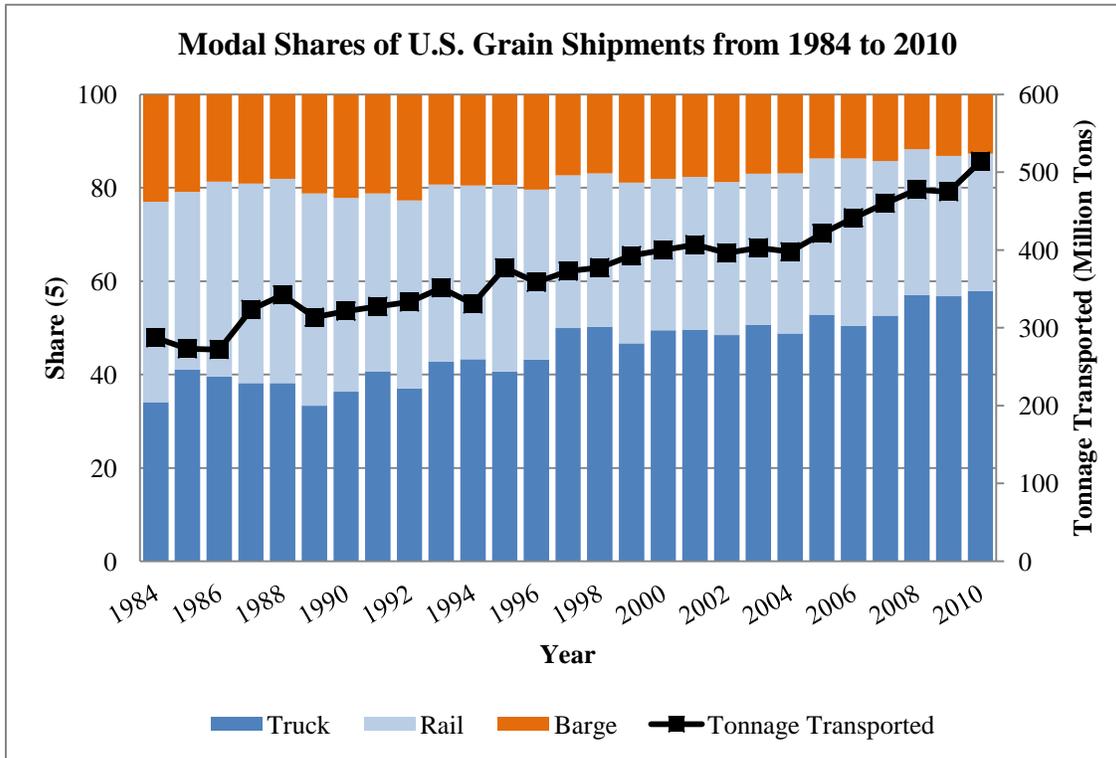


Figure 1: Modal shares of all grains in the United States from 1984 to 2010.

Source: United States Department of Agriculture, Agricultural Marketing Service.

Two trends should be noted from Figure 1. First, the amount of grain transported has consistently increased since the 1980’s. Second, displacing rail and barge, trucking grain has claimed an increasing share of total grain transported.

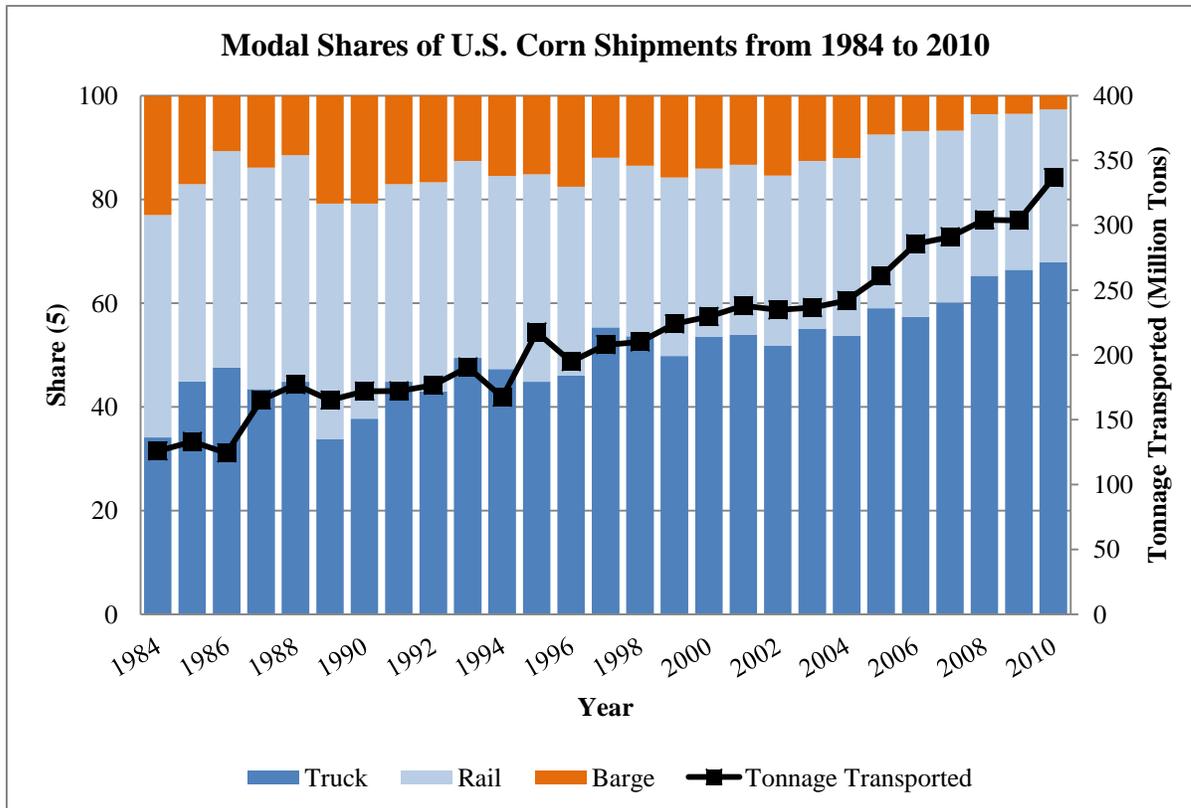
Figure 2 highlights the shares of truck, rail, and barge for U.S. corn shipments from 1984 to 2010. Similar to the trend of combined grains, the tonnage of corn shipped has increased over time. Moreover, with a declining reliance on barge, the share of trucks in moving corn demonstrates a similar trend.

<sup>6</sup> According to the USDA publication, “Transportation of U.S. Grains,” “rye and oats were taken out...because of unreliability due to small volumes, which total less than 1 percent of all grain movements.”

<sup>7</sup> To download data, visit:

<http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateA&navID=AgriculturalTransportation&leftNav=AgriculturalTransportation&page=ATModalShareReport&>.

Figure 2: Modal shares of corn in the United States from 1984 to 2010.



Source: United States Department of Agriculture, Agricultural Marketing Service.

Similar to the trend of combined grains, the tonnage of corn shipped has increased over time. Moreover, with a declining reliance on barge, the share of trucks in moving corn demonstrates an upward trend.

Figure 3 plots the shares of truck, rail, and barge in soybean transportation from 1984 to 2010. The impact of soybeans on the transportation system has typically increased since the 1980's. Also, similar to corn, trucking is the chief method of moving soybeans in the United States. However, as a point of difference, barge has a greater share in soybean transportation and has remained constant over time.

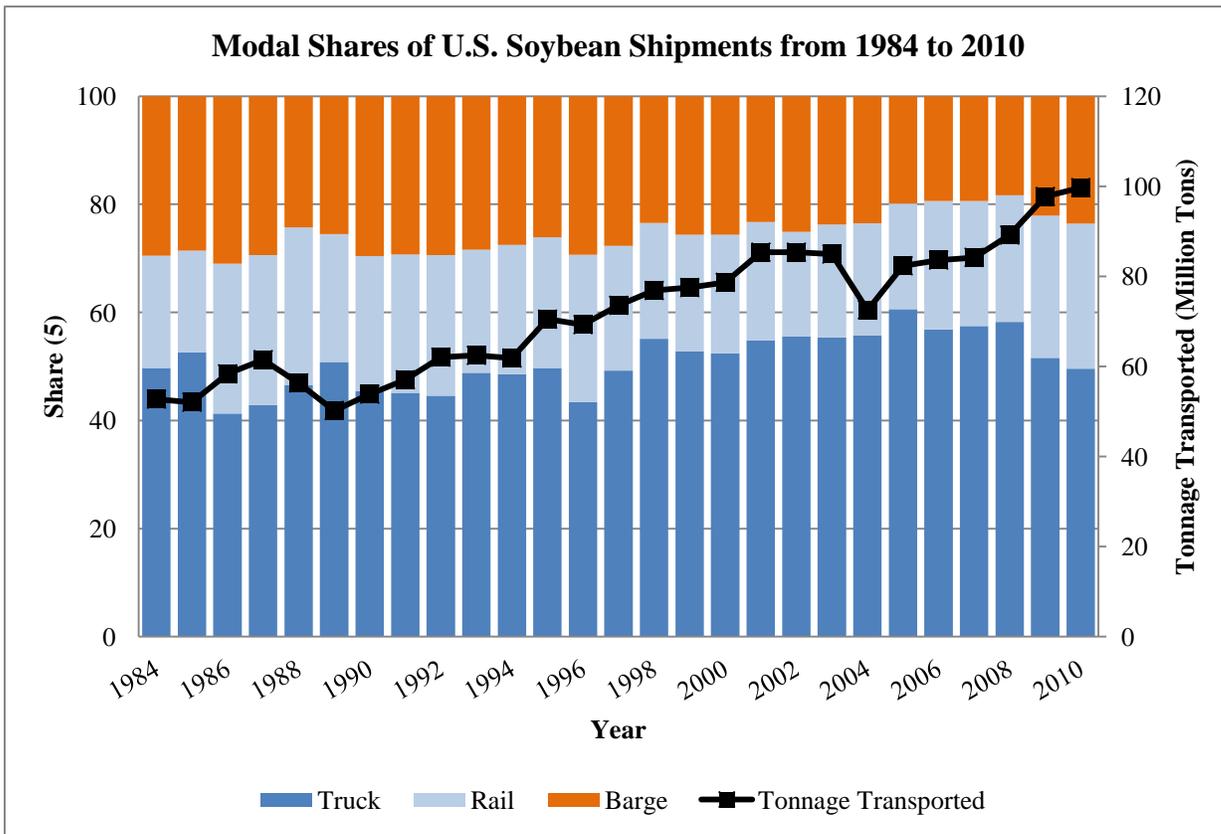


Figure 3: Modal shares of soybeans in the United States from 1984 to 2010.

Source: United States Department of Agriculture, Agricultural Marketing Service.

Transportation of wheat displays key distinctions (Figure 4). Unlike corn and soybeans, the tonnage of wheat transported in the U.S. has experienced a slight decline over the period of 1984-2010. Further, across the 27-year period, rail clearly dominates the movement of wheat. Similar to soybeans, barge's proportion of wheat transportation has remained relatively constant.

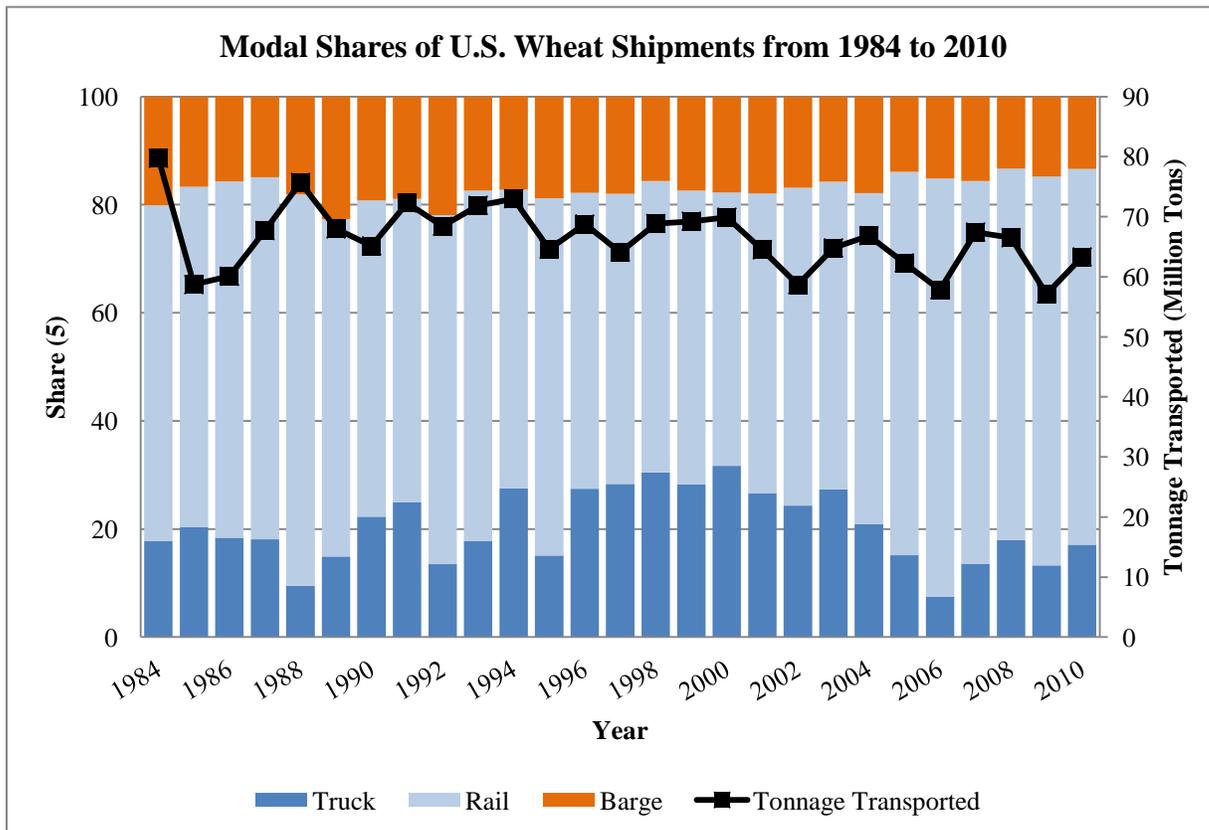
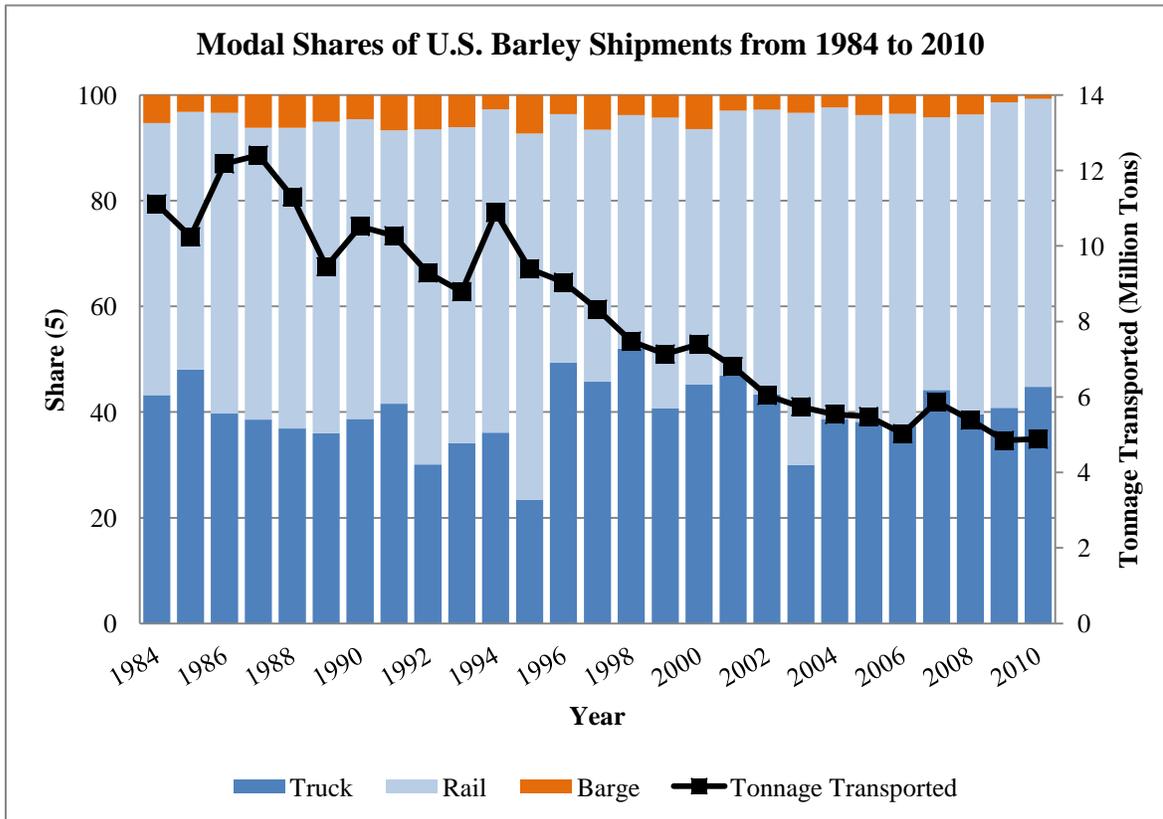


Figure 4: Modal shares of wheat in the United States from 1984 to 2010.

Source: United States Department of Agriculture, Agricultural Marketing Service.

Figure 5 displays the modal shares of U.S. barley shipments from 1984 to 2010. In contrast to the other three grains, barley’s tonnage shipped has diminished substantially across the period of study. However, similar to wheat, rail moves the most amount of barley in the United States. Though trends in barley moving by truck are less clear, barged barley has declined.

Figure 5: Modal shares of barley in the United States from 1984 to 2010.



Source: United States Department of Agriculture, Agricultural Marketing Service.

Compared to previous years, 2010 saw the greatest amounts of grain moved on roads, rail lines, and waterways—a total of 514 million tons. In 2010, the proportion of total tonnage shipped was 65.5 percent corn, 19.4 percent soybeans, 12.3 percent wheat, and 2.9 percent for combined sorghum and barley. Information to consider: 1) over the last two decades, trucking has become more important in the transportation of corn and soybeans; thus, quality of road and highway infrastructure are extremely important for efficient transportation of these grains, and 2) rail and barge are still important for some crops within specific regions of the United States.

## Should I bale hay in 2013?

Peter Callan, Extension Agent, Farm Business Management, Northern District

During the winter months, many producers finalize their projected crops acreages for the coming year. Numerous farms in Virginia produce hay to sell as a cash crop and/or feed to livestock during the winter months and times of drought. Some farmers give little consideration to these questions about their hay enterprise, how much does it cost to produce a ton of hay or does baling hay generate a profit or loss?

Virginia Tech crop budgets show that it costs ~\$155 to produce a ton of mixed hay. Using late winter 2013 fertilizer prices, the budget shows that there is ~\$72 of fertilizer in a ton of mixed hay. Since every bale of hay that leaves a field is exporting nutrients from that field, the nutrients must be replaced to maintain fertility. Otherwise, nutrient levels will be depleted.

Frequently, producers make hay because they own the equipment. The question that needs to be asked is, can the hay enterprise generate sufficient returns to cover both the variable (e.g. fuel, labor, repairs, twine) and fixed costs (e.g. depreciation, insurance, interest, taxes) of owning hay equipment? In the long-term all costs, fixed and variable, must be covered to have sufficient funds or borrowing capacity to replace equipment and machinery that wears out or become obsolete.

Dairy farmers and horse owners demand higher quality hay and routinely pay higher prices for hay that meets their quality standards. To consistently sell into this premium market hay must be bright green, leafy, soft and free of dust, mold and weeds. Quality must be the primary focus to serve this market. Based on historical prices in the Shenandoah Valley, hay producers have consistently received \$200 - \$225 per ton for premium mixed grass/alfalfa and grass hays. For producers who are able to consistently harvest and sell high quality hay the cash-hay enterprise can be a profitable addition to the farm business. It takes the same amount of nutrients and other inputs to grow high quality hay that is cut early, compared to lower quality hay cut late in season.

In contrast to the higher quality hay, the Shenandoah Valley hay market has discounted late-cut hay selling in the range of \$15 - \$20 per 1,000 pound round bale in the Shenandoah Valley. This equates to \$30 to \$40 per ton which is far below the production cost of \$155/ton. Hay sold at this price range does not cover the costs of the primary nutrients (N,P, and K) exported from the farm in each bale of hay.

Producers who have difficulty producing higher quality hay should consider profitable alternatives that capitalize on their skills and land base, for example, purchasing hay from off farm sources making sure to match hay quality to the needs of the animals being produced on their farms. In addition, the purchased hay will provide nutrients to the fields where it is fed. Other profitable alternatives could include rotational grazing, expanding pastures (and potentially increasing animal numbers) to include current hay lands, making hay on shares with a neighbor that has a reputation for quality hay production, or fall stockpiling forages for winter strip grazing.

Profitable hay producers should identify markets and consistently produce a quality product that meets the needs of their customers, know the total cost of production, and seek to price their hay to generate a profit over all costs. A highly profitable farmer who regularly sold hay to dairy and horse markets stated "I am not in farming for cheap exercise. I am not going to work all my life and all I have is a yard full of worn-out machinery to show for it. If I can't make money growing a crop then the equipment will sit in the shed."

The most important decision a hay producer can make is to spend time calculating his production costs before the start of the new crop year. An analysis of prior years' records is a good start and will indicate if he has made money growing and baling hay in previous years. This analysis will help guide you to choosing a profitable alternative. Best wishes for a safe and profitable 2013.