# **Virginia Cooperative Extension**



Farm Business Management Update April - May 2012

**Farm Business Management Update** is a joint effort of the Agricultural and Applied Economics faculty and the area farm management educators. Subject matter areas include timely information on farm management, marketing, tax management, finance, credit, labor, agricultural law, agri-business, estate planning, 4-H economic education, natural resources, and CRD. Please feel free to reproduce any article. However, please cite the title, author(s), date, and this newsletter.

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Virginia Cooperative Extension



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# Jill Albert Retires After 34 years of Service to VA Tech Gordon Groover (<u>groover@vt.edu</u>), Extension Economist, Farm Management, Department of Agricultural and Applied Economics, Virginia Tech

Jill Albert retired April 2012 after 34 years of service to VA Tech in the Agricultural and Applied Economics Department. Jill road herd on the format of this newsletter and me for 20 years -- someone had to do it! Jill was a solid citizen of the department in helping us all keep track of the many forms, rules, and regulations that severely confuse most faculty. She was very good at showing us the error of our ways in a humorous manner.

Jill, best of luck and thanks for all the help over the years.

# Nitrogen Testing Saves Corn Growers Money Peter Callan (peter.callan@vt.edu), Extension Agent, Farm Business Management, Northern District

Due to the dramatic rise in nitrogen prices over the past several years, producers are wondering how they can get the most bang for their buck. Crop budgets from Virginia Tech show that nitrogen accounts for nearly 57 percent (\$102) of total fertilizer input costs (\$177) to produce 150 bushels of corn per acre. Virginia Tech agronomists have stated that 146 pounds of nitrogen are needed to grow 150 bushels of corn per acre.

The nitrogen requirement for corn can be met in several ways. The decay of organic matter by soil organisms provides available nitrogen. Legumes (e.g. alfalfa, clover, soybeans) fix nitrogen from the air that can be used to meet the nitrogen requirements.

Сгор	% Stand	Description	Residual N (Lbs/ac)	
Alfalfa	50-75	Good (>4 T/A)	90	
25-49	Fair (3-4 T/A)	70		
<25	Poor (<3 T/A)	50		
Red Clover or	>50	Good (>3 T/A)	80	
Crimson Clover	25-49	Fair (2-3 T/A)	60	
<25	Poor (<2 T/A)	40		
Hairy Vetch	80-100	Good	100	
(covercrop)	50-79	Fair	75	
<50	Poor	50		
Peanuts	-	-	45	
Sovbeans	1/2 lb. N per bushel of vield, if previous vield unknown, 20 lbs.			

The Virginia Nutrient Management Standards has listed in the following table Estimated Nitrogen (N) Availability to Succeeding Crops from Legumes (1).

Many Virginia producers apply cow and swine manure, poultry litter and biosolids (municipal wastewater treatment sewage sludge) and grow cover crops to help meet the corn's N

requirements. The nitrogen in organic form becomes available to help meet the nitrogen requirement for the crop. When there is little available nitrogen from legumes, manure and biosolids, the requirements for the crop can be supplied with commercial fertilizer (e.g. urea, ammonium sulfate, liquid N). Many producers split apply fertilizer at planting and later in the growing season when nitrogen requirements are the greatest and yields estimates are more certain.

"Corn requires only small amounts of nitrogen during the first month of growth because the plants are small and the root systems are not well developed. Nitrogen applied preplant or released from organic matter (crop residues), manure and biosolids can be lost by leaching during the time when nitrogen requirements are low and soil moisture is high. Therefore, only small amounts of starter N (25-30 lbs./acre) should be applied prior to or at corn planting to meet the crop needs during the first 30-45 days after emergence" (2) Additional nitrogen can be sidedressed before the crop begins its most rapid growth rate when the corn is 12 -24 inches tall. A Pre-sidedress Soil Nitrate Test (PSNT) can be conducted at this time to reflect the actual availability of soil nitrogen to meet the crop's requirements.

The PSNT measures the plant-available nitrogen from the soil sample by taking cores across the field to a depth of 12 inches. The sampling should be done after the spring wet season and when the corn is 12 -24 inches tall.

It is recommended that multiple samples be taken in a field to reflect differences in soil types, drainage and fertility levels. Combine, mix, crumble and dry the samples to create a composite sample for a field. The samples may be dried by spreading the soil in a thin layer over newspaper in a warm place or in the sun. In order to speed up the drying process, the sample can be dried in convection and microwave ovens. Since this is a relatively simple test, turnaround time is usually 24 - 48 hours.

Virginia Tech agronomists recommend that producers conduct PSNTs on fields that have had dairy and swine manure, poultry litter and biosolids. Extension agents, crop consultants and industry sales consultants perform PSNTs for farmers in Virginia. These professionals can take the PSNT results and make recommendations for sidedressing the corn crop.

Growing seasons vary from year to year. PSNTs provide producers the opportunity to measure the levels of nitrogen available in the soil that can be used to meet the nitrogen requirements for a corn crop. Under or over fertilizing the crop can cost producers money in the form of not providing sufficient nutrients to meet the field's yield potential or applying nitrogen that is in excess of the field's yield potential. PSNTs are a win-win proposition for the producers' pocket books because producers can apply the optimal pounds of nitrogen needed to achieve the field's yield potential.

- 1. Virginia Nutrient Management Standards and Criteria. (2005). Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, p. 108, October.
- 2. Evanylo, G.K and M.M Alley. (1998). Nitrogen Soil Testing for Corn in Virginia, Virginia Cooperative Extension Publication 418-016.

# **China Pork Market: Current and Future Opportunities for the Virginia Pork Industry**

Joao Ferreira (jp@bridgerc.eu), Consultant, Bridge Research & Consulting and Gustavo Ferreira (gferre3@vt.edu), Extension Economist, Department of Agricultural and Applied Economics, Virginia Tech

# 1. The Swine Industry in Virginia

Hog and pig farming has been a central part of Virginia agriculture and can be traced back to early colonial times. At the national level, Virginia ranked 23<sup>rd</sup> in terms of hog and pig production (2007 Census of Agriculture). Despite its economic importance, this industry has experienced a decline in recent years. According to the Virginia Department of Agriculture and Consumer Services, hog production accounted for over forty-nine million dollars in cash receipts in 2009 in comparison to almost seventy million dollars in 2006. This industry ranked 15<sup>th</sup> in the top 20<sup>th</sup> farm commodities in the Commonwealth. In 2010, there were 355,000 hogs in the state versus 365,000 in 2006 (VDACS, 2010).

At national and state levels, hog and pig production have been moving from traditional family farms to large-scale contract operations. In these contract operations the hogs are not owned by individual farms, but rather by large pork processing firms such as Smithfield Foods - the largest pork processor in the world. These processors have played an important role on this shift towards large scale contract farming. In Virginia, large-scale hog farming operations are concentrated in an area that includes the southern-central part of the state near the North Carolina border and reaches east toward the Tidewater area. The hog and pig production in Virginia is also characterized by its concentration around large production operations. Nationally, farms with 5,000 or more hogs and pigs accounted for 68 percent of total production and 86 percent of total hog and pig sales (2007 Census of Agriculture). This industry also faces important obstacles and challenges that include high feed costs, absence of profits across all production segments, regulation and environmental ordinances, ethanol competition for corn, and less buying competition (Virginia Pork Industry Board, 2010). Moreover, the per capita consumption of pork in the U.S. has been stubbornly stable for the last thirty years as shown in figure 1. Pork ranks third in annual U.S. meat consumption, behind beef and chicken, and in 2009 pork per capita consumption in the U.S. was 49.9 pounds, while per capita expenditures were \$142.15 in 2008 (American Meat Institute, 2010).





Source: U.S. Department of Agriculture, Economic Research Service.

The development of new export markets and/or the consolidation of existing ones could compensate for a less dynamic domestic pork market, and thus help the Virginia swine industry. This study seeks to inform Virginia producers and processors about important current trends and future opportunities of China's pork market.

#### 2. China as an Emergent Pork Market

During the past few decades, U.S. agricultural producers have successfully increased their exports of proteins and processed foods to emergent economies such as Brazil, India, and China. In the specific case of China, rising incomes have created a growing middle class resulting in one of the most dynamic agricultural trade markets on the globe. More specifically, in 2010 China's average real per-capita GDP reached \$4,000, up from \$1,000 a decade ago. This is a very important market development because as more Chinese families escape poverty, they will increase their food budgets and food consumption (Henderson, 2010). As incomes rise, families also tend to diversify and enrich their diets by adding more meat, fish, and dairy products to their diets (Seale, Regmi and Bernstein, 2003). The transformation of China into a meat importer occurred in the 1990s, and has experienced some wide fluctuations since 2000. Nevertheless, figure 2 shows a positive trend over the past three decades, and annual U.S. meat exports to this country amounted to more than \$1.5 billion between 2005 and 2009 (Henderson, 2010).

Figure 2. Imports of Meat by China (1990-2010)



China has also become a very important market for Virginia agricultural exports. In 2010, China ranked 2<sup>nd</sup> in the top 20 Virginia's agricultural export markets with 194 million dollars in value (VDACS, 2010).

#### 3. Pork Production and Prices in China

Cyclical price fluctuations are common in the pork industry and result from the biological lag inherent in pork production. U.S. pork sales to China are also cyclical as figure 3 shows, and they follow closely any changes in China's swine industry. Depressed prices during the 2004-2006 period reduced Chinese production, which in turn lead to price increases in 2007 and to increases of U.S. exports that reached a record high during 2008. To correct this situation, Chinese authorities implemented several measures that included subsidies and tax incentives to the industry, price controls, and loans to producers. These actions coupled with high prices resulted in an increase of domestic hog production. Between 2009 and 2010, high production triggered a new fall in prices, and China's H1N1 virus related ban on U.S. pork shut off most sales to this market. In 2011, there was another rebound on prices and a strong increase in U.S. exports during the second half of the year fueled by the end of the ban on imported pork. This recent increase in prices will bring an increase in production and exports, which in turn will likely result in another fall in prices and U.S. pork exports during 2012 and perhaps 2013.

Figure 3. China Hog Prices and U.S. Exports of Pork to China and Hong Kong (2004-2011).



Source: USDA, Economic Research Service using data from China Ministry of Agriculture and USDA, Foreign Agricultural Service.

Finally, Chinese hog and pig production has been limited by a series of factors: (1) increased Chinese production costs; (2) disease risks; (3) environmental concerns; (4) land scarcity; (5) and tight credit conditions. A slow expansion of domestic hog and pig production and the expected growth of the Chinese economy will induce high prices on the short time and create a new window of opportunity for U.S. and Virginia pork exporters.

#### 4. Pork Consumption in China

Contemporary demographic changes in the Chinese population are creating significant opportunities for the U.S. and Virginia pork industry. However, when analyzing China, there is a need to be cautious about the overly-rosy picture that this market is comprised of 1.3 billion consumers. The urbanization of the Chinese society and increases in income are boosting the consumption of pork. Nevertheless, it is important to note that income and price do not have a big influence in local demand, because pork is a basic product in the Chinese diet. The way Chinese purchase pork meat is also changing, with a big proportion of consumers - especially older population - using the "wet markets" for daily purchases, and younger and more sophisticated consumers switching to supermarkets and hypermarkets. Here are some highlights and current facts about pork consumption in China:

- The Chinese diet has a strong vegetarian base supplemented with fish, pork meat and poultry.
- Pork meat is consumed during the whole year, but its consumption reaches a peak during Chinese holyday seasons, in February, May and October.
- There is a change in consumer habits, with the growing middle class more frequently going out for dinner.

- Chinese consumers prefer fresh pork meat over frozen. Hence, it is not common to find frozen meat in super markets or hypermarkets, although this is simply a matter of appearance because meat in supermarkets offered as fresh is in reality unfrozen meat.
- Increasingly, Chinese consumers are becoming more selective and receptive to high quality products, and starting to consider the quality certificates of food.
- Consumer concerns about food safety and the superior quality of imported products provides an advantage for Virginia pork exporters given more rigorous production standards in the U.S.
- While American and European consumers prefer lean muscle meat, Chinese consumers welcome fatty meat cuts, neck and back bones, ears, feet, and tails. Thus, Chinese pork consumption is complementary to U.S. production.
- There is a growing demand for more processed food including meat products.
- As figure 4 shows, pork remains the meat of choice for most Chinese families and it has not lost ground relatively to other meats especially when compared to pork consumption in the U.S. and other emerging economies. Furthermore, since 1995 overall meat and pork consumption has been steadily increasing.



Figure 4. U.S, Brazil, Russia, India and China per-capita Meat Consumption.

Source: USDA

#### 5. Conclusion and Recommendations

As China begins to play a larger role in the world pork market, Virginia hog and pig producers and processors must seize these emerging market opportunities by boosting trade with China. It is also important that Virginia pork exporters understand the complexities and challenges of the Chinese hog/pork sector. China is currently opening its market to Brazilian exporters, thus it is reasonable to foresee a more competitive environment. At the same, China wants to satisfy its growing demand for proteins by increasing domestic production, and today China produces nearly half of the world's pork (Henderson, 2011). Virginia exporters may respond to this problem by exporting more processed pork products. In summary, with projections of persistently strong economic performance and gains in meat consumption, China presents significant trade opportunities for better-prepared Virginia pork producers and processors.

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# Hay Costs Carl C. Stafford (ccstaffo@vt.edu), Extension Agent, Agriculture and Natural Resources, Animal Science, Northern District

Hay is being moved north by the trailer load at the end of this winter and into early spring, as farmers with surplus hay from last year's bountiful harvest let go of their hay stored outside. With most of this hay approaching its first birthday out-of-doors, and with excess on hand, some farmers felt that it is wise to move the hay before it spends another season on the farm. Regrettably, this hay often sells for less than its value as fertilizer. This is not sustainable in the long-run if you consider that last fall's estimates of the fertilizer used to produce this hay were \$80 per ton. This does not even address the other input costs to make a bale of hay, for example, fixed costs for equipment and machinery and out-of-pocket costs for fuel, labor and repairs. Estimates of total costs per ton of hay exceed \$150 per ton.

Quality hay is the foundation of the hay auction run by Tom Weaver at Rushville near Dayton, VA. He reports prices from 3/8/12 online at <u>http://www.ams.usda.gov/mnreports/rh\_gr310.txt</u> or you can search for "Rushville Hay Auction" on the internet. Top quality dairy and horse hay include sales of alfalfa large square bales, good grade at \$146/ton, alfalfa orchard grass large square bales, good grade at \$141/ton, orchard grass large square bales, premium grade, \$154 – 164 per ton. If you buy small square bales of these good and premium grades just mentioned, expect to pay another \$100 per ton. Also, good mixed grass hay and orchard grass in small round bales sell for around \$75/ton. Expect to pay another \$30 per ton for this same hay in small square bales.

It seems there is an opportunity to buy hay rather than the expense to produce hay, and buyers have more control over the quality of hay. Yet, buyers can get caught in a short market with escalating prices. However, if you see hay selling for fertilizer cost, this is a good indication to consider buying hay. Long-term decision on purchasing all your hay inputs should not be made on a whim, yet the clear indication is do your homework on all the alternatives to supply needed forage to your livestock operation.

# The Management Calendar

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The 2012 Governor's Conference in Agricultural Trade was held in March in downtown Richmond. The presentations from most of the speakers can be found at the Department of Agricultural and Applied Economics web site:

http://www.aaec.vt.edu/aaec/AAEC\_Department\_ITWPPPM.html. The clear message from we all need to understand is that we are in an international market place and that we need to pay as much attention to our customers/competitors in China, Brazil, and the rest of the world as we do to the price of corn at the local elevator. Take a few minutes to look over the presentations and to see that food global and political, environmental, and economic events anywhere in the world will affect the farm-level prices you see each day.

Listed below are the items that need to be included on the farm business managers' calendar for spring of 2012.

- 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 spring of 2012. 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.
- 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 a crop record keeping system for a new year.
- 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

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 what farmers are paying for labor, then take a look at the results of a survey conducted in Iowa exploring compensation, wages, and bonus on Iowa farm. The study was conducted by William Edwards, extension economist, Andy Chamra, student research assistant, and Ann Johanns, extension program specialists. The 2 publications can be found using the link below:
  - 1. Wages and Benefits for Farm Employees http://www.extension.iastate.edu/agdm/wholefarm/html/c1-60.html
  - 2. Bonus Plans for Farm Employees http://www.extension.iastate.edu/agdm/wholefarm/html/c1-61.html
- Words of Wisdom in Business is a short article from Elaine Stenbraaten a new venture specialist with Alberta Agriculture and Rural Development. The articel ran in the March 26, 2012 edition of Agri-News (http://www1.agric.gov.ab.ca/\$department/newslett.nsf/homemain/agnw). She shares some nuggets of wisdom about how to succeed in business. The article can be found at: http://www1.agric.gov.ab.ca/\$department/newslett.nsf/all/agnw19227.
- Farm Management on Facebook: Oklahoma extension specialists Damona Doye and Rodney Jones have taken the social media plunge and have established an OSU Farm Management Facebook page. "Like" them at: <u>http://www.facebook.com/OSUFarmManagement</u>