

Virginia Cooperative Extension



Farm Business Management Update December 2010 – January 2011

To: Extension Unit Directors, Extension District Directors, Extension Program Directors, and Farm Management Agents, and ANR Specialists

Dear Co-Workers:

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

Farm Business Management Update is electronically accessible via the Virginia Cooperative Extension World Wide Web site (<http://pubs.ext.vt.edu/news/farm-business-management-update.html>). To see the articles listed in the reverse chronological order, select “News,” then select “Farm Business Management Update” listed under the heading “Periodicals.”

Gordon E. Groover
Extension Economist, Farm Management and Farm Management Coordinator

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The Management Calendar

By Gordon Groover (xgrover@vt.edu), Extension Economist, Farm Management, Department of Agricultural and Applied Economics, Virginia Tech

Farm business managers should consider putting the following activities on their management calendar for December and January.

- Before the end of the year (calendar tax year filers), follow up on end-of-year tax management strategies recommended by your tax advisor. Additional information can be found in IRS publication 225 Farmer's Tax Guide at <http://www.irs.gov/pub/irs-pdf/p225.pdf>. Hard copies of Farmer's Tax Guide can be obtained from many of your public libraries.
- Begin closing out the farm books by collecting information for the farm net worth statement. Around the first of the year when you need to walk off all that holiday food, take a notepad or try out the new camera and/or cell phone as you walk around the farm. Record the number and approximate value of all the farm assets (cattle, tractors, machinery, buildings, inventories of grains and feedstuffs, chemicals, etc.) that can be organized on the asset side of the balance sheet. Be sure to save the notes, recording, or, better yet, place the notes or recording in a safe location (safety deposit box or fireproof box) for possible insurance claims. Review your end-of-year bank statements or contact your lender for current listings for all personal and business liabilities. You now have all the information you need to complete a market value net worth statement.
- If you are using cash accounting methods for tax purposes (computerized business records or hand-kept), you need to make sure your actual records match the deposits and check dates for all claimed income and expenses. A quick check of the records will help address any problems that might arise at tax time.
- Plan to get all tax records summarized and to your tax advisor by February 1, 2008, and check with your Virginia Cooperative Extension's farm business management agent on farm-related changes in state and federal taxes. A listing of Virginia tax credits can be found at the following site: <http://www.tax.virginia.gov/site.cfm?alias=TaxCredit>. Make sure that your tax advisor is aware of these credits. An abbreviated list of credits for agriculture and forestry are listed below.
 - Agricultural Best Management Practices Credit
 - Biodiesel Fuels Credit
 - Credit for Taxes Paid to Another State
 - Conservation Tillage Equipment Credit
 - Fertilizer and Pesticide Application Equipment Credit
 - Land Preservation Credit Provisions for 2007 and After
 - Long-Term Care Insurance Credit
 - Riparian Waterway Buffer Credit
- Use 2010 financial and production records to develop projected budgets, cash flow, and income statements for 2010. If you are using Quicken or QuickBooks, use the automated feature to create a budget based on last year as a starting place to create a detailed budget to reflect your expected costs and returns for 2011. If you are using the Virginia Cooperative Extension "Farm Record Book: Expenses and Receipts," the back pages provide forms to summarize all your financial data.

- Depending on the type of farm, begin working on a marketing plan for 2011 by collecting information on prices and world market situations.
- Keep up-to-date on the release of economic, crop conditions and estimates, world agricultural situation and outlook, and many other USDA reports by looking at the USDA report calendar at <http://www.usda.gov/news/releases/rptcal/calindex.htm>.
- Check on crop insurance policies by visiting the Risk Management Agency website at <http://www.rma.usda.gov/> to find an agent and view the multitude of policies (crops, livestock, forages, vegetables nursery, clams, and more) that are available in your area.
- Close out and summarize livestock and/or crop records for 2010, noting problems that must be addressed when making cropping, feeding, and breeding decisions during 2011. Compare 2010 records to previous years looking for strengths and weaknesses.
- Review 2010's crop, hay, and livestock records for labor problems, bottlenecks, and down times. Include all employees in spotting and planning to correct labor bottlenecks. Draw up a labor flow chart listing estimated times and identify employees who will be responsible for major tasks. This is very important if you have expanded acreage, number livestock, and/or replaced an employee or the number of employees.
- Schedule regular meetings with all workers and family members to discuss work activities as you gear up for the spring push. Make sure all workers feel free to suggest ways to improve efficiency. Think about creating an employee handbook for important information on pesticide safety, farm bio-security, and safe operations of machinery and equipment.

Selective information that might be useful to farmers and their advisors:

- The Virginia's Use Value Assessment Program web site has been updated for Tax Year 2011 (TY) and includes estimates based on capitalized rental rates and net income, details at <http://usevalue.agecon.vt.edu/>.
- Interested in a variety of information about Virginia agriculture from apples to zucchini? Get a copy of the Virginia Agricultural Statistics Bulletin and Resource Directory Number 80. The publication covers year 2009 and is published annually in September. You can download a copy by going to www.nass.usda.gov/Statistics_by_State/Virginia/Publications/Annual_Statistical_Bulletin/2009annualbulletin.pdf. A hard copy can be obtained by contacting Virginia Agricultural Statistics Service (VASS) nass-va@nass.usda.gov or by calling (804) 771-2493.
- Time to order your Virginia Cooperative Extension "Farm Record Book: Expenses and Receipts" (Publication 446-017). This 120-page record book provides an organized way of keeping track of annual financial, labor and personnel, and production-related records. It provides forms for many categories of expenses, receipts, labor, and financial summaries to meet the needs of most agriculturally-related businesses using cash accounting methods. Column headings are included for major items with some columns remaining blank for your own headings. Forms are arranged to facilitate transferring totals to income tax forms (Schedule F, tax depreciation, and Form 4797) and to help complete end-of-the-year analysis. Virginia Cooperative Extension "Farm Record Book: Expenses and Receipts" is available from Virginia Cooperative Extension for \$12.00. Call your local extension office and request the order form VCE Publication 446-016,

print the form at www.ext.vt.edu/pubs/agecon/446-016/446-016.pdf, or contact me at (540) 231-5850.

- Not all farm business or families have conflict or needs to improve their communicating skills but, if you do, consider taking a look at 2 of the October *Ag Decision Maker* (AgDM) publications by Mary Holz-Clause, Co-Director, Ag Marketing Resource Center, Associate Vice President for ISU Extension and Outreach. See *Using Group Conflict to Improve your Project* at www.extension.iastate.edu/agdm/wholefarm/html/c6-55.html and *Good Communication Can Help Solve Problems* at www.extension.iastate.edu/agdm/wholefarm/html/c6-56.html. Other articles from the Ag Decision Maker (AgDM) newsletter can be found at www.extension.iastate.edu/agdm/.
- Timber taxes are not the same as farm taxes. If you plan to sell timber or have recently sold timber then visit the National Timber Tax Website at www.timbertax.org.
- Thinking of using or are currently using QuickBooks? Then you will need a copy of Damona Doye's and Lori Shipman's Extension publication title *QuickBooks for Agricultural Financial Records* at <http://agecon.okstate.edu/faculty/publications/3806.pdf>.
- Purdue Agricultural Economics Report has a series of papers addressing many common concerns of the agricultural industry. Selected topics include (see this page for all papers at www.agecon.purdue.edu/extension/pubs/paer/):
 - Farm Economy (Introduction) by Chris Hurt
 - Economic Recovery by Larry DeBoer
 - Trade and Trade Agreements by Philip Abbott
 - Next Farm Bill by Roman Keeney
 - Food Price Inflation by Corinne Alexander
 - Pork Producers, Beef Industry, Poultry Sector, Corn Demand, Wheat Comeback and Soybeans Prices by Chris Hurt
 - Crop Economics by Alan Miller
 - Crop Production Costs by Bruce Erickson
 - Dairy Prices by Nicole Olynk
- Online help understanding and using financial statements. The Center for Farm Financial Management has created a new online workshop series to help agricultural producers and/or anyone who works with them to understand and use common financial statements and measures. The website, Interpreting Financial Statements and Measures (IFSaM), is intended to teach producers the basics of interpreting the four major financial statements and the 21 financial measures recommended by the Farm Financial Standards Council. IFSaM is a series of online videos that producers can work through at their own pace. Each session provides benchmarks, based on actual farms, that producers can use to evaluate their own financial position and their financial performance. Case farm examples are used to bring the data to life. There are also optional "test your knowledge" quizzes at the end of each session. In total, there is over 2 ½ hours of information. Best of all, it's free. This series was created with funding from the North Central Risk Management Education Center. IFSaM is located at <http://ifsam.cffm.umn.edu/>.

Long-term lease agreements can be good for both landowner and farmer

By Tom Stanley, (stanleyt@vt.edu) Extension Agent, Farm Business Management, Northern District

Virtually all full-time farms in Virginia (and many part-time farms) are dependent on renting land from other landowners. With few exceptions real estate values in the Mid-Atlantic long ago outstripped the land's net present value from agricultural production. Consequently, very few farmers can own all the land necessary to have an economically viable farm business. Often land rental has been the only realistic option for those farmers that want to carry additional animals or farm more acres.

I am often asked "What is a fair rental rate?" and my response is always "it depends," because it depend on many factors. All the issues related to land rental rates cannot be addressed in this one brief article, but I would like to address just one, the length of the lease. Most agricultural land leases in this region are on a 12-month term, renewed annually. I encourage landowners to consider a move toward multiple-year leases, instead.

Multiple year leases can offer significant advantages that benefit farm stewardship. Most improvements a that farmer can make to a farm; such as lime or fertilizer, new fences, weed control, improved plant varieties; take multiple years to recoup the initial expense. Consistently, it can be observed that farms that are rented year-to-year are the least well maintained. Most farmers will invest in the improvement of the farm's they operate only if they are assured that they will have access to the farm for a long enough period to recoup the investment.

The length of the term may depend on the type of farm that is rented and how dependent the farmer is on that particular tract of land for his operation. I am aware of an unimproved farm with one small barn that was leased under a 15-year contract in the late 1990's. The tenant undertook extensive improvements to the farm and it is now a grazing dairy farm with improved forage species sown, extensive cross fencing, water troughs, and all-weather cattle lanes. The lease has recently been renewed for another term. More modest improvements can generally be recaptured in three to five years. A five year term is a good fit for recapturing most of the investment in an improved perennial forage stand. Fencing, especially perimeter fencing, is a longer term investment and some negotiation may be necessary regarding the construction of new fences.

Multiple-year leases can be useful and equitable to both parties to the agreement. The lessee's interest can be protected by requiring the landowner to commit to pro-rated reimbursement to the farmer if for whatever reason the lease is terminated early by the landowner. The landowner could put a cap on this reimbursement obligation, but a negotiated agreement should provide the farmer-tenant an incentive to make improvements from which both parties ultimately benefit. Of course there can also be provisions in a lease to protect the landowner should the farmer prove to be a 'bad actor'. In general, multiple-year leases are an effective way to insure that the landowner enjoys the best stewardship their farmer-tenant can provide.

Selling Your Dairy Farm¹

By Peter Callan (peter.callan@vt.edu), Extension Agent, Farm Business Management, Northern District

Many dairymen are considering selling their dairy farms due to huge losses in equity that have taken place in the last 24 months. Once the dairyman has made the decision to sell his dairy farm he should immediately start planning the farm sale. Timing is the key to maximizing profits in the sale of the real estate, equipment, and cattle.

Your lender is your business partner! After a producer has made the decision to exit the industry, he or she needs to immediately contact his or her lender; the producer will then discuss his proposed exit strategy. The major question that will be discussed is “will the sale of the farm’s assets be sufficient to pay off the farm’s debt and tax liabilities?” Your lender will have an idea of the current value of real estate, cattle, and equipment on your farm. A word of caution; do not be surprised or upset if your lender states that the value of your assets is significantly lower than values used on previous year’s balance sheets.

The buyers of your assets will be producers that have cash reserves and/or ability to cash flow additional debt that will be used to purchase the real estate, cattle and equipment. There will be fewer buyers because many producers are struggling to meet expenses and service debt due to depressed milk prices.

Many states require producers to hold federal Cattle Animal Feeding Operation (CAFO) and/or state animal feeding operation permits for farms that house more than a specific number of animals. The permit requirements vary by state. These permits require the farm to have a nutrient management plan developed by a certified nutrient management planner. It can take time to transfer and possibly update the permits. Many auctioneers and real estate agents suggest that the owner initiate the sale of the real estate in early fall since the transfer process may take 2 months or more, depending upon the state.

Producers have two options when selling their dairy herds. They can sell the milking herd, bred heifers, open heifers, and calves at either public auction or privately. Producers need to carefully weigh their options in selling their herds. I would suggest that owners speak with reputable auctioneers who will give them realistic prices regarding the value of their herds sold at auction or in groups (e.g. entire milking herd, bred heifers, open heifers, and calves). Producers tend to remember the sale prices of fancy bred heifers and first calf heifers. Grade cows that have calved three or more times do not sell for more than beef prices because the average cull rate in many herds is 35 percent. Statistically, these older animals may milk one lactation for their new owners before they are culled from the herd. Producers need to estimate the average NET sale prices for the cows, heifers, and calves in their herds. Remember, it is the average that pays the bills!

¹ This article was published in the June 11, 2010 issue of Progressive Dairyman.

The highest prices for farm equipment sold at public auction are generated at auctions held in late January and early February. Many producers who have cash and/or access to credit, try to purchase equipment at auctions because generally the sale prices are lower than equipment purchased at a dealer. The first auctions have the highest demand for equipment. Once producers have purchased the equipment that they need (e.g. tractor, forage harvester, planters etc), there will be fewer buyers at the upcoming auctions. If a producer is unable to purchase a piece of equipment by the middle of March, then he or she will buy from a dealer because the equipment is needed for the coming year. Likewise, there will be lower attendance at auctions held after March 15 because producers are starting to work in the fields.

Once the producer has estimated the sale prices of the farm, herd, and equipment, he or she should take this information to an accountant. Your accountant will be able to provide you with an estimate of your tax liability from the sale of the assets. As a former lender, I find that many producers have the impression that once the debt is paid off there will be minimal tax liabilities. I strongly encourage producers to work with tax professionals who are knowledgeable about farm taxes. These professionals will be able to create a variety of income tax scenarios for the sale of your farm, cattle, and equipment. The decision to sell your farm assets has income tax consequences that are often not calculated or underestimated. Deferred tax liabilities resulting from depreciation recapture could use up 15 to 40 percent of the assets sold. For example, a John Deere 4020 which was purchased in 1972 for \$8,000 is fully depreciated on a depreciation schedule. Assuming the 4020 sells for \$8,000 at the farm auction, the recapture of depreciation is \$8,000. Thus, the producer will have the sale taxed as \$8,000 of ordinary income.

If the farm sale can not pay off all debt and tax liabilities, the farm will not be sold. The owner will try to ride out the storm and try to sell the farm when the economy has recovered in the following 2-3 years. In the meantime the owner may have a job and a place to live. The best time to sell a farm is when milk prices are high. In a strong milk market, producers are extremely optimistic and purchase cattle to cash in on the high prices. The bad years are quickly forgotten!

After the owner has made the decision to sell the farm, the owner should schedule a meeting with the farm's employees. Employee retention is a major issue in planning the farm sale. Remember, your employees are the most important asset on your farm! Producers sometimes try to quietly sell their farms to neighboring farmers who would be interested in purchasing the farm as an "add on" to their own farms. Even though the seller and buyer have promised not to discuss the farm sale, rumors can quickly spread within the local community and eventually your employees will hear rumors that their employer is trying to sell his farm. Employees will leave because they need to support their families, thus they may take a job before the farm is sold. Why should they pass up taking good jobs when most likely the farm will be sold in the next several months? The bottom line is the owner must retain the farm's employees to maximize net returns from the farm sale.

The owner can provide the farm's employees with the option of participating in a "golden hand cuff" agreement to retain employees. The "golden hand cuff" is an agreement signed by the owner and employee which states that the owner will give an employee a bonus (1-2 months of salary) if they work on the farm until the sale of the real estate, cattle, and equipment is concluded. The "golden hand cuff" provides an incentive for the employee to continue working

at the farm and a financial cushion that enables the employee to seek a job that is a “good fit” for their skills and experience. Numerous potential buyers will make an effort to talk with key employees because the employees may provide the buyers with “inside information” about the quality of the equipment and animals. Employees that are happy and have been fairly treated will generally not bad mouth the owner. The bottom line is that if employees leave before the farm sale, it can be extremely difficult to present the assets in the best possible manner (e.g. stalls are well bedded, equipment is repaired and is in “top notch” operating condition, junk is picked up around the farmstead, etc.)

When I sold my farm, I signed a “golden hand cuff” agreement with Ron, my herdsman. Ron was an integral part of the success of my farm. This agreement was a way to thank him for his 10 years of hard work and provide him time to find a job that was a good match for his skill set. Ron received over 30 job offers and he started his new job two weeks after the farm sale.

The owner needs to have a positive attitude throughout the sale process. The sale of your farm is a major life-changing experience; it is scary to say the least. When the owner starts to feel scared, discouraged, and depressed about selling the farm, I would strongly encourage him/her to share his thoughts and feelings with trusted clergy and/or health care professionals. These individuals can help producers work through this life-changing experience. The owner is going through a grieving process because he is leaving a way of life that he loved and has devoted his life to the family dairy farm.

During the process of selling the farm, the owner and his family will be constantly asked the following question: what are you going to do after the farm is sold? Most producers are not sure where they will be working after the farm sale because they are spending all their time conducting the day to day operations of the farm and preparing for the farm sale. When the owner indicates that he is not sure where he will locate a job, these well meaning folks will follow-up with the following comments: “I am sure that you will find something. There are always jobs available for people who want to work. When one door closes; another door (opportunity) will open.” In the owner’s and family members’ minds, the big question is when the opportunities will be available! My advice is to no attention to these comments because, these such remarks can be depressing.

The owner has to constantly remind himself that there are numerous skills that can be transferred from a dairy farm to an off-farm job. In today’s work place, many employers are interested in hiring former farmers. Farmers have a strong work ethic. They will do whatever it takes to complete the job and are willing to work long hours under adverse weather conditions to complete the job.

Good Times For Sheep & Goat Producers

By Tom Stanley, (stanleyt@vt.edu) Extension Agent, Farm Business Management, Northern District

During the last week of November 2010 90-lb slaughter lambs at Farmers Livestock Exchange, Winchester, Virginia brought \$1.47 per pound (\$132.50 / head). Similar lambs at New Holland Pennsylvania (the largest sheep market on the East Coast) brought over \$1.70 per pound (\$153 /

head). These are historically high prices and are significant in that they occurred a full two weeks after the biggest Muslim holiday of the year (Eid ul-Adha) and are consistent with prices that have been paid since August for slaughter lambs and a similar trend emerged in the market for slaughter goats. According to Ron Cole with the American Sheep Industry Council, the market prices described above are purely a function of supply and demand. Increasing demand for fresh lamb in the Northeast have increased market prices as supply has not increased as rapidly. Some of the challenges unique to sheep production suggest this shortage of supply will not be remedied anytime soon.

There were 175,000 sheep and lambs in the state of Virginia in 1975. Predators, a higher labor requirement than cattle, a declining market for wool, and limited demand for lamb are among the reasons sheep numbers declined steadily to today's 61,000 head total inventory. This downward trend is consistent with what has happened across the country with the National flock numbering 14.5 million in 1975 and declining to 5.6 million head in 2010. Virginia and other Eastern states have seen an increase in goat and sheep numbers in recent years thanks to the introduction of the South African Boer Goat and hair sheep breeds that required less labor and have greater resistance to parasites than the average wool-type sheep. Yet, trends in the state sheep inventory show no sign of returning to 1975 levels.

At the same time sheep numbers were declining, the population of ethnic communities in the northeast was growing. There have long been Mediterranean and European ethnic communities in the Northeastern U.S. that frequently enjoy fresh lamb. However the significant growth over the last decade has been in South Asian and African ethnic groups that are predominantly Muslim. The Muslim communities from Africa, Southern, and Southwest Asia are extremely diverse with significant differences in their traditions and observances. The diversity of these groups has created a market for a wide range of sheep and goats of various ages and weights. However, they share in common several traditions that greatly impact our market for lambs and goats. First, they prefer lamb over virtually any other kind of meat. Second, they prefer lamb and chevon (goat meat) they believe has been freshly slaughtered and in keeping with their particular methods and traditions. Many of these consumers often actively participate in the slaughter of the lamb or goat and the preparation of the carcass.

This gives American lambs and goats, and especially East Coast lambs and goats a distinct advantage over lower-cost imported product. But this is a niche market and week-to-week variation in price can be significant. It is critical producers be sensitive to and aware of the purchasing patterns of ethnic consumers. Furthermore, the management challenges presented by predators, internal parasites, and some diseases are a deterrent to the establishment of many large sheep or goat operations on the East Coast. This barrier to entry suggests the ethnic market for lamb, mutton, and chevon could remain strong for some years to come.

The feasibility of introducing a sheep or goat enterprise to an existing farm business depends on several factors. Every farm is different and consequently, the business planning process and some partial budgeting would be critical steps before acquiring sheep or goats. However, strong market demand and the production challenges that serve to curb growth in supply could spell opportunity for some grass-based farms. Sample sheep enterprise budgets can be found at <http://www.pubs.ext.vt.edu/category/enterprise-budgets.html>. Contact your Extension Office if

you would like assistance using enterprise budgets or developing a farm business plan. Special thanks to Mr. Jeff Lawson for sharing his knowledge of the Northeastern sheep and goat market in the preparation of this article.

Bale Wrapper Economics²³

By Gordon Groover (xgrover@vt.edu), Extension Economist, Farm Management, Department of Agricultural and Applied Economics, Virginia Tech

Part 1: Why wrap? There are many articles in recent farm publications discussing the ins and outs of wrapping hay to maintain forage quality. Excellent quality forage is a goal of all forage producers and it makes sense and money. The out-of-pocket cost difference between making excellent quality forage and poor quality is usually very small. Often it is based on harvest time relative to adverse weather events; thus, the clear advantage of wrapping baled hay soon after it is cut (that day or the next morning). Wrapping single bales one at a time or wrapping a line across the field with an in-line wrapper will improve harvest efficiency and timing and reduce harvest and storages losses. Thus, wrapping bales offers real solutions to the problems of making excellent quality hay but at what costs? Before digging into the details of estimating the costs and benefits of a bale wrapper, let's spend a few minutes thinking about some key questions that need to be addressed before making an investment (these questions apply to most investments).

1. What are the problem(s) you plan to fix with this new investment?
2. Will this investment lead to other supporting investments?
3. Will this investment increase or decrease the need for specialized labor and management?
4. Will this investment increase or decrease production and/or financial risk?
5. Will this investment create or reduce opportunities for the farm business?
6. Will this investment reduce costs or increase income?
7. Will this investment reduce income or increase costs?

While answers to these questions will vary from one farm business to another, a discussion with out numbers may help focus the decision making process. Question 1: What are the problems you are trying to fix? Rained on hay, storage losses from hay stored outside, harvest and handling losses especially legumes, to name a few. Also, consider the loss in income from sales of milk or live-weight gain from feeding poorer quality hay. A loss of 5 pounds of milk per cow due to lower quality forages can quickly add up. However, if the poorer quality hay can be fed to beef cows as their maintenance ration, is this a significant problem? Defining the problem and the level of certainty that the investment will fix that problems is the key.

Question 2: Will this investment lead to other supporting investments? This can be a slippery slope for any new investment that requires another investment to finally solving the problem. Consider the case of a farm trying to minimize machinery size and costs. The investment in a single bale wrapper requires an 80 hp tractor to efficiently and safely move the wet bales. Yet, if the largest tractor is a 55-HP, will the farm need to purchase a larger tractor to make the single

² Thanks to Mr. Billy Good of Anderson Bale Wrappers, Inc. for his information and coefficients used in the economic analysis.

³ This paper was prepared for the [VCE](#) and [VFGC](#) *Alfalfa Haylage and Baleage* Conferences held December 7-9, 2020.

bale wrapper work? Will there be additional needs for gravel pads for storage in field or back at the farmstead?

Question 3: Will this investment increase or decrease the need for specialized labor and management? The wrapper may require additional labor to manage the single and in-line system. If the farm relies on unskilled labor or it is a one person farm, will the farm need to hire additional skilled labor?

Question 4: Will this investment increase or decrease production and/or financial risk? In most cases the bale wrapping system will reduce the risk of harvesting a poor quality hay crop and potentially reduce the total feed costs due to better quality forage and the need for less supplements. Yet, the added capital investment to achieve these benefits can increase financial risk by adding debt to the farm's balance sheet. Please note the investment may reduce costs (increase profits) but the business must have the repayment capacity and cash flow to make this a feasible investment.

Question 5: Will this capital investment create or reduce opportunities for the farm business? Consider how the wrapping system will impact other farm business enterprises. For example, a cash hay business, the farm may be able to improve the quality of all hay, both used on the farm (warped hay) and dry for-sale hay. The wrapper provides an option for managing weather events and still harvesting second cut hay for sale as dry hay. However, wrapped hay sales will be limited to cattle and hauling will be more expensive. Also consider that additional income from custom wrapping can provide opportunities to help pay for the added investment costs and reduce the fixed costs to the home farm.

Questions 6 and 7: What will happen to costs and income from this investment? We have discussed many of these considerations so far, so let's summarize the discussion in a table format. Table 1 breaks the discussion into positive items on the left and negative on the right. For any farm business to determine if the purchase of a wrapper is financially prudent, they must know what problems need fixing and then provide dollar estimates for each of the items listed in Table 1.

Table 1. Positive and negative considerations for investing in a bale wrapper

Positive	Negative
Improved (maintain) forage quality ¹	Added operating costs for the wrapper (fuel and repairs) and plastic
Reduced harvest loss	Added fixed cost for the wrapper – cash flow and debt
Reduced storage and feeding loss	Added labor costs, requires 2 people – one moving bales and one operating the wrapper
More timely harvest	Increased number of trips to haul high-moisture vs dry hay (~20-40% more)
Greater live weight gains or milk production	Added storage space or loss of productive sections of hay fields
Less purchased feeds	Disposal of plastic – time and expense
Potential for custom income	Added time and maybe horse-power for feeding bales
In-Line wrapper - no additional tractors required	May require additional investment in bale handling equipment
Less worry about harvest problems	Single-wrapper – an addition tractor on site to power the wrapper and a tractor to bring bales

¹Note: The mere act of wrapping hay will not lead to improved quality. Wrapping high quality hay will improve chances of maintaining that quality over time.

Part 2: How much does it costs to wrap? Listed below in Table 2 are the base assumptions required to determine the per bale costs of wrapping using the single bale wrapper (wraps one bale at a time) requiring a tractor (50-60 HP) as a power unit and one to move bales (60-100 HP); and the in-line wrapper powered by a gasoline engine (13 HP) requiring a 60-100 HP tractor to move bales. The single bale system is less expensive (\$15,000-\$18,000) but requires more wrapping time and plastic film per bale. The in-line system costs more (\$24,000-\$26,000), yet when setup provides a continuous string of bales linked via the plastic film, with less wrap-time and film per bale. Other differences between the two systems are the single system takes about 3 minutes to wrap a bale with an estimated manufacturer’s throughput of 40 bales per hour; and the in-line system takes about 30 seconds to wrap a bale with an estimated manufacturer’s throughput of 120 bales per hour. An additional 1.50 minutes was added to the wrapping time to both systems for moving bales to the wrappers. The single systems can wrap of varying sized bales and the in-line system is sized for bales less than 5.5’ in diameter. Plastic film varies between systems and between bales and film is sold in different weighs and lengths. Based on information from the manufacturer, film usage is as follows: the single system will wrap about 20 bales per roll of film and the in-line system will wrap 40 bales per roll and requires end caps or plastic hay bags for the 2 end bales to seal the line.

Table 2. Base assumptions for each wrapper

Base Assumptions	Single bale	In-line
Estimated purchase costs per unit	\$16,500	\$25,000
HP for tractor to operate	50-60	N/A
HP of wrapping unit	N/A	13 hp gas
Manufactures capacity bales per hr	40	120
Bales per year	1,000 (about 100 ac)	
Diameter of bales for in-line	5.5' or less	
Approximated weight of bales (depending on size)	1,500 lb to 2,500 lbs	
Bale handling tractor size	60-100 HP or a large skid steer	
Handling tractor costs per bale (80 HP) @ \$27/hr plus 1.25% efficiency factor	1.5 min - \$0.84/bale	
Approximated plastic usage based on 5,000-6,000 feet per roll	20 bales per roll	40 bales per roll
Plastic costs per bale – based on current plastic prices based on ~\$90-\$100/roll	\$3.75-\$5.00	\$1.75-\$2.50
Approximate labor time per bale	3 min to wrap and 1.5 min move bales	30 sec per bale and 1.5 min to move bales
Equivalent number of wet bales based 2.5 dry bales per ton (2.5 bales * 1.35)	3.4 bales per ton	

Estimating the total costs of wrapping a bale of hay is based on a lot of assumptions about the typical systems on a typical farm and none of us live on a typical farm or have a typical hay system. Please take the cost estimates listed in Table 3 as a starting point for your own analysis. Listed in Table 3 are the costs estimates of the 2 different warping systems. The first section of table 3 details the cost of plastic film at \$4.40 to wrap a single bale and \$2.10 for a typical bale in the in-line system.

The in-line system requires the line of bales to be capped using end caps or by placing the starting and ending bales in a hay bag prior to wrapping. Capping the ends is estimated to be \$0.30 per bale (the prorated costs of capping the ends will vary based on the length of the bale-line). Labor for both systems is priced at \$15.00 per hour and an additional 25% machinery efficiency factor is added to cover labor associated with changing film rolls, refueling, and setup and takedown time. Labor time for the single system is 3 minutes to wrap and 1.5 minutes to handle bales for a total of 4.5 minutes per bale for a total labor cost of \$1.40. Labor for the in-line system is 0.5 minute to wrap and 1.5 minutes to handle bales for a total of 2.0 minutes per bale for a total labor cost of \$0.65. The single system requires more time and film and costs about \$5.80 per bale, which is \$2.75 more than the in-line system. The cost to operate the machinery and equipment is based on engineering factors for fuel and repair rates (American Society of Agricultural and Biological Engineers, Technical Library). The single systems requires a 55 HP tractor to run the wrapper and the costs per hour are \$11.97/hr to cover fuel and repairs for both the tractor and wrapper. The in-line system is power by a 13 HP gasoline engine so the costs per hour of \$5.15 covers gas and repairs for the engine and wrapper. The fixed machinery costs (ownership) at first glance looks very large; however, if the fixed and variable machinery costs are prorate on a per bale cost (40 bales and hour for the single and 120 for the in-line) the costs per bale for the single system is \$3.39 and for the in-line system \$2.66 per bale.

Summing all the costs on a per bale basis shows that a bale wrapping system will add about \$5.00 to \$10.00 per bale to the cost of producing the hay in that wrapped bale. Another way to look at the cost is to compare it on a dry-ton basis. Based on the assumption that the difference in moisture between dry and wrapped hay is around 35% (50% less 15%) and the average number of dry round bales per ton, 2.5 bales, is inflated by 35% to arrive at 3.4 wrapped bales per ton. The costs per ton to wrap a dry-ton-equivalent ton of wet hay is \$31.24 for the single and \$19.42 for the in-line system. Therefore, if the total cost of producing a ton of hay on your farm is \$100/ton, using a bale wrapper will increase your total costs to \$120 to \$131 per ton.

Table 3. How much does it cost to Wrap?

	Variable costs (labor and plastic)	Single bale	In-line
	Plastic costs per bale - based on current plastic prices based on ~\$90-\$100/roll	\$4.40	\$2.10
	2 end caps or hay bags at \$5 per end or \$10 for a line of bales	N/A	\$0.30
	Labor costs at \$15.00 per hour plus an additional 25% for setup, changing wrap, fueling...	\$1.40	\$0.65
1	Total variable costs labor and plastic per bale	\$5.80	\$3.05
	Machinery costs		
	Power units and wrapper variable (fuel and repairs) costs/hour	\$11.97	\$5.15
	Fixed costs/hr	\$89.76	\$213.00
2	Total machinery costs/hr	\$101.73	\$218.15
	Machinery costs/bale (Line 2 ÷ capacity bales/hr) see Table 2	\$2.54	\$1.82
	Bale handling tractor (80 HP) total costs/bale @ \$27/hr, plus 1.25% efficiency factor = 1.5 min/bale	\$0.84	\$0.84
3	Total Machinery costs per bale	\$3.39	\$2.66
4	Total costs per bale (line 1 + line 3)	\$9.19	\$5.71
	Per dry ton equivalent (Line 4 *3.4 bales per ton)	\$31.24	\$19.42

Part 3: Summary: The bottom-line will depend on how you assign values to the following benefits of owning a hay wrapping system:

- Improved forage quality
- Reduced harvest loss
- Reduced storage and feeding loss
- More timely harvest
- Greater live weight gains or milk production
- Less purchased feeds
- Potential for custom income
- Less worry about harvest

These benefits will need to be greater than or equal to the \$20-\$30 added costs per ton to wrap hay for this investment to make sense/cents and fix that original problem.

Cost Accounting Made Easy

By Peter Callan (peter.callan@vt.edu), Extension Agent, Farm Business Management, Northern District

Cost accounting is used to evaluate the overall costs associated with conducting business. It is easy to allocate “big ticket” expenses (e.g., fertilizer, seed, feed, livestock supplies) between a farm’s enterprises (e.g. dairy, crop, beef, etc.). This gives the producer a rough estimate of production costs for an enterprise. However, it is extremely difficult to allocate operating costs (e.g., labor, fuel, supplies, repairs, etc.) between individual crops and enterprises on a farm. A cost accounting system enables the farm manager to determine the exact cash production costs for enterprises and specific crops grown on that farm.

My sister-in-law has developed a cost accounting system that is a simple and fast way of allocating costs on the 200 cow dairy, 1800 acre cash crop farm and dry bean processing business operated by her and my brother. She has “trained” my brother to categorize expenses on billing statements received each day in the mail when he comes into the house for his dinner. This easy task takes a maximum of five minutes. If my brother does not perform this simple assignment; he does not have the opportunity to eat his dinner that evening! The system works because my sister-in-law is an excellent cook and my brother carries a large “tire” around his waist. The first step in developing a cost accounting system is developing a chart of accounts.

A chart of accounts is a listing of the names of the accounts that the farm has identified for recording transactions in its record keeping system. The chart of accounts is sub categories for major income and expense categories.

The producer has the flexibility to customize the chart of accounts to best suit the needs of the farm, including adding accounts as needed. For example, repairs are a category that summarizes equipment, silo and real estate repairs and shop supplies. The repair category can be broken down into sub accounts. Equipment repairs can be assigned to repairs by the piece of equipment. Likewise real estate repairs can include repairs made to barns, driveways, houses, etc. Shop supplies are a “catch all” category for the various items used in the farm shop, e.g., nuts and bolts, welding supplies, oil filters, tools, etc. Livestock producers may wish to break down feed expenses into the following sub categories: calf feed, concentrates, minerals-salt, forage purchased, hay purchased, nutritional work, forage testing, and silage inoculants. The most important concept in any record keeping system is the ability to find what you are looking for when you need it.

The key to developing a chart of accounts is identifying the sub categories which will enable the producer to make more informed business decisions on a timely basis. On many farms, labor is the largest expense. Now more than ever, the accurate allocation of labor expenses between crops and enterprises is the key to determining the most profitable uses of labor on a farm.

There are two types of labor records that are kept in a cost accounting system. Federal and state laws require employers to report wages paid to employees. In order to meet the state and federal reporting requirements, employers will record the following information for each employee:

gross wages, state and federal income taxes withheld, employer and employee social security and Medicare taxes. The second type of labor records allocates labor between the farm's enterprises.

My sister-in-law has developed a simple system to allocate labor costs between the dairy, cash crop and bean processing enterprises on her farm. During the first full week of January, April, July and October, she totals the number of hours worked for each employee. Then she distributes the number of hours that the employee worked between the farm's three enterprises. For example, 100 percent of the milker's hours are allocated to the dairy enterprise. Depending on the time of year, the herdsman may work 100 percent of the time with dairy while during the summer and fall he spends part of the day working in the fields. In addition, my brother fills out a time card during the first week of each quarter which lists the number of hours that he spent working that week between the three enterprises. Then my sister-in-law summarizes the total number of hours worked on the farm that week and calculates percentages which show the distribution of hours between the enterprises during that quarter. Thus at the end of the year, the records for the four quarters (January, April, July and December) are totaled to determine the percentage of total wages paid that should be allocated to the farm's enterprises.

There is a simple way to allocate expenses (labor, repairs, shop supplies, tools, etc.) that are spread across all the farm's enterprises. First, the categories of farm income (milk, calves, cull cow, hay, corn, wheat, custom work, government payments, patronage dividends, etc.) are totaled to determine gross farm income. Then the income is distributed between the farm's enterprises to calculate the percentage of total income that was generated by that enterprise. For example, on a dairy and cash crop farm, the ratio could be 70% dairy and 30% cash crop. This allocation can then be used to distribute expenses between the enterprises. On a cash crop farm, the acres of each crop grown are totaled to determine the total crop acres. Remember, if a hay field is cut three times during the season, total hay acres will be calculated as follows: acres in the field X 3 cuts = total hay acres. For example, assume that there are 1,000 crop acres and shop expenses are \$12,000 for the crop enterprise. $\$12,000 \text{ (shop expense)} / 1,000 \text{ acres} = \$1.20 \text{ shop expense per acre}$. By accurately distributing labor, shop supplies, tools and repairs between the farm enterprises and crop acres, producers will be able to calculate accurate production costs. Likewise, understanding a farm's cost structure can be helpful in the decision making process to replace "tired iron" in the farm's equipment inventory.

Due to minimal profits, many producers own and operate equipment that is literally held together by "duct tape and baling wire." Some of this equipment is used every day on the farm. Thus it is not feasible to hire a custom operator to perform the tasks. Many operators are wondering when they should make the decision to replace this piece of equipment. For example, the following scenario occurred on a dairy farm: the dairyman owned a tractor with 14,000+ hours that was used for loading the mixer wagon. The repairs to keep this tractor operating had been mounting for the past three years. The spouse developed a sub category in the farm's record keeping system which tracked the repair bills for this worn out tractor for the past 3 years. When this couple met with their loan officer, the spouse was able to show the loan officer that the annual repairs bills for the old tractor were more than the loan payments to purchase a newer model tractor. Even though milk prices had dropped to the lowest levels in 30 years, the loan officer thought the purchase of another tractor was a wise investment because the spouse had records to justify the purchase.

In my opinion, the income and expenses for enterprises (e.g. dairy, beef etc.) and crops should be analyzed over a five year time frame. Numerous producers apply lime and potash to their fields once every three years. Thus the lime and potash could be considered an “investment” in the field because the cost will be spread out over a three year period. However, the lime and potash expenses will be listed in the farm records during the year they were paid. Consequently, there may be significant variations in fertilizer expenses during the years when three year’s worth of lime and potash was applied to the fields. In the past three years, there has been significantly volatility in grain and fertilizer prices. A five year average will provide a more realistic assessment of the enterprise’s and crop’s profitability because the average will take into consideration the impact of drought on crop yields and the variability of crop prices and input costs.

Numerous producers believe that a cost accounting system will enable them to accurately calculate production costs for their farms’ crops and enterprises. For these producers, the big question is how to implement a cost accounting program which meets the needs on their farms? They feel that cost accounting systems will be time consuming. How will they ever start the process? Will this system work on their farm?

There are several quick and easy steps to implement a cost accounting system. First, the record keeper purchases a box of 50 manila folders and a box of paper clips. One folder will be used for each vendor and buyer (e.g., milk cooperative, grain, livestock, etc.) which the farm does business with. The folder will hold billing statements and sales receipts from that business. Paper clips will keep statements together in the order that they were received in the mail. Next, the producer creates a chart of accounts which will provide the information that is needed to make accurate and timely decisions. When the expense invoices arrive in the mail each day, the farmer roughly allocates the expenses to the chart of accounts. For example, a \$5,000 potash bill may be split between crops as follows: 50% corn, 20% beans and 30% hay. In this case, the fertilizer expenses would be broken down as follows: \$2,500 corn crop, \$1,000 beans and \$1,500 hay. This is a more precise distribution of fertilizer costs among crops because previously the entire bill was listed under the broad category of fertilizer expense. When developing the chart of accounts, the producer may wonder if an elaborate computer record keeping program is needed for a cost accounting program for his farm. The answer is NO!

A cost accounting system can be implemented using both computer and manual record keeping programs. The creation of a chart of accounts is the starting point for a cost accounting system. How many accounts does the producer need to make informed decisions? On many farms, producers use computerized record keeping programs that have the potential to create a chart of accounts with numerous categories. As a lender, I have worked with producers who had record books. The record keeper, usually the spouse, developed a simple chart of accounts which provided the information needed to make informed management decisions. On numerous occasions, the record keeper was able to read the numbers from the accounts faster than I was able to enter the information on my calculator. My sister-in-law strongly encourages producers to start out small with a limited number of accounts. As the record keeper becomes comfortable working with the cost accounting system, additional accounts can be added to meet the needs of

the business. The key to a record keeping system is the ability to find what you are looking for when you need it.

Supposedly Benjamin Franklin said, “Drive your business, let not your business drive you.” In an era of declining profit margins, cost accounting enables producers to precisely calculate their costs of production because all cash expenses are included in the production costs. Cost accounting provides a financial picture of the current operation and serves as planning tool for future decision making. Best wishes for a safe and profitable new year!

Introductory Tax Preparation Tax School

By L. Leon Geyer (gever@vt.edu), Professor, Agricultural Law, Department of Agricultural and Applied Economics, Virginia Tech

Introductory Tax Preparation

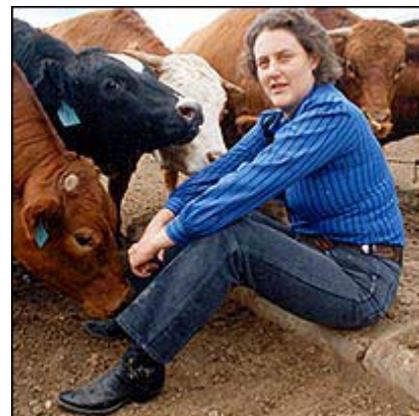
Three 1-day seminars on Introductory Tax Preparation are scheduled for 3 locations and held in January 2011 (Table 2). These Introductory Tax Preparation Seminars are designed for those who are new or returning to tax preparation and want a course in basic preparation for a professional. The course is based on the 1040 Form. Other forms are discussed in terms of income and the 1040 form.

Table 2. Introductory Tax Preparation Seminars		
Site	Date	Time
Roanoke	Jan. 4, 2011	8:30-4:45
Falls Church	Jan. 5, 2011	8:30-4:45*
Richmond	Jan. 6, 2011	8:30-4:45

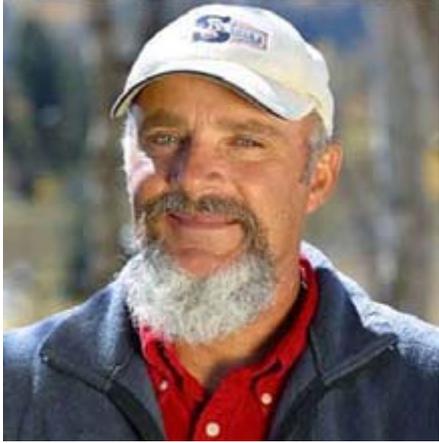
Temple Grandin to Speak at the 2011 Winter Forage Conferences

By Gordon Groover (xgrover@vt.edu), Extension Economist, Farm Management, Department of Agricultural and Applied Economics, Virginia Tech

Essential Topics in Animal Agriculture: What Farmers Need to Know is the theme for the Virginia Forage and Grassland Council (VFGC) and Virginia Cooperative Extension winter forage conferences. This is an ideal opportunity for all livestock producers to gain an understanding of animal psychology and behavior leading to: reduced stress and injury to animals and people; higher quality animal products; a safer work environment; improved animal welfare; and lower total costs of production.



This year's keynote speaker is Dr. Temple Grandin, Professor of Animal Science at Colorado State University and internationally known expert on animal behavior. She is listed in the 2010 TIME 100, Time magazine's annual list of the 100 most influential people in the world. Dr. Grandin will provide research-based insights and knowledge into animal behavior and how to improve transportation, handling, and working facilities to reduce stress and improve animal welfare.



Participants will also hear from Dr. Fred Provenza, Professor Emeritus in the Department of Wildland Resources at Utah State University and Dr. John Anderson, Livestock Economist for the American Farm Bureau Federation. Dr. Provenza will help farmers understand the practical science behind grazing behavior and how to train animals to enhance the environment. Dr. Anderson will provide insights into the global economics of animal agriculture and what that means for individual farm profitability.

The daylong conference will be repeated at three locations:

- Tuesday, January 18, in Wytheville at the Wytheville Meeting Center
- Wednesday, January 19, in Madison Heights at the Madison Heights Community Center
- (SOLD OUT - Please attend the conference at Madison Heights or Wytheville) Thursday, January 20, in Weyers Cave at the Weyers Cave Community Center.

The conferences will run from 8:30 am to 3:00 pm.

Please visit the VFGC web site (<http://vaforages.org>) for additional details and registration information.

The U.S. Department of Agriculture Natural Resources Conservation Service, Pfizer, and First Bank and Trust Company are all sponsors of these conferences.

SAVE THE DATE – March 16 & 17, 2011
3rd Annual Agricultural Trade Conference
Sheraton Waterside, Norfolk, VA



***Organized by the Virginia Department of Agriculture & Consumer Services,
the Virginia Farm Bureau Federation, the Virginia Port Authority and
the Virginia Tech Department of Agricultural and Applied Economics***

An outstanding and distinguished lineup of speakers invited.

Past presenters have included:

The Honorable Robert McDonnell, Governor of VA

Larry Pope, CEO Smithfield Foods

Joe Glauber, Chief Economist and Former USTR Ag. Negotiator

Bob Stallman, President, American Farm Bureau Federation

Go to www.vafarmbureau.org/Agriculture/trade_conf for program
updates & registration information.

Registration opens in December.

Questions, information, assistance, want to be added to mailing list?

Contact Brenda at 804.290.1155 or brenda.fleming@vafb.com or

Spencer at 804.290.1153 or spencer.neale@vafb.com

Calendar of Events

December

13-14 Income Tax Seminar. Richmond II. General Session: 8:30 AM – 4:45 PM; Evening Session: 5:00-7:00 PM. Cost: \$280; after October 1: \$310. No farm session is offered at this location. Ethics session offered on Day 1 is \$25 extra. Contact Income Tax School Registrar by phone at (540) 231-5182 or by email at vttax@vt.edu.

January

4 Introductory Tax Preparation Seminars. Roanoke. 8:30 AM - 4:45 PM. Cost: \$140; after December 3: \$160. Contact Income Tax School Registrar by phone at (540) 231-5182 or by email at vttax@vt.edu.

5 Introductory Tax Preparation Seminars. Falls Church. 7:30 AM - 3:45 PM. Cost: \$140; after December 3: \$160. Contact Income Tax School Registrar by phone at (540) 231-5182 or by email at vttax@vt.edu.

6 Introductory Tax Preparation Seminars. Richmond. 8:30 AM - 4:45 PM. Cost: \$140; after December 3: \$160. Contact Income Tax School Registrar by phone at (540) 231-5182 or by email at vttax@vt.edu.

18 VFGC Winter Forage Conferences. Wytheville, VA at the Wytheville Meeting Center. 8:30 AM - 4:00 PM. Visit <http://vaforages.org/> for details or contact Gordon Groover (540) 231-5850 or by email at vttax@vt.edu.

19 VFGC Winter Forage Conferences. Madison Heights, VA at the Madison Heights Community Center. 8:30 AM - 4:00 PM. Visit <http://vaforages.org/> for details or contact Gordon Groover (540) 231-5850 or by email at vttax@vt.edu.

20 (**SOLD OUT - Please attend the conference at Madison Heights or Wytheville**) VFGC Winter Forage Conferences. Weyers Cave, VA at the Weyers Cave Community Center. 8:30 AM - 4:00 PM. Visit <http://vaforages.org/> for details or contact Gordon Groover (540) 231-5850 or by email at vttax@vt.edu.

February

4&10 North American Farmers' Direct Marketing Association 26th Annual Convention. Baltimore, MD. See the following site for details www.nafdma.com/NAFDMA2011/2011Welcome/ or call 413-529-0386.

March

16&17 3rd Annual Agricultural Trade Conference. Sheraton Waterside, Norfolk, VA. Visit the following web site for details as they become available www.vafarmbureau.org/Agriculture/trade_conf