Virginia Cooperative Extension

Farm Business Management Update
April-May 2004

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 use this information in your on-going Extension programs and circulate to all Extension staff. **Farm Business Management Update** is electronically accessible via the Virginia Cooperative Extension World Wide Web site (at http://www.ext.vt.edu/). To see the articles listed in the reverse chronological order, select "News," then select "Farm Business Management Update" listed under the heading "Periodicals."

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News from the Department of Agricultural and Applied Economics

Dr. Herbert H. Stoevener assumed the duties as Interim Head for the Department on April 1, 2004. His position is half-time and temporary (perhaps for a year) until funds become available to fill this position on a regular basis.

This assignment is not entirely new for Dr. Stoevener. He served as Head for the Department from 1980 to 1991. After that, and until his retirement from Virginia Tech in 1998, he worked in several capacities in the office of the University Provost in the international programs area.

Dr. Stoevener has a life-time of experience with the land grant university system. He did his undergraduate work in agriculture at Cornell University and his graduate work in agricultural economics at the University of Illinois, and was a faculty member for 18 years in agricultural economics at Oregon State University before coming to Virginia Tech. His teaching and research interests have been primarily in the economics of natural resource management.

Dr. Stoevener replaces Dr. Leon Geyer as Department Head. Dr. Geyer continues his very active program in the department in teaching, extension, and research.

Mid-Atlantic Regional Cropping Systems Project: Preliminary 1998-2002 Economic Results

By Jim Pease and Mark Alley

The Mid-Atlantic Regional Cropping Systems Project (MARCSP) was conducted from 1998-2002 to study alternative rotational strategies for Eastern Virginia grain producers. Replicated trials compared a conventional-till, 3 crops in 2-year rotations (Rotation 1), a no-till, 4 crops in 3-year rotations (Rotation 2), and an intensive no-till, 4 crops in 2-year rotations (Rotation 3) grown with site-specific management practices and commercial-scale equipment in Caroline County. Each phase of every rotation was grown during each of the five years of the study. Table 1 summarizes all three rotations and the crops grown in each. Trials were also replicated across each of the four soil types on the 60-acre study site. Soils included two low productivity Bojac soils and two high productivity Wickham soils. Strips were laid out across soil types. All crops were grown without irrigation.

Table 1: Rotation Sequences of Mid-Atlantic Regional Cropping Systems Project

Year	Rotation 1	Rotation 2	Rotation 3
1	CT Wheat / NT DC Soybeans	NT Wheat / NT DC Soybeans	NT Wheat / NT DC Soybeans
2	NT FS Corn	NT FS Corn	NT Barley / NT DC Corn
3	(Repeat Rotation)	NT FS Soybeans	(Repeat Rotation)

CT = Conventional-Till NT = No-Till DC = Double Cropped FS = Full Season

Table 2: Average Crop Yields by Rotation and Soil, MARCSP, 1998-2002					
Rotation	**Crop**	**Bojac1**	**Bojac2**	**Wickham3**	**Wickham4**
		(bu/acre)			
1	CT Wheat	74	43	78	83
	DC NT Soybeans	33	31	43	44
	FS NT Corn	104	80	168	160
2	NT Wheat	62	38	75	76
	DC NT Soybeans	33	24	44	40
	FS NT Corn	109	74	164	174
	FS NT Soybeans	47	29	58	60
3	NT Wheat	49	31	69	68
	DC NT Soybeans	35	26	44	44
	NT Barley	83	55	111	108
	DC NT Corn	94	54	91	104
CT = Conventional-Till NT = No-Till DC = Double Cropped FS = Full Season					

The quality of the soils is clearly indicated in the average yields obtained by the MARCSP (Tale 2). The poor quality and droughty Bojac2 soil consistently yields well below the other soils for every crop and rotation. The Bojac1 soil produces some yields that are competitive with the high-quality Wickham soils (Rotation 1 Conventional-Till wheat and Rotation 3 DC corn), but generally produces yields that are intermediate between the low- and high-quality soils. Comparing across Rotations 1 and 2, FS corn yields are similar, but Rotation 3 DC corn yields are 10-45% lower than FS yields, with the largest differences on the best soils. DC soybean yields are very similar across rotations within the same soil, with the exception of the relatively high average yield for the poorest soil in Rotation 1. FS soybeans outperform DC soybean yields on better soils by approximately 25%. Conventional-Till wheat produces better yields than No-Till wheat on all soils and in all rotations. Rotation 2 No-Till wheat yields are 10-16% below those of Rotation 1 Conventional-Till wheat, but Rotation 3 No-Till wheat yields lag much further behind, probably due to the difficulties of timely and appropriate wheat seeding after the DC corn harvest. Overall, yields emphasize the importance of site- and soil-specific crop management, since a poor soil such as Bojac2 may yield less than one-half that of a good soil, even with top management as in the MARCSP.

In general, Rotation 1 and 2 yields are very similar, with Rotation 1 yields slightly higher for certain crops on some soils. Only an economic analysis can determine if any rotation obtains better returns than the others. Yields and input quantities from the study, along with input and commodity prices and expert opinion on machinery complements and efficiencies, were used to analyze machinery costs and net returns on 12 simulated 2,000-acre farms in eastern Virginia. This farm size is representative of top management and efficient machinery use in the mid-Atlantic Coastal Plain region. Each farm is assumed to be composed entirely of a single soil type (Bojac1, Bojac2, Wickham3, and Wickham4) growing one of the three rotations. To reflect the rotations and yields in the MARCSP, the total farm acreage was divided so that each phase of a rotation was grown each year (Table 3).

Table 3: Acreage Harvested on Simulated Farms 1998-2002, 2000 acres each soil type		
Rotation	**Crop**	**Acres**
1	CT Wheat	1,000
	DC NT Soybeans	1,000
	FS NT Corn	1,000
2	NT Wheat	667
	DC NT Soybeans	667
	FS NT Corn	667
	FS NT Soybeans	667
3	NT Wheat	1,000
	DC NT Soybeans	1,000
	NT Barley	1,000
	DC NT Corn	1,000
CT = Conventional-Till NT = No-Till DC = Double Cropped FS = Full Season		

Although machinery complements on the simulated farms do not vary across soil types or years, they do vary across rotations. Rotation 3 requires significantly more equipment to accomplish planting and harvesting in a timely manner, while the least intensive rotation (Rotation 2) can adequately handle tasks with much less equipment. Each simulated farm requires one or more 235HP tractors and 290HP combines, one 60-foot, self-propelled sprayer, and other appropriately sized equipment. For the analysis, all equipment is assumed to be new, at prices normalized and averaged in 2002-dollar terms (as were all other input and commodity prices). Machinery costs for each power unit and implement were estimated using the MACHDATA machinery cost spreadsheet developed by Lazarus and Selley (who estimate machinery costs each year for Doane's).

Resulting machinery costs per crop acre and per acre over each 2000-acre farm are presented in Table 4.

Table 4: Machinery costs per Acre on Simulated Farms by Crop and Rotation		
Rotation	**Crop**	**Machinery Cost**
		($/acre)
1	CT Wheat	78
	DC NT Soybeans	33
	FS NT Corn	42
Average*		**77**
2	NT Wheat	53
	DC NT Soybeans	32
	FS NT Corn	41
	FS NT Soybeans	34
Average		**53**
3	NT Wheat	59
	DC NT Soybeans	42
	NT Barley	50
	DC NT Corn	44
Average		**98**
*Rotation machine cost is per acre per year, other machine costs by crop		
CT = Conventional-Till NT = No-Till DC = Double Cropped FS = Full Season		

Average annual machine costs per acre differ considerably between rotations, depending on cropping intensity and the necessary timeliness of field activities. Rotation 2 machine costs are dramatically lower than the other rotations because the lower cropping intensity (4 crops in 3 years) and the efficiency of No-Till cropping operations require only one 235HP tractor and a reduced set of other equipment. It should be emphasized that these costs reflect efficient utilization of equipment necessary to cover 2,000 acres in a timely manner, and actual machine costs on Virginia farms will differ depending on age and purchase conditions of equipment, acres covered by equipment, and a host of other factors.

Net revenue for each crop and rotation on the simulated farms was calculated by subtracting variable and fixed costs from gross revenues (GR=yield times price). Harvest-month nominal prices from the period 1990-2002 were indexed to 2002 dollars, and the mean of such prices was applied to replicate-level yields in order to calculate gross revenues. Mean commodity prices were $1.38/bu for barley, $2.34/bu for wheat, $4.92/bu for soybeans, and $2.26/bu for corn. Similarly, nominal seed, fertilizer, chemicals, and other input prices were indexed to 2002 dollars. Average prices calculated in this manner remove the effects that market fluctuations and inflation/deflation may exert on estimates of annual costs and returns. Net revenue per acre for each rotation on each 2,000-acre farm is presented in Table 5.

Table 5: Average Net Revenue on Simulated Farms by Rotation and Soil*				
Rotation	**Bojac1**	**Bojac2**	**Wickham3**	**Wickham4**
	$/acre			
1	25	-43	119	119
2	64	-21	151	155
3	-25	-114	81	87
*Net revenues are per acre, per year, e.g. total net revenue for 2,000 acres on Bojac1 is 2,000 x $25 = $50,000				

Resulting net revenue indicates a strong competitive advantage for Rotation 2 across all four soil types on the 12 simulated farms. Rotation 2 net revenue exceeded that of Rotation 1 by $22-$46 per acre ($44,000-$92,000 per farm). As noted above, the machinery cost advantage of Rotation 2 is substantial, even though Rotation 2 yields are not appreciably higher than those of Rotation 1. Rotation 3 net revenue lags far behind the other rotations, although even this rotation on Wickham soils is able to generate $162-$174 thousand in net revenues from a 2,000 acre farm. No rotation can break even with a farm composed of Bojac2 soils, and only the Rotation 2 farm on Bojac1 soil is likely to generate enough crop net revenue to pay for farm overhead costs and taxes, as well as funds for reinvestment and family living expenses. Preliminary results from analysis of the MARCSP study indicate that Virginia crop producers should consider site-specific management, since net returns vary so dramatically between high quality and low quality soils. Treating a droughty soil like Bojac2 as one would a high-yielding soil like Wickham4 and based on the same yield expectations is a waste of money. Similarly, by applying "average" practices and inputs to a high-yielding soil like Wickham4, a producer would not take advantage of the soil's potential for high production and dollar returns. Results also indicate that choice of an appropriate machinery complement and resulting machinery costs can spell the difference for farm financial growth. Rotations 1 and 2 obtain similar yields, but low machinery costs for Rotation 2 create high profits for that rotation.

The above discussion presents only the initial results available from the MARCSP. Additional agronomic and economic analysis will be conducted, and more complete results and their implications will be provided to Virginia producers.

Land Lease Survey Report for Southside Virginia

By Eric Eberly

A land lease survey was conducted during the fall of 2003. Over 2,500 surveys were mailed out to farmers and landowners in Southside Virginia. One hundred and forty-two useable surveys were received from the counties of Appomattox, Bedford, Brunswick, Campbell, and Franklin.

The results of the survey are summarized in the following table. Since the fair value of land rent varies from situation to situation, the information contained is intended for reference purposes only. For more information on farm land leasing, contact your Area Farm Business Management Extension Agent.

Land Leasing Survey Results for Southside Virginia					
	Number of Responses	Number of Acres / #	Weighted Average $	Minimum $	Maximum $
Good Pasture	14	1,494	12.70	6.00	24.00
Average Pasture	39	3,765	10.75	1.34	29.00
Good Crop Land	19	682	18.90	7.75	46.00
Average Crop Land	33	2,465	18.06	7.15	35.00
Whole Farm per acre	25	2,593	22.89	6.00	65.12
Flue-cured Tobacco per lb.	12	12,724*	0.33	0.25	0.45
*Responses in which the farm land was rented at no cost were not included in these calculations.					

Other information relating to the surveys is as follows:

1. 49% of the surveys were from landlords, 51% from tenants.
2. Just over 22% of the leases reported were to family members.
3. Only 31% of the leases were written leases.
4. Of the written leases, 75% were for one year.
5. In over 89% of the leases reported, the tenant was responsible for weed control, brush hogging, minor fence repair, and fertilizer and lime applications.

Do Farmers Really Want to Eliminate the Estate Tax?

By Daniel Osborne

One of the hot topics in the political arena for farmers is the debate over the elimination of the so called "Death Taxes." The phrase certainly makes for a horrible combination of two things humans would like to avoid, but can't – death and taxes. Is it possible that it would be advantageous for farmers not to eliminate the estate tax if given the chance? To give the question proper consideration, I think it is important to bring to light some information that is often overlooked. That information is the impact on income taxes that would result from the elimination of the federal estate tax. You must realize that there are both a federal estate tax and a Virginia estate tax. It is the federal estate tax that could have a significant impact on income taxes and, therefore, is the focus of this article.

By having the federal estate tax, beneficiaries of an estate are able to take advantage of a very important tax break called a "step-up in basis." This step-up in basis allows the beneficiary of an estate to claim a basis in the property inherited equal to the fair market value of that property at the time of the decedent's death. Suppose for example that John Farmer purchased a piece of property for $100,000. Several years later John died and left the property to Junior. At the time of John's death, his tax basis in the property was still $100,000, but the value of the property was $500,000. A step-up in basis would allow Junior to claim his tax basis in the property to be $500,000. If the estate tax is eliminated, no step-up in basis will be allowed. Without the step-up in basis, the beneficiary's basis in inherited property would be the decedent's cost basis or

zero if the cost basis could not be proven. So, in the example, Junior's tax basis would be $100,000 if there was no step-up in basis.

There are two possible advantages to getting a step-up in basis. First, depreciable property can be deducted on income taxes through depreciation. The second and probably most important advantage occurs in the event the property is sold. A step-up in basis allows more to be deducted from the sales price of the property and thereby reduces the taxable gain on the sale. If Junior sells the inherited property for $700,000, a step-up in basis would allow him to recognize a $200,000 gain ($700,000 minus $500,000) on his income taxes. However, without the step-up in basis, Junior would have to recognize a $600,000 gain ($700,000 minus $100,000). A step-up in basis would save Junior as much as $160,000 in income taxes.

A $160,000 reduction in income taxes is really nice. But the income tax savings would not count for much if it meant that he had to pay $245,000 in estate taxes to get those income tax savings. Is there a way for Junior to have his cake and eat it too? The answer is YES! So long as there is a federal estate tax and the decedent's taxable estate does not exceed the estate tax exemption amount, estate taxes can be avoided and beneficiaries can get a step-up in basis.

Currently, the federal estate tax exemption amount is $1.5 million. According to the 1997 Census of Agriculture, less than 8% of Virginia farms were valued over $1 million. Therefore, an exemption amount of $1.5 million should exclude over 90% of farmers from the federal estate tax. An alternative to eliminating the estate tax would be to increase the exemption amount to something like $5 million or $10 million, so that only a handful of farmers would have to pay federal estate taxes. One thing is for sure, having the federal estate tax affects a small percentage of farmers, but elimination of the federal estate tax would affect every farm in the country.

The Management Calendar

By Gordon Groover

I was on the Virginia Eastern Shore this week, wheat fields were green and growing and farmers had started to break ground. As I write this report in Blacksburg it's spitting snow, the sky is gray, and the temperatures are in the 30's. What happened to spring? It may take a few more weeks and some sunshine before field work gets under way up here in the mountains. But spring is coming.

Calendar Items

Listed below are the items that need to be included on the farm business managers' calendar for spring of 2004.

- Cut fertilizer costs by using poultry litter - Farmers outside of Augusta, Page, Rockingham or Shenandoah Counties should investigate participation in the 2004 pilot project to develop self-sustaining poultry litter markets. If farmers meet all requirements, cost-share is available to move litter out of the major poultry producing counties. For additional information on the program and requirements for cost share, contact your local

soil and water conservation district, Virginia Cooperative Extension office or DCR regional office for an application. A brochure can be found at http://www.dcr.state.va.us/sw/docs/poultry.pdf . Funding will be allocated for complete and approved applications on a first-come, first-served basis. For more information call Scott Ambler at (804) 786-2235.

- BSE had increased the interest in food safety and traceability of all food stuffs. The Economic Research Service of USDA release a publication that helps explains the current baseline within the food industry and looks to public and private investments that will lead to strengthening of the traceability of all food stuff. Agricultural Economic Report No. (AER830) "Traceability in the U.S. Food Supply: Economic Theory and Industry Studies" can be found at http://www.ers.usda.gov/Publications/AER830/.
- Consider getting a copy of "Building a Sustainable Business: A Guide to Developing a Business Plan for Farms and Rural Businesses" for your library. This publication is a useful tool for all new farms and small business. The order form and a detailed description can be found at http://www.sare.org/htdocs/pubs/. The 280-page publication follows farmers Dave and Florence Minar through a major transition on their Minnesota dairy farm and includes blank worksheets and step-by-step strategies for developing a detailed, lender-ready business plan to take advantage of new opportunities. Costs $14 plus $3.95 shipping.
- Need to keep abreast of agricultural policy and implications to the Southern Region? Bookmark the Agricultural Policy Analysis Center (APAC) at the University of Tennessee at http://www.agpolicy.org/news.html. APAC publishes a number of articles every month.
- Review first quarter livestock records and compare them to last year's; look for problems and successes.
- *Make sure your Virginia state income taxes are mailed in before May 1.*
- Follow-up with your lender to review and update your line-of-credit needs.
- This year we have higher prices for inputs and maybe higher cash prices, but do you know how your cash flow is doing? Keeping track of quarterly cash flows is critical and comparing them to the projected or historical cash flows can assist in identifying potential problems. Actual inflows or outflows that differ from their projections may not signal a problem, but understanding why there are differences will help you understand changes in the farm business. If you need to forecast cash flow for your farm business, take a look at "The Rolling Cash flow Forecaster" it simplifies the job of projecting cash flows. Our Canadian colleagues say, "this tool is especially useful when cash flow is tight: usually during business start-ups, reorganizations or periods of financial uncertainty." Cash flow management won't ensure that your business is profitable, but it may buy you enough time to make the changes needed for long-term viability. The Microsoft Excel spreadsheet can be downloaded free from the Alberta Ministry of Agriculture, Food and Rural Development at http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/bmi2609.
- An excellent source of information on Concentrated Animal Feeding Operation (CAFO) rules can be found at the web site for the Livestock and Poultry Environmental Stewardship Team. The team has developed 24 fact sheets that answer the most commonly asked questions about CAFO rules and policies. To read the fact sheets online,

or print off a copy for future reference, go to http://www.lpes.org/CAFO.html. The PDF version is free; printed copies can be obtained for a fee.

- New from USDA Economic Research Service is a clickable map "Farm And Farm-Related Employment" that estimates lists of farm and farm-related employment by State, farm production region, and farm resource region. Provided are data that show the importance of agriculture for metro and non-metro regions in each state by farm and farm-related industries. In Virginia, 1.4 percent of the workforce (60,696) in employed farm production employment, and 14.4 percent of the workforce or 626,134 workers are employed in farm and farm-related employment. See the following web site for details for all states http://www.ers.usda.gov/Data/FarmandRelatedEmployment/
- New from USDA Economic Research Service is a clickable map listing "State Fact Sheets." The state fact sheets contain frequently requested data for each state and for the total United States. These include current data on population, per-capita income, earnings per job, poverty rates, employment, unemployment, farm and farm-related jobs, farm characteristics, farm financial characteristics, top agricultural commodities, top export commodities, and the top counties in agricultural sales. See http://www.ers.usda.gov/StateFacts/ for details.
- New from USDA Economic Research Service is a look at Farmer Bankruptcies and Farm Exits in the US from 1899-2002. The report finds that bankruptcy has played only a small role in the overall decline in farm numbers over the last 70 years. Most of the decline in farm numbers occurred between the 1940s and 1970s, when bankruptcy filings were at relatively low levels. Farm numbers have even risen when bankruptcies have been relatively high or rising, such as during the early 1930s or early 1990s. See http://www.ers.usda.gov/publications/AIB788/ for details.
- Prepare crop record keeping system for a new year. If you do not have a crop record keeping system, consider purchasing the Doane's hand-kept crop and machinery notebook, "Field and Equipment Record Book." This notebook provides an inexpensive way of getting started. It can be ordered via the Internet at http://www.doane.com/bookshelf/shop.php or by calling (800) 535-2342, Extension 220. The price is less than $20.00. For a selection of computerized crop record keeping software take a look at the Agricultural Software Directory from Alberta Agricultural Food and Rural Development site: http://www.agric.gov.ab.ca/agdex/agsoft/index.html.
- 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. The release dates of most USDA reports are posted on the USDA Agency Reports Schedule Calendar and can be viewed at http://www.usda.gov/news/releases/rptcal/may2002.htm.
- Soybeans "could get 12-dollar ugly real fast" was mentions in March 16 Delta Farm Press article. Wow that will put a new wrinkle in plans for both crop and livestock producers. Take a look at Wayne Purcell's newsletter on locking in prices for the 2005 and 2006 years. His March 2, 2004 newsletter describes the methods to lock in long-term prices. The newsletter can be found at http://www.ext.vt.edu/news/periodicals/purcell/2004wp/09.html. VCE soybean budgets with $8.00 beans show an estimated $100 net returns per acre – might pay to read the Wayne Purcell's newsletter and update your marketing plan.

- Farmdoc at the University of Illinois has an online US Corn Balance Sheet and Price Tool to help educate individuals on supply and demand relationships using historical relationships. The interactive sheet presents 1) a completed balance sheet for the past year showing acreage, yield, supply, and consumption by category, year ending stocks, and the marketing year average price received by farmers and (2) the balance sheet estimates for the current and the next marketing year. This tool may be accessed directly at http://www.farmdoc.uiuc.edu/marketing/corn_balance_tool/corn_balance.asp

Now is the time to put your plans into action and enjoy spring after it warms up.

Rural Development Summit

By George McDowell

A Rural Development Summit on June 3 at the Natural Bridge Conference Center is in the planning by the Steering Committee for a Virginia Rural Development Council. At the Summit, progress since the last Summit in Charlottesville in September 2002 will be reported. Discussion will include how to bring the legislature's efforts to form a Center for Rural Virginia together with the effort to form a Rural Development Council that qualifies for federal funding. The Steering Committee has representation from rural health, planning agencies, K-12 educators, local government administrators, RC&D associations, USDA Rural Development, Farm Bureau, Extension, and State government among others. Contact George McDowell, Department of Agricultural and Applied Economics Virginia Tech, Blacksburg VA 24061-0401, by telephone at (540) 231-6848 or you can e-mail him at mcdowell@vt.edu.

Calendar of Events

June

3	Rural Development Summit, Natural Bridge Conference Center, Natural Bridge, VA. Contact George McDowell at (540) 231-6848 or by e-mail at mcdowell@vt.edu.
14-16	2004 Triennial Conference Change in Rural America: Social and Management Challenges Reports from the Frontline. Lexington, KY. For information visit the conference web site at http://www.ca.uky.edu/triennial/ or contact Gordon Groover at (540) 231-5850 or by e-mail at xgrover@vt.edu.