There were 271 farms represented in the final 2014 analysis of the Kentucky Farm Business Management Program. Of these 271 farms, 60 farms (22% of total) had 3,729 operator acres of burley tobacco, 42 farms (15.5% of total) had 693 operator acres of dark air-cured tobacco, and 38 farms (14% of total) grew 1,830 operator acres of dark fire-cured tobacco. Average production from all tobacco types was among the highest over the last five years. This was a rebound from 2013 levels which were the lowest in at least four years. Of the five regions reporting burley production, the Pennyroyal region reported the highest average yields (and acres) of burley production and the Ohio Valley region reported the highest average yields for burley and dark air production. Average yields for KFBM tobacco farms are in Table 1 below.

While dark air-cured tobacco saw a relatively modest increase in average prices in 2014, new crop burley prices decreased slightly and dark fired average prices stayed flat. Average price for old crop burley (2013 burley sold in 2014) was $2.06 per pound, while the 2014 burley crop saw an average price of $2.02 per pound. 2014 dark air-cured prices averaged $2.34 per pound for old crop and $2.37 per pound for new crop. 2014 dark fire-cured prices averaged $2.55 per pound for old crop and $2.58 per pound for new crop. Looking at new crop prices, burley tobacco prices have increased 18.8% since 2010 (from $1.70 per pound to $2.02 per pound) while dark air-cured and fire-cured prices increased 3.4% ($2.29 per pound to $2.37 per pound) and 8.4% (from $2.38 per pound to $2.58 per pound), respectively over the same time period.

KFBM farms are categorized by type: grain, beef, or dairy. There were 227 grain farms in 2014 (84% of the total). Table 2 summarizes tobacco production on these farms. Although not all of the grain farms produced tobacco and not all tobacco was produced on “Grain” farms, 97% of the burley acres, 98% of the dark air cured acres, and 99% of the dark fire cured acres are represented in the “Grain” category.

### Table 1. Average KFBM Tobacco Yields

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burley</td>
<td>2,223</td>
<td>2,228</td>
<td>2,268</td>
<td>2,103</td>
<td>2,391</td>
</tr>
<tr>
<td>Dark Air</td>
<td>2,804</td>
<td>2,723</td>
<td>2,771</td>
<td>2,398</td>
<td>2,784</td>
</tr>
<tr>
<td>Dark Fire</td>
<td>3,088</td>
<td>2,990</td>
<td>3,125</td>
<td>2,836</td>
<td>3,178</td>
</tr>
</tbody>
</table>

The highest yields for burley tobacco were recognized on the mid-sized farms (1000-1999 acres). The smaller farms (0-999 operator acres) produced the highest yielding dark air and dark fired tobacco. (In 2013 the smaller farms had the highest average yields for burley and dark air-cured while the largest farms had the highest yields for dark fire-cured.) Old crop for all three types of tobacco saw reduced prices as the size of the farm increased. New crop prices showed mixed results. Trends were similar with burley & dark air-cured tobaccos (smaller farms had the lowest price & the mid-sized farms had the best price). For dark fire-cured tobacco it was the largest farms that had the lowest price & the mid-sized farms again had the best price.
Many farmers have heard of GAP – Good Agricultural Practices, but few have any experience with the program. The purpose of this short article help farmers (and those who work with farmers) understand more about the GAP system in particular and food safety practices and audits in general. We’ll share the recent practical experience of UK’s Horticulture Farm’s GAP audit and certification.

Why should a farmer even care about GAP? One answer is that it incorporates principles of food safety. GAP is a set of practices for farmers to use which to reduce the risk of foodborne disease. There are two levels of GAP “certification” for farmers. One is certification that training has occurred and the other more rigorous level is third party GAP audit. A third party GAP audit can be done by the USDA or by an auditor licensed by the USDA Ag Marketing Service.

Market access is what drives most farms to get a third party GAP audit. Wholesalers, distributors and retailers want to provide safe food and limit their liabilities. One of their liability limiting strategies is to require the producers they buy from to verify that they use good practices. So, farmers who want access to these markets will need to get a third party GAP audit even though there is no current regulatory requirement for them to do so. (This will change for medium and larger operations when the new Food Safety Modernization Act regulations are released later this year.)

The UK Horticulture farm has about 30 acres of certified organic land in its total acreage. Because UK Dining Services did not have a local supplier of some produce products, it approached the Sustainable Ag program and offered to buy some products until local farms could fill the gap. But, since UK Dining and its procurement partners require GAP third party audit certification that meant that we would need to get a third party GAP audit.

Dr. Williams, Horticulture Dept. faculty member and organic program manager, made arrangements with the USDA and an audit was scheduled for June 5. A key element of a successful audit is good preparation. Because this part of the farm is certified organic, good records covering water, chemical and fertilizer use (yes, organic farms do use chemicals and fertilizers) and field histories are maintained.

The GAP audit has seven total sections, but only the relevant ones are evaluated. Since in our situation there is no wholesale distribution center, we could skip section 6. The audit investigated our practices such as: water sources, animal access to fields, worker sanitation, storage cleanliness and temperatures, traceability. There is a straightforward Audit Verification Checklist: http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5091326 which was used by the auditor.

The audit was not an unpleasant experience. The USDA auditor spent from 9:00 am to 2:00 pm on the farm. She explained that while this was an audit, it would also be a “conversation” about the practicalities of the practices being assessed. As a result, the audit was a useful learning experience. At the end, she gave us a draft response, indicating that we had probably passed – which was confirmed two days later. We learned that an audit is not even close to a visit to the dentist office.

The Kentucky Department of Agriculture has extensive GAP materials (see http://www.kyagr.com/marketing/GAP.html) and helps administer a cost share program to partially offset the cost of an audit, and will conduct mock audits to help managers prepare. Our audit cost about $2,000 (the cost of the auditor’s time and travel expenses), but for Kentucky farmers, it would be reduced by the KDA/Ky Horticulture Council cost share program.

If you want to learn more about GAP audits and the Food Safety Modernization act regulations, help is on the way. In the near future, we’ll have a workshop at UK Horticulture farm (in Fayette County). A session is also being planned for the January, 2016 Fruit and Vegetable Conference, and written materials and training sessions for farmers and agents are being designed.

Lee Meyer, lee.meyer@uky.edu
Mark Williams, mawillia@uky.edu
2014 Family Living Expenses

An important component to the sustainability of any business is the amount that they pay their employees. This can be a difficult cost to manage. However, when it involves paying yourself through the amount that you spend on family living, it can become even harder to manage and maintain. Added to this management is that without good and timely recordkeeping, it can be very hard to measure and monitor.

The Kentucky Farm Business Management Program (KFBM) measures the amount spent on family living on a subset of farms that are sole proprietors and provide complete family living information through their farm records. In 2014 there were 167 families whose data were used to measure family living. While the farms in the dataset may change from year to year, there are some important trends that can be learned through the data they provide.

In 2014, the average net farm income for farms providing family living data was $72,044; this is down from $258,471 in 2013, a decline of 72%. The decline in net farm income can be attributed to several factors and was seen throughout all of the farm types that KFBM measures. Factors attributing to declines in net farm income include reduced crop prices received, the new farm bill program that did not pay any government payments in the calendar year 2014 (except CRP), and input costs that did not reflect the new crop marketing conditions. For those farms providing family living data, this was the first decline in net farm income in over 5 years.

While average net farm income decreased significantly, the average total amount spent on family living increased from $72,221 to $74,475, an increase of 3% from 2013 to 2014. Spending increased in all categories (medical, life insurance, expendables and capital purchases), except for contributions which fell slightly.

To help supplement family living many families also have non-farm income. According to the data, the average amount of net non-farm income increased 11%, from $36,718 in 2013 to $41,218 in 2014. This was the highest net non-farm income in over 5 years.

Adjusting the amount spent on family living can be difficult, especially as families get accustomed to living a certain way, such as eating out often, going on vacations, and buying more things (clothes, cars). However, as we expect to experience a period of declining crop prices and thus decreasing farm profitability, it will become more important than ever to manage the amount of farm profits (or borrowed money) that is spent on operator wages, or otherwise referred to as family living. This can be a significant part of the difference between paying off the line of credit at the end of the crop season and having to refinance that debt over multiple years.

Jennifer Rogers, jennifer.rogers@uky.edu

KFBM Associations
"Every Day Grazed is Money Saved." This is a popular statement that I have seen and heard many times over the last eight years at forage conferences and meetings, referring to the more days you can graze and the fewer days you have to feed hay, the more profitable your cattle farm will be. It is a popular battle cry among forage specialists in some states. But is it true? The answer is that sometimes it is, and sometimes it is not. There are many cases in which cattle farmers can graze more days and be more profitable. But it simply isn’t correct to make the statement universally. We will explore the first and most important reason in this article.

The idea that we can be more profitable by grazing more days and feeding less hay is a powerful one, and at first glance seems reasonable. I have seen figures stating the average cost of a grazing day and then comparing this to the average cost of a hay feeding day. The average hay feeding day is shown to be considerably more expensive (correctly) and thus the argument goes that by each additional day we can graze, we will save the difference. If this difference is $.50 per grazing day for example, and we have 50 cows, we are saving $25 for each extra day that we graze the herd. That daily savings would buy you a decent lunch for two in most places in Kentucky, even in the big city of Lexington. But alas, in the world of economics there is no such thing as a free lunch, and no exception has yet been granted for extended season grazing.

The most important reason that this logic doesn’t hold is that we push the envelope and graze more and more days, those last few days grazing will not be at the same cost as the average cost of grazing – they will be higher, potentially much higher.

The most effective way I have found to help farmers understand this phenomenon without using lots of economic jargon is with the following analogy: Think about picking apples out of one of those big standard sized trees that used to be popular in orchards, during a banner year when it is loaded with apples. Where do you start picking? You get all the fruit that you can easily reach from the ground, correct? This is where you can pick most efficiently.

Pretty easy, what do you do next? Well, you might get on your tippy toes and a go around the tree and get a few more. Were you as efficient in terms of apples picked per minute as you were when your feet were firmly planted on the ground? No, not quite.

Then what? If you grew up picking apples, you will probably know to gently pull down some of the longer, flexible branches to reach more apples, right? Are you as efficient here as on your tippy toes? Again, not quite. The cost to pick those apples has increased again. So you have picked all the apples you can by pulling branches down.

What do you do next? Depending on your coordination and dexterity, you either get a ladder or you climb up into the tree to start working on the rest. Are you going to be as efficient in either case as you were previously? Definitely not.

The point of this analogy is that you are proverbially and literally picking the low hanging fruit first, and then go on to the apples that are harder and harder to reach. Thus we start by picking the fruit that has the lowest cost, and as we work up into that tree, the cost per apple keeps increasing and increasing. Would you pick every last apple on that 30 foot tall tree? Probably not. Why? Because the cost of picking the hardest to reach apples will be greater than the value of those apples. But if we used the average cost of picking an apple (when we were picking on the ground) as our guide for what we should do, and not the actual cost to pick those last apples, it would tell us to pick every last apple (i.e. graze 365 days a year).

Think of grazing in this same light: The Grazing Tree. What are most livestock farmers going to do first to increase the number of grazing days and reduce the amount of hay they need to feed? The low hanging fruit years ago was simply applying nitrogen to pastures to boost production. Today, with nitrogen costs four to five times higher than it was 15 to 20 years ago, learning how to establish and manage a good clover stand is the new low-hanging fruit. This is probably the least cost method of increasing grazing days in 2015.
What’s next on the Grazing Tree? Realizing that everyone’s Grazing Tree looks a bit different (some are standards, some are semi-dwarfs, some are neatly pruned, some are wild and bushy, etc. – there is lots of diversity in the grazing world!), the next lowest hanging fruit is probably learning how to implement effective rotational grazing. These first two areas are where the Cooperative Extension Service in Kentucky has made great strides in my opinion. Both are relatively low cost methods to increase grazing days. But unfortunately, at some point we run out of apples at this level.

What’s next? There is more fruit left on the Grazing Tree and by golly a good conservative Kentuckian cattle farmer worth their salt is not going to let any of it go to waste.

We need some other practice to get at those apples. Stockpiled fescue, of course! We simply set aside pasture in early August to build up forage reserves, and defer this grazing into late fall and winter. This will buy us additional grazing days. Unfortunately, most cattle farmers in the real world don’t have excess pasture production in August to remove a portion of it from the rotation. If they did, they would be understocked for most of the grazing season, which is a cost of its own (foregone profit for the removed animals). So to implement a stockpiling program, there is an indirect cost of reduced stocking rate in addition to the direct costs such as the nitrogen. This is by no means saying you should not stockpile pastures for fall and winter grazing. What it is saying is that the cost to do this will be greater than the cost of a grazing day from the base pastures (what had been the average cost up to this point).

The same sort of logic will hold where the farther up in the Grazing Tree we go, the higher and higher the cost of a grazing day becomes. The average cost of a grazing day from the base pasture system (the low hanging fruit) has been long passed by. At some point, and that point will be different on every farm in Kentucky, the cost to graze an additional day will be greater than the benefit (reduced hay feeding day). The only rational reason we would extend our grazing days beyond this point would be to impress our peers at a field day, but it would decrease our net profit on the farm.

Assuming what has been covered so far is correct (I’m anticipating rebuttals), why would anyone advocate that cattle farmers graze 365 days a year or something close to that? The answer I think is that for quite a few years in the cattle cycle, up until about 2010 or 2011, we could have profitably gone a lot farther up into the Grazing Tree than we can today. During that time, profitability for cow-calf farms was low at best, and losing lots of money at worst. In a situation like this, reducing stocking rate is not much of a cost. If you are making next to nothing per animal, less animals will not change overall profit by much. But if at the same time you are significantly reducing cost per animal by feeding less hay, your overall profitability will increase.

There were probably some years during this low-profit era where it made sense to shoot for 365 days of grazing, or something close to that. This was the era in which I started working at UK Cooperative Extension Service (2006).

Today, however, with profits of $500 per cow and beyond, reducing stocking rate comes at a very high cost. If we have to reduce stocking rate by just 10% to implement a particular practice, that is a $50 indirect cost per cow that we need to add to the direct costs of that practice. Fifty dollars of hay for one cow will go a long way. Thus the same practices, or the degree that we push them, that may have been economically viable for extending the grazing season in 2006 may not be economically viable in 2015. Put simply, you were better off having a relatively low stocking rate and reducing the hay fed per cow in the last portion of the cattle cycle. Today, you are better off having a relatively high stocking rate and feeding more hay relative to what would have been optimal in 2006.

So how far up in the Grazing Tree should we go today? Unfortunately, we still need to go through a few more misconceptions related to this topic before we can move forward. We will pick this question back up in the next month, so stay tuned. In the meantime you can check out a video that goes into greater detail on the economics of extended season grazing and includes the birth of the Grazing Tree (picking apples in Shenandoah National Park, an overzealous park ranger, and Sir Isaac Newton’s Universal Law of Gravitation) at: https://www.youtube.com/watch?v=KcJgOvCJf30. The story of the Grazing Tree is at the very end of the video – enjoy.

Greg Halich, greg.halich@uky.edu

Greg Halich is an Associate Extension Professor in Farm Management Economics for both cattle and grain. He also raises stocker cattle and grass-finishes steers for direct sale in southern Woodford County. He can be reached at Greg.Halich@uky.edu or 859-257-8841.
Over the past 30 years, grocery store prices have risen 4.5 percent above economy-wide prices, indicating that food prices have risen faster than some other consumer goods, such as housing and transportation. Inflation-adjusted (real) prices for poultry and dairy products have been stable, while real prices for red meats, eggs, and fresh fruits and vegetables grew by 18, 21.5, and 40 percent between 1985 and 2014, respectively. Over the same time period, real prices for fats and oils, sugar and sweets, and nonalcoholic beverages fell. A main ingredient in many nonalcoholic beverages is corn sweeteners, which have decreased in price nearly 20 percent since 1985. Processed foods, many of which are included in the sugar and sweets category, are less affected by commodity-level price swings and are generally more closely linked to the costs of inputs such as electricity and wages. Industrial electricity costs and manufacturing wages both increased at a rate about 10 percent lower than overall inflation since 1985. This chart appears in “Growth in Inflation-Adjusted Food Prices Varies by Food Category” in ERS’s July 2015 Amber Waves magazine.

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