

TRACKING SALES AND PER-ACRE PROFITS FOR FARMERS' MARKET

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We started Pleasant Valley Farm from just bare land over 20 years ago; we grow a diverse selection of more than 40 types of vegetables and fruits with organic methods on about 7 acres of land, and everything we grow is sold at three area farmers' markets that operate year-round.

Good business management is probably the key factor to our success. We treat our farm as a business so that farming has become a lifestyle that we thoroughly enjoy. Our goal from the beginning was to reinvest \$10,000 each year back into the farm and it was critical to know what would give us the best return on our money in order to continually increase our profitability. In our early years, we realized that irrigation was essential because we felt the farm was losing at least \$10,000 each year due to inconsistent seedings and low yields. The year after irrigation was installed (at a cost of about \$15,000 for 4 acres); the result was an increase of \$30,000 in the first year of irrigating! Another early purchase was a barrel washer, which cost \$1000 (built by farmer Dick DeGraff). We could calculate from our records that the barrel washer paid for itself in only two weeks! Similar improvements we found to be good business expenditures over the years included: a walk-in cooler, field tiling for drainage, basket weeders, potato planter, tater point to dig potatoes, manure spreader specific for spreading compost, and a vegetable washer.

Some of our management decisions are made by a "hunch", but many are based on the records that we keep on our farm. Record keeping is very valuable for running a farm business. Maintaining very simple records works well for us and it requires minimal time outlay. We keep field seeding records in a notebook which consists of: date of seeding, variety, row footage, and spacing. From these few numbers, the square footage of each crop can be calculated. For example, many of our crops are planted in beds which have 4 rows planted 14" apart and are 100 feet long and have two feet between beds; each of these beds is therefore 550 square feet. We also use a simple spreadsheet in a notebook in the washing station that is filled in each harvest day showing the product, quantity packed for the market (bunches, heads, pounds, etc), and the quantity that returns from the market. From those few numbers, a total quantity sold of each product can be determined at the end of the year, and therefore its total approximate value.

These simple records help us utilize two rules that we employ in our management. The first rule is what we call the "\$15,000 per acre rule." What that means is that each crop is expected to have a minimum gross value of \$15,000 per acre **if extrapolated out**. This calculation is determined by using our records that show the square footage of each crop that is grown on and the actual dollar value that each crop produced for the entire year. The extrapolation is necessary because we do not grow an acre of most crops and we need to have a system to compare them evenly. Planting most crops intensively in rows 14 inch on center is important to utilizing small acreage to its fullest extent on our farm. If a particular crop is not making us \$15,000 per acre, then we must once again make a management decision on that crop to raise its value. Some of the options to accomplish this are by: improving our production and harvesting techniques; changing the variety; packaging or displaying it differently; increasing the price; or extending its

growing season. Another option is to discontinue growing the crop, which we rarely do because that would reduce our diversity.

To give an example of how this rule has worked for us, we will examine pea production. In an average year (or an average over several years), our records showed the following:

SUGAR SNAP PEAS: Income = 538 pints @\$3/pt = \$1,614 The Field space = 2,700 sq. feet
Since 1 acre = 43,560 square feet, the actual acreage planted is $2,700/43,560 = .062$ acre

Then, extrapolating to show the crop value for one acre: $\$1,614/.062 \text{ acre} = \$26,032$ per acre
Using these same formulas and our records, the values of the other peas were:

SHELL PEAS: \$8,614 per acre (\$2.50/quart) & SNOW PEAS: \$48,214 per acre (\$3.00/pint)

Thus, we decided to stop growing shell peas because the market would not bear a high enough price to make it profitable to grow according to our standards and there were no other options available (we do however grow some for ourselves each year to eat and freeze!). We increased our plantings of sugar snap and snow peas to accommodate what quantities the markets would bear. All numbers will vary by each farmer's spacing, so specific calculations should be done by each farmer to determine his/her most profitable crops.

Each year we evaluate some of our crops during the winter based on those simple records we keep 2 days per week on our harvest days; the calculations take only a day or so to give us the final data. We are beginning to use our computer more and more, but for the most part, pen, paper and a calculator give us the valuable data! The second rule that we employ in our management to maintain profitability is the "\$30 per hour rule." What that rule means is that each employee, while harvesting and preparing produce for the markets, must be earning a minimum value of \$30 per hour for each crop. For example, an average worker can pick 25 pounds of beans in an hour and for us, that is a value of \$75 since we retail them at \$3 per pound. Beans therefore meet our criteria and are profitable enough to grow. We maximize our income for the market by harvesting the most profitable crops first.

Season extension has been important to our farm since it makes certain crops more profitable and it extends our growing/selling season. Our traditional farmers' markets begin May first each spring, and season extension has given us the opportunity to provide customers with an abundance of produce in May, which is in high demand after a long winter. Selling early crops also produces an income of much needed spring money. Having produce for the first markets gives us the advantage of getting customers in the habit of coming to our table first, and hopefully sticking with us all season long. Likewise, season extension allows us to have the greatest amount of diversity for our October and November markets. Creating a colorful display filled with a diverse supply of abundant, fresh, quality produce draws customers every week.

Through the use of floating row covers and season extension houses, we have been able to extend the seasons successfully. Row covers have been used extensively on our farm to enhance growth and protect crops in the spring and fall from light frosts. Some of the crops that benefit from row covers are: peas, radishes, beets, spinach, lettuce, carrots, potatoes, swiss chard, beans, cucumbers, squash, turnips, herbs, and rhubarb. As an example, by placing row cover over our 30 ft by 27 ft bed of rhubarb in March, production starts one to two weeks earlier (May 1st in our area). We only harvest rhubarb for the month of May, and with the rowcover, our yield was 774 bunches @ \$2.50, hence \$1935 which extrapolates to over \$104,000 per acre!

Since 1992, we have been building season extension houses on our farm. We have termed these structures "fieldhouses" because they are temporary, sit directly on our growing fields, and lend themselves easily to rotations. We have utilized two homemade designs that have worked well for us; they are all 14 feet wide by 96 feet long with a 6-7 foot height in the center. We

built plastic-piped fieldhouses costing approximately \$600 each and metal-piped ones costing about \$800 each (materials only for both). The metal-piped houses can remain up all winter, since they can withstand snow loads. Each house takes 2 people about 4 hours to construct.

Many different vegetables can benefit from being grown in a fieldhouse. We have trialed lettuce, spinach, peppers, tomatoes, beets, swiss chard, basil, and interplanted radishes and scallions. We choose to extend the season on a particular vegetable due to the fact it is in high demand by customers, it is a high value crop, and we would not be able to have it at that time of year if it were not grown in fieldhouses. For example, lettuce is seeded weekly in 200-cell speedling trays in the greenhouse starting in February. Then in March, we transplant 600 lettuce plants each week for three consecutive weeks into one fieldhouse. Planting them 12 inches between rows and 8 inches in row gives us a total of 1800 early, marketable heads of lettuce. Therefore, this one fieldhouse provides us with lettuce for the month of May and the lettuce has a value of about \$4500 in gross sales (extrapolates out to \$145,000 per acre!).

Similarly, we start spinach in the greenhouse in late February in 200-cell speedling trays. As with lettuce, spinach is seeded every week then transplanted into two fieldhouses with 5-inch spacing between plants and 12 inches between rows. We plant one fieldhouse with Tye or Renegade spinach over a 1 to 2 week period and it produces a crop valued at about \$4700 gross when sold at \$8 per pound (extrapolates out to \$152,000 per acre!). The spinach leaves are re-picked about 5 days apart for 5-7 times. Our timing of transplanting crops out in the fields provides a continuous supply throughout the year. These fieldhouses have given us a great return over the years, especially since the structures are used over and over each year.

In 2006, we started a new venture utilizing high tunnels, with one completed in early 2007 and another completed in May 2008. They are permanent Rimol high tunnels (one 30'x144' and one 34'x144') with extended posts to allow us to have the sides open up extra high. We are learning how wonderful these high tunnels are for growing crops for year-round production. Our summer crops have included transplanted beans, basil, tomatoes, summer squash, and cucumbers. Winter markets are growing and expanding all around our area, with seven within an hour's drive of our farm! For fall, winter, and spring production, we are growing spinach, lettuce, mesclun, Asian greens, arugula, kale, and chard. We harvest weekly for our one Saturday market, and the greens in the winter are increasing our sales by over \$1000 each week. Spinach grown on only 11 rows (1632 square feet) yielded over \$11,000 in sales, which extrapolates to over \$293,000 per acre; similarly, the swiss chard was harvested off 800 square feet from Dec 13th to the end of June and yielded \$4998 in value, which extrapolates to over \$272,000 per acre!

Along with winter growing, we utilize our 20ft by 30ft root cellar, buried on 2 ½ sides under our large barn, to store unwashed crops. In the spring of 2007, a specialized cooling system was installed, which maintains a constant high humidity and cold condition (85% rh and 34-37 degrees). We increased production on crops that will store well for winter sales, and are learning more and more varieties of produce that lasts well under the right conditions. November harvested kale and swiss chard stored for over 6 weeks! Cabbage and leeks are lasting well into February, and the carrots, beets, and potatoes, will look near perfect in mid-summer when the new crops come in. Other crops we store are: radishes, celeriac, turnips, rutabagas, brussels sprouts, celery, kohlrabis, and cauliflower. Our root cellar holds about 24 tons of produce with a value of over \$85,000. The \$10,000 cooling system paid for itself in a matter of months! We will continue to raise our standards for our rules to insure our profitability; most of our prices and crops are at or above these thresholds of \$30 per hour and \$15,000 per acre already.