## **Phantom Yield Loss**

# Background

"Phantom yield loss" (PYL) is the controversial theory that dry matter is lost from the kernel while corn dries in the field. We say controversial because the agricultural community is decidedly split on this issue. Research on the subject reveals numerous scholarly articles from universities, seed companies, and ag tech companies with results ranging from no loss at all to as much as 2% yield loss/pt of field drying.

Several years ago our group began analyzing our operational costs and performing ROI analysis. During this process, we wanted to put a number to our long-held but unsubstantiated belief that "corn yields better when you harvest it wet". In analyzing the available literature we realized that most studies are not applicable at an operational level as we are not hand picking, shelling, and air drying the kernels in lab conditions. We needed to look at the broader picture and consider the multiple outside factors involved such as head shatter, ear drop, harvestability, and environmental factors. To do this, we analyzed years of data within our operation to find instances where we had harvested a portion of a field, were forced to move, and then finished harvest at a lower moisture. The side by side yield comparison revealed that our long-held belief was valid and allowed us to calculate a value for operational "PYL". Keep in mind, when we use "PYL" within our analysis we are including within that metric any possible dry matter loss as well as yield loss due to all the factors associated with harvest.

Below is an example from our data set, our results, and examples of how this metric is used within our operation.



### The Bottom Line

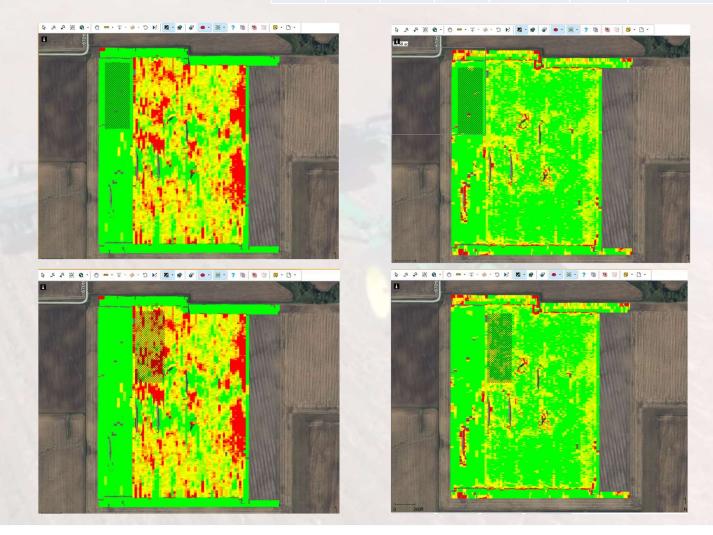
After compiling 12 data points using the method shown on the left, we eliminated the highest and lowest values as outliers and averaged the remaining. From this data we concluded that, on average, we lost **2.2%** dry yield/pt of field drying. In the interest of being conservative (and being the pessimistic farmers that we are) we chose to use **1.1%** for future calculations.

#### To put that number in perspective:

The drying cost breakeven with a 1.1% loss factor and 200 BPA corn at a \$4.25 selling price is about \$.047/pt

## Harvest 2023 Example

W	et	Di	ry	Moisture	Yield	% Loss (Dry Yld
Moisture	Yield	Moisture	Yield	Difference	Difference	Loss/Pt of Field Dry)
19.30	264.21	15.5	238.79	3.8	25.42	2.80%



### **Cashflow Analysis For The New Binsite**

APH bu inc/yr	Acres	Basis/Carry Gain (\$/Bu)	Storage Rental (\$/Bu)	Price of Corn (\$/Bu)		Avg Length of Storage (Months)
1.8	2000	\$0.40	\$0.15	\$5.00	8.50%	5.0

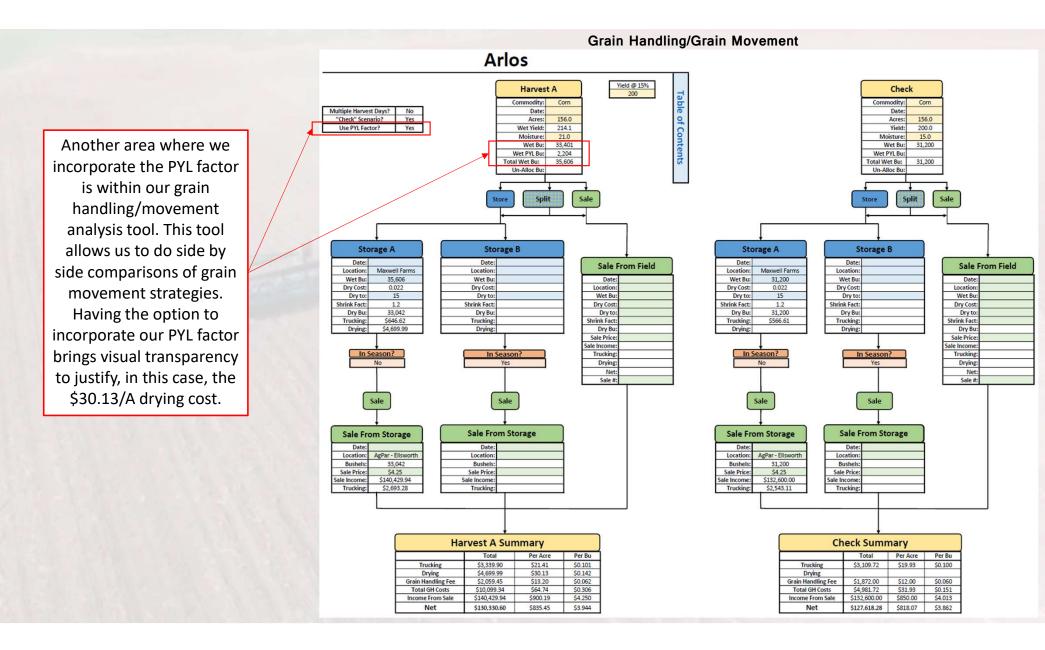
Year     APH     Total Bushes     Current Forced to Fall Market Bu     Gain/(Loss)     Store Storage to Rent     Rental Income     Harves Loss     Yearly Advantage       2023     190.0     380,000     294,000     \$117,000.0     (\$52,02.00)     53,000.00     \$7,980.00     \$20,000.0     \$43,017.5.91       2024     191.6     383,000     294,000     \$113,040.00     \$(\$52,700.00)     \$1,182,000.0     \$51,320.00     \$50,00     \$51,320.00										<b>_</b>	
2023     190.0     380,000     234,000     \$117,600.00     (\$52,062.50)     20,000     \$3,000.00     \$7,980.00     \$20,900.00     (\$44,175.39)       2024     191.8     383,600     297,600     \$119,400.00     (\$52,700.00)     \$1,000     \$2,460.00     \$5,055.60     \$21,098.00     (\$44,633.49)       2025     193.6     397,600     \$31,120     \$21,298.00     (\$44,633.49)       2026     195.4     390,800     304,800     \$12,192.00     \$3,130.00     \$3,80.00     \$8,22.49     \$21,098.00     (\$43,567.29)       2027     197.2     394,400     313,600     \$12,480.00     \$52,52.00)     2,000     \$3,00.00     \$8,22.40     \$21,092.00     \$8,130.19       2028     199.0     398,000     312,000     \$12,640.00     \$20.00     \$300.00     \$8,358.00     \$21,990.00     \$14,718.99       2030     202.6     405,200     313,900     \$12,800.00     \$57,162.90     0     \$50.00     \$8,784.00     \$22,484.00     \$63,956.90     \$22,880.00     \$63,746.90     \$22,880.00     \$63,746.90	_			Current Forced to	Basis/Carry	Money Cost to				Harvest Loss	Yearly
2024     191.8     383,600     297,600     \$119,040.00     (\$52,700.00)     16,400     \$2,460.00     \$8,055.60     \$21,098.00     (\$44,639.49)       2025     193.6     37,200     301,200     \$12,0480.00     \$(\$53,377.50)     9,200     \$5,130.00     \$8,205.80     \$21,098.00     \$(\$44,103.87)       2026     195.4     390,800     304,900     \$122,300.00     \$(\$54,612.90)     \$5,000     \$8,080.00     \$21,092.00     \$(\$34,350.27)       2022     197.2     394,400     315,600     \$122,620.00     \$2,000     \$300.00     \$8,438.00     \$21,098.00     \$(\$42,033.97)       2029     200.8     401,600     315,600     \$126,240.00     \$(\$55,870.00)     0     \$0.00     \$8,438.00     \$22,088.00     \$(\$41,718.99)       2031     204.4     406,800     322,600     \$127,680.00     \$57,162.50)     0     \$0.00     \$8,481.00     \$22,484.00     \$53,856.79       2032     2064.2     412,400     326,600     \$130,560.00     \$57,162.50)     0     \$0.00     \$8,481.00     \$22,288.00	Year	APH	Total Bushels	Fall Market Bu	Gain/(Loss)	Store	Storage to Rent	Rental Income	GH Advantage	Advantage	Cashflow
2025     193.6     387,200     \$120,480.00     \$51,20.00     \$51,20.00     \$51,220.00     \$51,220.00     \$51,220.00     \$51,220.00     \$51,220.00     \$51,220.00     \$51,220.00     \$51,220.00     \$51,220.00     \$51,220.00     \$51,220.00     \$51,220.00     \$51,220.00     \$52,682.00     \$52,682.00     \$52,682.00     \$52,682.00     \$52,682.00     \$52,682.00     \$52,682.00     \$53,850.00     \$52,882.00     \$52,288.00     \$54,433.60     \$52,288.00     \$54,433.60     \$52,288.00     \$54,433.60     \$52,288.00     \$54,433.60     \$52,288.00     \$54,435.00     \$52,288.00     \$54,435.00     \$52,288.00     \$54,435.00     \$52,288.00     \$54,435.00     \$52,288.00     \$54,435.00     \$52,288.00     \$54,435.00     \$52,288.00     \$54,435.00     \$52,288.00     \$53,856.79     \$50.00     \$50.00     \$58,592.00     \$52,288.00     \$53,856.79     \$50.00     \$50.00     \$58,664.00     \$52,682.00     \$53,856.79     \$50.00     \$50.00     \$58,592.00     \$52,888.00     \$53,856.79     \$50.00     \$50.00     \$58,866.04     \$52,288.0.00     \$53,856.79     \$52,2880.00     \$53,856.79	2023	190.0	380,000	294,000	\$117,600.00	(\$52,062.50)	20,000	\$3,000.00	\$7,980.00	\$20,900.00	(\$45,175.59)
2026     195.4     390,800     304,800     \$121,920.00     (\$53,975.00)     9,200     \$1,380.00     \$8,264.80     \$21,494.00     (\$43,67.29)       2027     197.2     394,400     308,400     \$123,360.00     (\$42,561.20)     5,600     \$84.00.00     \$8,282.40     \$21,692.00     (\$43,081.30)       2028     199.0     398,000     315,000     \$124,480.00     (\$55,280.0)     0     \$30.00     \$8,383.60     \$22,288.00     (\$44,718.99)       2030     202.6     405,200     319,200     \$127,680.00     (\$57,182.50)     0     \$0.00     \$8,543.80     \$22,286.00     (\$44,642.80)       2031     204.4     408,800     322,200     \$132,600.01     (\$57,182.50)     0     \$0.00     \$8,548.40     \$22,286.00     \$38,40.80       2031     206.2     412,400     326,6400     \$133,600.01     \$57,875.00     0     \$0.00     \$8,584.80     \$22,880.00     \$38,744.59       2033     208.0     415,600     333,000     \$134,880.00     \$59,77.50)     0     \$0.00     \$8,884.80	2024	191.8	383,600	297,600	\$119,040.00	(\$52,700.00)	16,400	\$2,460.00	\$8,055.60	\$21,098.00	(\$44,639.49)
2027     197.2     394,400     308,400     \$123,360.00     (\$54,612.50)     5,600     \$840.00     \$8,282.40     \$21,692.00     \$43,031.19       2028     199.0     398,000     312,000     \$124,800.00     \$(\$55,887.50)     0     \$0.000     \$8,38.00     \$21,890.00     \$42,480.00       2029     200.8     401,600     315,600     \$127,680.00     \$(\$55,887.50)     0     \$0.000     \$8,43.60     \$22,286.00     \$43,36.00     \$43,480.00       2031     204.4     408,800     322,600     \$129,120.00     \$57,800.00     0     \$0.000     \$8,64.00     \$22,484.00     \$53,849.69       2032     206.2     412,400     333,600     \$132,400.00     \$57,800.00     0     \$0.000     \$8,674.00     \$22,880.00     \$53,741.60     \$22,880.00     \$53,741.60     \$52,2880.00     \$53,741.60     \$52,2880.00     \$53,741.60     \$52,672.89     \$23,772.60     \$50.00     \$8,872.80     \$23,767.00     \$56,673.60     \$52,672.89     \$23,767.00     \$53,762.89     \$23,774.00     \$53,762.89     \$23,774.00     \$53,762.89	2025	193.6	387,200	301,200	\$120,480.00	(\$53,337.50)	12,800	\$1,920.00	\$8,131.20	\$21,296.00	(\$44,103.39)
2028     199.0     339,000     312,000     \$124,800.00     \$55,520.00     2,000     \$300.00     \$8,358.00     \$21,890.00     \$42,485.09       2029     200.8     401,600     315,600     \$125,640.00     \$55,525.00     0     \$0.00     \$8,433.60     \$22,088.00     \$42,485.09       2030     202.6     405,200     319,200     \$127,680.00     \$55,785.20     0     \$0.00     \$8,690.20     \$22,286.00     \$(30,642.89)       2031     206.2     412,400     326,400     \$139,660.00     \$57,162.50     0     \$0.00     \$8,660.40     \$22,880.00     \$(33,440.60)       2033     2066.2     412,400     333,600     \$133,460.00     \$58,700.00     0     \$0.00     \$8,716.00     \$23,078.00     \$(35,741.45)       2034     209.8     413,600     333,000     \$134,480.00     \$59,712.50     0     \$0.00     \$8,872.00     \$23,078.00     \$33,207.00     \$33,207.00     \$33,207.00     \$33,207.00     \$33,207.00     \$33,207.00     \$33,207.00     \$33,207.00     \$33,207.00     \$33,207.00     \$	2026	195.4	390,800	304,800	\$121,920.00	(\$53,975.00)	9,200	\$1,380.00	\$8,206.80	\$21,494.00	(\$43,567.29)
2029     200.8     401,600     315,600     \$126,240.00     (\$55,87.50)     0     \$0.00     \$8,433.60     \$22,088.00     \$41,718.99       2030     202.6     405,200     319,200     \$127,680.00     \$55,552.00     0     \$0.00     \$8,599.20     \$22,286.00     \$41,748.49       2031     204.4     408,800     322,800     \$129,120.00     \$57,180.00     \$0.00     \$8,584.80     \$22,484.00     \$53,956.79       2032     206.2     412,400     326,400     \$130,560.00     \$57,800.00     \$0.00     \$8,661.40     \$22,682.00     \$53,741.459       2033     208.0     416,000     330,000     \$134,800.00     \$59,775.00     0     \$0.00     \$8,811.60     \$23,076.00     \$33,838.49       2035     211.6     423,200     337,200     \$134,880.00     \$59,712.50     0     \$0.00     \$8,887.20     \$23,474.00     \$34,316.10.19       2037     215.2     430,400     344,800     \$133,5200.00     \$50.00     \$9,084.40     \$23,672.00     \$33,110.19       2038     217.7 </td <td>2027</td> <td>197.2</td> <td>394,400</td> <td>308,400</td> <td>\$123,360.00</td> <td>(\$54,612.50)</td> <td>5,600</td> <td>\$840.00</td> <td>\$8,282.40</td> <td>\$21,692.00</td> <td>(\$43,031.19)</td>	2027	197.2	394,400	308,400	\$123,360.00	(\$54,612.50)	5,600	\$840.00	\$8,282.40	\$21,692.00	(\$43,031.19)
2030     202.6     405,200     319,200     \$127,680.00     \$\$6,552.00     0     \$0.00     \$\$2,286.00     \$\$22,286.00     \$\$22,286.00     \$\$22,484.00     \$\$22,480.00     \$\$22,480.00     \$\$22,480.00     \$\$22,480.00     \$\$22,480.00     \$\$22,480.00     \$\$22,480.00     \$\$22,480.00     \$\$22,480.00     \$\$22,480.00     \$\$23,474.00     \$\$23,470.00     \$\$2	2028	199.0	398,000	312,000	\$124,800.00	(\$55,250.00)	2,000	\$300.00	\$8,358.00	\$21,890.00	(\$42,495.09)
2031     204.4     408,800     322,800     \$129,120.00     (\$57,162.50)     0     \$0.00     \$8,584.80     \$22,484.00     (\$39,566.79)       2032     206.2     412,400     326,400     \$130,560.00     (\$57,800.00)     0     \$0.00     \$8,660.40     \$22,682.00     (\$38,490.69)       2033     208.0     416,000     330,000     \$133,400.01     (\$59,975.00)     0     \$0.00     \$8,811.60     \$23,784.00     (\$33,460.01     \$59,975.00)     0     \$0.00     \$8,817.20     \$23,720.00     \$134,480.00     \$59,975.00)     0     \$0.00     \$8,817.20     \$23,720.00     \$134,880.00     \$59,975.00)     0     \$0.00     \$8,817.20     \$23,720.00     \$34,860.21     \$23,720.00     \$34,860.21     \$23,720.00     \$50,00     \$0.00     \$8,968.28     \$23,741.00     \$34,862.29       2035     217.0     434,000     344,400     \$133,760.00     \$60,987.50)     0     \$0.00     \$9,114.00     \$23,870.00     \$23,870.00     \$23,870.00     \$23,870.00     \$23,870.00     \$23,870.00     \$23,870.00     \$23,870.00	2029	200.8	401,600	315,600	\$126,240.00	(\$55,887.50)	0	\$0.00	\$8,433.60	\$22,088.00	(\$41,718.99)
2032     206.2     412,400     326,400     \$130,560.00     \$57,800.00     0     \$0.00     \$8,660.40     \$22,682.00     \$38,490.69]       2033     208.0     416,000     330,000     \$132,000.00     \$58,437.50     0     \$0.00     \$8,736.00     \$52,880.00     \$52,880.00     \$52,880.00     \$52,880.00     \$53,780.00     \$52,880.00     \$53,780.00     \$52,880.00     \$53,780.00     \$52,870.00     \$53,780.00	2030	202.6	405,200	319,200	\$127,680.00	(\$56,525.00)	0	\$0.00	\$8,509.20	\$22,286.00	(\$40,642.89)
2033     208.0     416,000     330,000     \$12,000.00     \$8,8,437.50     0     \$0.00     \$8,736.00     \$22,880.00     \$37,414.59       2034     209.8     419,600     333,600     \$133,440.00     \$50,075.00     0     \$0.00     \$8,811.60     \$22,880.00     \$33,600     \$134,880.00     \$59,712.50     0     \$0.00     \$8,87.20     \$23,276.00     \$33,262.39       2036     213.4     426,800     340,800     \$133,760.00     \$60,987.50     0     \$0.00     \$8,962.80     \$23,474.00     \$33,101.90       2037     215.2     430,400     344,400     \$137,760.00     \$60,987.50     0     \$0.00     \$9,938.40     \$23,870.00     \$53,203,474.09       2038     217.0     434,000     344,600     \$140,640.00     \$62,262.50     0     \$0.00     \$9,189.60     \$24,466.00     \$52,870.93       2040     220.6     441,200     355,200     \$142,600.00     \$62,537.50     0     \$0.00     \$9,340.80     \$24,464.00     \$24,860.00     \$24,860.00     \$24,860.00     \$24,860.00	2031	204.4	408,800	322,800	\$129,120.00	(\$57,162.50)	0	\$0.00	\$8,584.80	\$22,484.00	(\$39,566.79)
2034     209.8     419,600     333,600     \$133,440.00     \$\$59,075.00)     0     \$0.00     \$8,811.60     \$22,078.00     \$\$36,38.49]       2035     211.6     423,200     337,200     \$134,880.00     \$\$59,712.50)     0     \$0.00     \$8,887.20     \$23,276.00     \$\$33,2600     \$\$33,200     \$\$6,350.00     0     \$0.00     \$\$8,887.20     \$\$23,276.00     \$\$33,2600     \$\$33,200     \$\$6,350.00     0     \$0.00     \$\$8,887.20     \$\$23,276.00     \$\$33,2600     \$\$33,2600     \$\$50,00     \$\$0.00     \$\$9,038.40     \$\$23,277.00     \$\$33,410.60     \$\$23,672.00     \$\$33,2600     \$\$50,00     \$\$0.00     \$\$9,038.40     \$\$23,672.00     \$\$32,872.00     \$\$23,872	2032	206.2	412,400	326,400	\$130,560.00	(\$57,800.00)	0	\$0.00	\$8,660.40	\$22,682.00	(\$38,490.69)
2035     211.6     422,200     337,200     \$134,880.00     \$\$59,712.50     0     \$0.00     \$8,887.20     \$22,276.00     \$\$35,262.39       2036     213.4     426,800     340,800     \$136,320.00     \$\$60,350.00     0     \$0.00     \$\$8,962.80     \$23,474.00     \$\$33,110.91       2037     215.2     430,400     344,400     \$\$137,760.00     \$\$60,987.50     0     \$0.00     \$\$9,038.40     \$\$23,672.00     \$\$33,110.91       2038     217.0     434,000     348,000     \$\$139,200.00     \$\$60,250.00     0     \$0.00     \$\$9,138.40     \$\$24,656.00     \$\$33,900.0     \$\$24,056.00     \$\$24,256.00     \$\$24,056.00     \$\$2	2033	208.0	416,000	330,000	\$132,000.00	(\$58,437.50)	0	\$0.00	\$8,736.00	\$22,880.00	(\$37,414.59)
2035     211.6     423,200     337,200     \$134,880.00     \$\$59,712.50     0     \$0.00     \$8,887.20     \$23,276.00     \$\$35,262.39       2036     213.4     426,800     340,800     \$136,320.00     \$\$60,350.00     0     \$0.00     \$\$9,038.40     \$\$23,474.00     \$\$33,110.91       2037     215.2     430,400     344,400     \$\$137,760.00     \$\$60,987.50     0     \$0.00     \$\$9,038.40     \$\$23,477.00     \$\$33,110.91       2038     217.0     434,000     348,000     \$\$139,200.00     \$\$61,625.00     0     \$0.00     \$\$9,188.40     \$\$24,656.00     \$\$33,900.00     \$\$24,056.00     \$\$33,900.00     \$\$9,185.60     \$\$24,056.00     \$\$39,957.93     2040     \$22.6     441,200     355,200     \$\$142,080.00     \$\$62,252.50     0     \$\$0.00     \$\$9,185.60     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.00     \$\$24,656.	2034	209.8	419,600	333,600	\$133,440.00	(\$59,075.00)	0	\$0.00	\$8,811.60	\$23,078.00	(\$36,338.49)
2036     213.4     426,800     340,800     \$136,320.00     \$60,00     \$0.00     \$8,962.80     \$23,474.00     \$(\$34,186.29)       2037     215.2     430,400     344,400     \$137,760.00     \$(\$60,987.50)     0     \$0.00     \$9,038.40     \$23,672.00     \$(\$33,110.19)       2038     217.0     434,000     344,000     \$139,200.00     \$60,00     \$9,014.00     \$23,672.00     \$(\$32,034.09)       2039     218.8     437,600     351,600     \$140,640.00     \$(\$62,262.50)     0     \$0.00     \$9,114.00     \$23,672.00     \$(\$30,872.00)     \$24,668.00     \$24,666.00     \$(\$22,984.09)       2040     220.6     441,200     355,200     \$144,960.00     \$62,970.00     \$0.00     \$9,340.80     \$24,666.00     \$24,866.00     \$24,866.00     \$24,866.00     \$24,866.00     \$24,866.00     \$22,87.27.2.69]       2041     222.4     448,400     362,400     \$144,960.00     \$64,175.00     0     \$0.00     \$9,416.40     \$24,660.00     \$25,055.00     \$24,860.00     \$25,055.00     \$117,015.40     \$24,662.00	2035	211.6	423,200	337,200	\$134,880.00	(\$59,712.50)	0	\$0.00	\$8,887.20	\$23,276.00	Address of the second second
2037     215.2     430,400     344,400     \$137,760.00     \$60,987.50     0     \$0.00     \$9,038.40     \$23,672.00     \$(\$33,110.19)       2038     217.0     434,000     348,000     \$139,200.00     \$61,625.00)     0     \$0.00     \$9,138.40     \$23,672.00     \$(\$32,034.09)       2039     218.8     437,600     351,600     \$140,640.00     \$(\$62,262.0)     0     \$0.00     \$9,138.60     \$24,666.00     \$23,672.00     \$242,866.00     \$23,872.00     \$242,866.00     \$252,055.00     \$242,866.00     \$252,055.00     \$217,225.69     \$24,866.00     \$252,055.00     \$24,866.00     \$252,055.00     \$217,225.69     \$217,225.00     \$217,225.69	2036	213.4				(\$60,350.00)	0	\$0.00			
2039     218.8     437,600     351,600     \$140,640.00     (\$62,262.50)     0     \$0.00     \$9,189,60     \$24,068.00     (\$30,957.99)       2040     220.6     441,200     355,200     \$142,080.00     (\$62,900.00)     0     \$0.00     \$9,189,60     \$24,068.00     (\$29,881.89)       2041     222.4     444,800     358,800     \$143,520.00     (\$64,375.0)     0     \$0.00     \$9,416.40     \$24,466.00     (\$28,805.79)       2042     224.2     448,400     362,400     \$144,960.00     (\$64,175.00)     0     \$0.00     \$9,416.40     \$24,666.00     (\$22,653.00)     10     \$20.00     \$24,860.00     (\$22,653.00)     \$24,860.00     (\$22,653.00)     \$24,860.00     (\$22,653.00)     \$24,860.00     \$24,860.0	2037	215.2	430,400	344,400	\$137,760.00	(\$60,987.50)	0	\$0.00	\$9,038.40	\$23,672.00	(\$33,110.19)
2040     220.6     441,200     355,200     \$142,080.00     \$62,900.00     0     \$0.00     \$9,265.20     \$24,266.00     \$(\$29,881.89)       2041     222.4     444,800     358,800     \$143,520.00     \$(\$63,537.50)     0     \$0.00     \$9,265.20     \$24,266.00     \$(\$28,805.79)       2042     224.2     448,400     362,400     \$144,960.00     \$(\$64,175.00)     0     \$0.00     \$9,416.40     \$24,660.00     \$(\$22,729.69)       2043     226.0     452,000     366,000     \$146,400.00     \$(\$64,812.50)     0     \$0.00     \$9,467.40     \$24,860.00     \$22,580.00     \$117,015.60       2044     227.8     455,600     369,600     \$147,840.00     \$(\$66,87.50)     0     \$0.00     \$9,67.60     \$25,556.00     \$117,015.60       2045     229.6     459,200     373,200     \$149,280.00     \$(\$66,87.50)     0     \$0.00     \$9,643.20     \$25,556.00     \$118,091.70       2046     231.4     462,800     376,800     \$152,160.00     \$(\$67,725.00)     0     \$0.00 <t< td=""><td>2038</td><td>217.0</td><td>434,000</td><td>348,000</td><td>\$139,200.00</td><td>(\$61,625.00)</td><td>0</td><td>\$0.00</td><td>\$9,114.00</td><td>\$23,870.00</td><td>(\$32,034.09)</td></t<>	2038	217.0	434,000	348,000	\$139,200.00	(\$61,625.00)	0	\$0.00	\$9,114.00	\$23,870.00	(\$32,034.09)
2041     222.4     444,800     358,800     \$143,520.00     \$63,537.50     0     \$0.00     \$9,340.80     \$24,464.00     \$52,880.79       2042     224.2     448,400     362,400     \$144,960.00     \$54,175.00     0     \$0.00     \$9,340.80     \$24,464.00     \$52,860.00     \$24,862.00     \$24,862.00     \$24,862.00     \$24,860.00     \$25,850.00     \$21,725.00     \$25,850.00     \$117,015.00     \$25,055.00     \$117,015.80     \$25,255.60     \$118,091.70       2045     229.6     459,200     373,200     \$159,720.00     \$66,736.20     \$0.00     \$9,718.80     \$25,855.00     \$117,015.80       2044     233.2     466,400     380,400     \$152,160.00	2039	218.8	437,600	351,600	\$140,640.00	(\$62,262.50)	0	\$0.00	\$9,189.60	\$24,068.00	(\$30,957.99)
2042     224.2     448,400     362,400     \$144,960.00     \$54,16,40     \$2,4,66,200     \$2,7,22,69]       2043     226.0     452,000     366,000     \$144,960.00     \$54,816,20     \$2,4,66,200     \$2,4,66,00     \$2,2,66,200     \$2,7,22,69]       2043     226.0     452,000     366,000     \$144,960.00     \$56,4812.50)     0     \$0.00     \$9,492.00     \$24,860.00     \$25,655.00     \$117,015.60       2044     227.8     455,600     369,600     \$147,840.00     \$56,687.50)     0     \$0.00     \$9,432.00     \$25,556.00     \$117,015.60       2045     229.6     459,200     376,800     \$150,720.00     \$66,725.00)     0     \$0.00     \$9,744.30     \$25,454.00     \$119,173.00       2047     233.2     466,400     380,400     \$152,160.00     \$67,362.50)     0     \$0.00     \$9,794.40     \$25,455.00     \$120,433.00       2048     235.0     470,000     384,000     \$155,400.00     \$68,637.50)     0     \$0.00     \$9,974.40     \$25,850.00     \$121,320.00	2040	220.6	441,200	355,200	\$142,080.00	(\$62,900.00)	0	\$0.00	\$9,265.20	\$24,266.00	(\$29,881.89)
2043     226.0     452,000     366,000     \$146,400.00     (\$84,812.50)     0     \$0.00     \$9,492.00     \$24,860.00     (\$26,653.59)       2044     227.8     455,600     369,600     \$147,840.00     (\$65,450.00)     0     \$0.00     \$9,567.60     \$25,058.00     \$117,015.60       2045     229.6     459,200     373,200     \$149,280.00     (\$66,087.50)     0     \$0.00     \$9,643.20     \$25,255.00     \$118,091.70       2046     231.4     462,800     376,800     \$150,720.00     (\$66,087.50)     0     \$0.00     \$9,748.80     \$25,555.00     \$119,167.80       2047     233.2     466,400     380,400     \$153,600.00     (\$67,362.50)     0     \$0.00     \$9,794.40     \$25,855.00     \$120,243.90       2048     235.0     470,000     384,000     \$153,600.00     (\$68,637.50)     0     \$0.00     \$9,870.00     \$25,855.00     \$122,343.00       2050     238.6     477,200     387,600     \$157,920.00     (\$69,975.00)     0     \$0.00     \$10,021.20     \$26,	2041	222.4	444,800	358,800	\$143,520.00	(\$63,537.50)	0	\$0.00	\$9,340.80	\$24,464.00	(\$28,805.79)
2044     227.8     455,600     369,600     \$147,840.00     (\$65,450.00)     0     \$0.00     \$9,567.60     \$25,058.00     \$117,015.60       2045     229.6     459,200     373,200     \$149,280.00     (\$66,087.50)     0     \$0.00     \$9,67.60     \$25,256.00     \$118,091.70       2046     231.4     462,800     376,800     \$150,720.00     (\$66,087.50)     0     \$0.00     \$9,718.80     \$25,458.00     \$118,091.70       2047     233.2     466,400     380,400     \$153,160.00     (\$67,382.50)     0     \$0.00     \$9,718.80     \$25,850.00     \$120,243.00       2048     235.0     470,000     384,000     \$153,600.00     \$68,000.00     0     \$0.00     \$9,870.00     \$25,850.00     \$120,243.00       2049     236.8     473,600     387,600     \$155,040.00     \$68,637.50)     0     \$0.00     \$9,94.40     \$26,644.00     \$122,347.20       2050     238.6     477,200     381,200     \$155,940.00     \$69,972.50)     0     \$0.00     \$10,01.21.20     \$26,644.0	2042	224.2	448,400	362,400	\$144,960.00	(\$64,175.00)	0	\$0.00	\$9,416.40	\$24,662.00	(\$27,729.69)
2045     229.6     459,200     373,200     \$149,280.00     (\$66,087.50)     0     \$0.00     \$9,643.20     \$25,256.00     \$118,091.70       2046     231.4     462,800     376,800     \$159,720.00     (\$66,725.00)     0     \$0.00     \$9,643.20     \$25,256.00     \$118,091.70       2047     233.2     466,400     380,400     \$152,160.00     (\$67,7362.50)     0     \$0.00     \$9,794.40     \$25,455.00     \$119,167.80       2048     235.0     470,000     384,000     \$152,160.00     (\$68,000.00)     0     \$0.00     \$9,944.30     \$25,850.00     \$121,243.90       2048     235.0     470,000     384,000     \$155,040.00     (\$68,637.50)     0     \$0.00     \$9,945.60     \$22,856.00     \$122,396.10       2050     238.6     477,200     391,200     \$156,480.00     \$9,912.50)     0     \$0.00     \$10,021.20     \$26,444.00     \$122,347.20       2051     240.4     480,800     394,800     \$157,920.00     \$50.00     \$10,096.80     \$26,444.00     \$124,454.30 <td>2043</td> <td>226.0</td> <td>452,000</td> <td>366,000</td> <td>\$146,400.00</td> <td>(\$64,812.50)</td> <td>0</td> <td>\$0.00</td> <td>\$9,492.00</td> <td>\$24,860.00</td> <td>(\$26,653.59)</td>	2043	226.0	452,000	366,000	\$146,400.00	(\$64,812.50)	0	\$0.00	\$9,492.00	\$24,860.00	(\$26,653.59)
2046     231.4     462,800     376,800     \$150,720.00     (\$66,725.00)     0     \$0.00     \$9,718.80     \$25,454.00     \$119,167.80       2047     233.2     466,400     380,400     \$152,160.00     (\$67,362.50)     0     \$0.00     \$9,718.80     \$25,454.00     \$119,167.80       2048     235.0     470,000     384,000     \$153,600.00     (\$68,000.00)     0     \$0.00     \$9,794.40     \$25,652.00     \$120,243.90       2049     236.8     473,600     387,600     \$155,040.00     (\$68,037.50)     0     \$0.00     \$9,945.60     \$26,048.00     \$123,472.00       2051     238.6     477,200     391,200     \$156,480.00     (\$69,275.00)     0     \$0.00     \$10,021.20     \$26,246.00     \$123,472.80       2051     240.4     480,800     394,800     \$157,920.00     (\$69,912.50)     0     \$0.00     \$10,076.80     \$26,642.00     \$124,5428.30       2052     242.2     484,400     398,400     \$159,360.00     (\$70,550.00)     0     \$0.00     \$10,072.40     \$2	2044	227.8	455,600	369,600	\$147,840.00	(\$65,450.00)	0	\$0.00	\$9,567.60	\$25,058.00	\$117,015.60
2047     233.2     466,400     380,400     \$152,160.00     (\$67,362.50)     0     \$0.00     \$9,794.40     \$25,652.00     \$120,243.90       2048     235.0     470,000     384,000     \$153,600.00     (\$68,000.00)     0     \$0.00     \$9,794.40     \$25,652.00     \$121,320.00       2049     236.8     473,600     387,600     \$155,040.00     (\$86,637.50)     0     \$0.00     \$9,945.60     \$22,048.00     \$122,396.10       2050     238.6     477,200     391,200     \$156,480.00     (\$69,275.00)     0     \$0.00     \$10,021.20     \$26,642.60     \$122,3472.20       2051     240.4     480,800     394,800     \$157,920.00     (\$69,975.00)     0     \$0.00     \$10,021.20     \$26,644.00     \$124,472.20       2051     240.4     480,800     394,800     \$157,920.00     (\$59,912.50)     0     \$0.00     \$10,072.40     \$26,644.00     \$124,472.40       2052     242.2     484,400     398,400     \$157,930.00     (\$70,550.00)     0     \$0.00     \$10,172.40     \$	2045	229.6	459,200	373,200	\$149,280.00	(\$66,087.50)	0	\$0.00	\$9,643.20	\$25,256.00	\$118,091.70
2048     235.0     470,000     384,000     \$153,600.00     (\$68,000.00)     0     \$0.00     \$9,870.00     \$22,850.00     \$121,320.00       2049     236.8     473,600     387,600     \$155,040.00     (\$68,637.50)     0     \$0.00     \$9,945.60     \$26,048.00     \$122,396.10       2050     238.6     477,200     391,200     \$156,480.00     (\$69,275.00)     0     \$0.00     \$10,021.20     \$26,044.00     \$122,472.20       2051     240.4     480,800     394,800     \$157,920.00     (\$69,912.50)     0     \$0.00     \$10,096.80     \$26,444.00     \$122,472.20       2052     242.2     484,400     398,400     \$157,920.00     (\$69,912.50)     0     \$0.00     \$10,096.80     \$26,444.00     \$122,472.20       2052     242.2     484,400     398,400     \$157,930.00     (\$70,550.00)     0     \$0.00     \$10,172.40     \$26,644.00     \$122,562.40       2053     244.0     488,000     402,000     \$160,000.00     (\$70,833.33)     0     \$0.00     \$10,248.00     \$	2046	231.4	462,800	376,800	\$150,720.00	(\$66,725.00)	0	\$0.00	\$9,718.80	\$25,454.00	\$119,167.80
2049     236.8     473,600     387,600     \$155,040.00     (\$68,637.50)     0     \$0.00     \$9,945.60     \$26,048.00     \$122,396.10       2050     238.6     477,200     391,200     \$156,480.00     (\$69,275.00)     0     \$0.00     \$10,021.20     \$26,244.00     \$122,3472.20       2051     240.4     480,800     394,800     \$157,920.00     (\$69,275.00)     0     \$0.00     \$10,096.80     \$26,444.00     \$122,472.20       2052     242.2     484,400     398,400     \$157,920.00     (\$69,912.50)     0     \$0.00     \$10,096.80     \$26,444.00     \$122,472.20       2052     242.2     484,400     398,400     \$157,920.00     (\$70,550.00)     0     \$0.00     \$10,0172.40     \$26,644.00     \$122,5264.30       2053     244.0     488,000     402,000     \$160,000.00     (\$70,833.33)     0     \$0.00     \$10,248.00     \$126,546.00     \$126,526.67	2047	233.2	466,400	380,400	\$152,160.00	(\$67,362.50)	0	\$0.00	\$9,794.40	\$25,652.00	\$120,243.90
2050     238.6     477,200     391,200     \$156,480.00     (\$69,275.00)     0     \$0.00     \$10,021.20     \$26,246.00     \$123,472.20       2051     240.4     480,800     394,800     \$157,920.00     (\$69,912.50)     0     \$0.00     \$10,096.80     \$26,244.00     \$124,548.30       2052     242.2     484,400     398,400     \$159,360.00     (\$70,550.00)     0     \$0.00     \$10,172.40     \$26,642.00     \$125,624.40       2053     244.0     488,000     402,000     \$160,000.00     (\$70,833.33)     0     \$0.00     \$10,248.00     \$26,840.00     \$126,254.67	2048	235.0	470,000	384,000	\$153,600.00	(\$68,000.00)	0	\$0.00	\$9,870.00	\$25,850.00	\$121,320.00
2051     240.4     488,800     394,800     \$157,920.00     (\$69,912.50)     0     \$0.00     \$10,096.80     \$26,444.00     \$124,548.30       2052     242.2     484,400     398,400     \$159,360.00     (\$70,550.00)     0     \$0.00     \$10,172.40     \$26,642.00     \$125,624.40       2053     244.0     488,000     402,000     \$160,000.00     (\$70,833.33)     0     \$0.00     \$10,248.00     \$26,840.00     \$126,254.67	2049	236.8	473,600	387,600	\$155,040.00	(\$68,637.50)	0	\$0.00	\$9,945.60	\$26,048.00	\$122,396.10
2052     242.2     484,400     398,400     \$159,360.00     (\$70,550.00)     0     \$0.00     \$10,172.40     \$26,642.00     \$125,624.40       2053     244.0     488,000     402,000     \$160,000.00     (\$70,833.33)     0     \$0.00     \$10,172.40     \$26,642.00     \$125,624.40	2050	238.6	477,200	391,200	\$156,480.00	(\$69,275.00)	0	\$0.00	\$10,021.20	\$26,246.00	\$123,472.20
2053 244.0 488,000 402,000 \$160,000.00 (\$70,833.33) 0 \$0.00 \$10,248.00 \$26,840.00 \$126,254.67	2051	240.4	480,800	394,800	\$157,920.00	(\$69,912.50)	0	\$0.00	\$10,096.80	\$26,444.00	\$124,548.30
	2052	242.2	484,400	398,400	\$159,360.00	(\$70,550.00)	0	\$0.00	\$10,172.40	\$26,642.00	\$125,624.40
\$4,314,400.00 (\$1,910,020.83) \$9,900.00 \$282,534.00 \$739,970.00	2053	244.0	488,000	402,000	\$160,000.00	(\$70,833.33)	0	\$0.00	\$10,248.00	\$26,840.00	\$126,254.67
					\$4,314,400.00	(\$1,910,020.83)		\$9,900.00	\$282,534.00	\$739,970.00	

Deinsing	C1 400 000
Principal	\$1,400,000
Years	20
Rate	8.00%
Yearly Payment	\$142,593.09
Total Loan Cost	\$2,851,861.85
Interest	\$1,451,861.85

Chang	ges Workspace	
	Current	Proposed Add
Storage	86,000	400,000
Grain Handling/Bu	\$0.236	\$0.215
Avg Harvest Moisture	20.0	21.0

30 Year Investment					
Total Loan Cost	(\$2,851,861.85)				
Opp Cost Recovery	\$4,314,400.00				
Rental Income	\$9,900.00				
Storage cost of Money	(\$1,910,020.83)				
GH Advantage	\$282,534.00				
Harvest Loss Advantage	\$739,970.00				
Net:	\$584.921.32				

By eliminating the bottleneck and inefficiencies of the current binsite we feel that we can increase our average harvest moisture by at least 1%, thus capturing a "PYL" Advantage

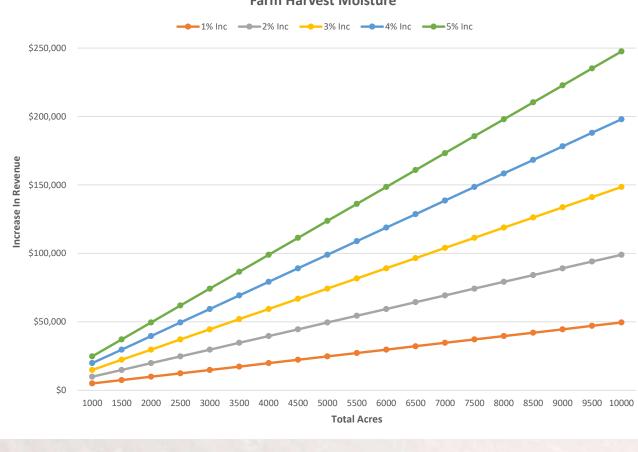


#### **The Big Picture**

The graph on the right\* is an illustration of how increasing your average farm moisture incrementally can increase your revenue. As operations strive for efficiency, it is our belief that "PYL" highlights the benefits that come from operational efficiency beyond lowering expenses.

\*The chart uses the following constants for its calculations

- "PYL"=1.1% dry yield loss/pt of field dry
- 200 bu/A Corn
- \$4.25/bu
- Drying cost of \$.022/pt



Additional Revenue by Total Acres Farmed Resulting From Increasing Average Farm Harvest Moisture