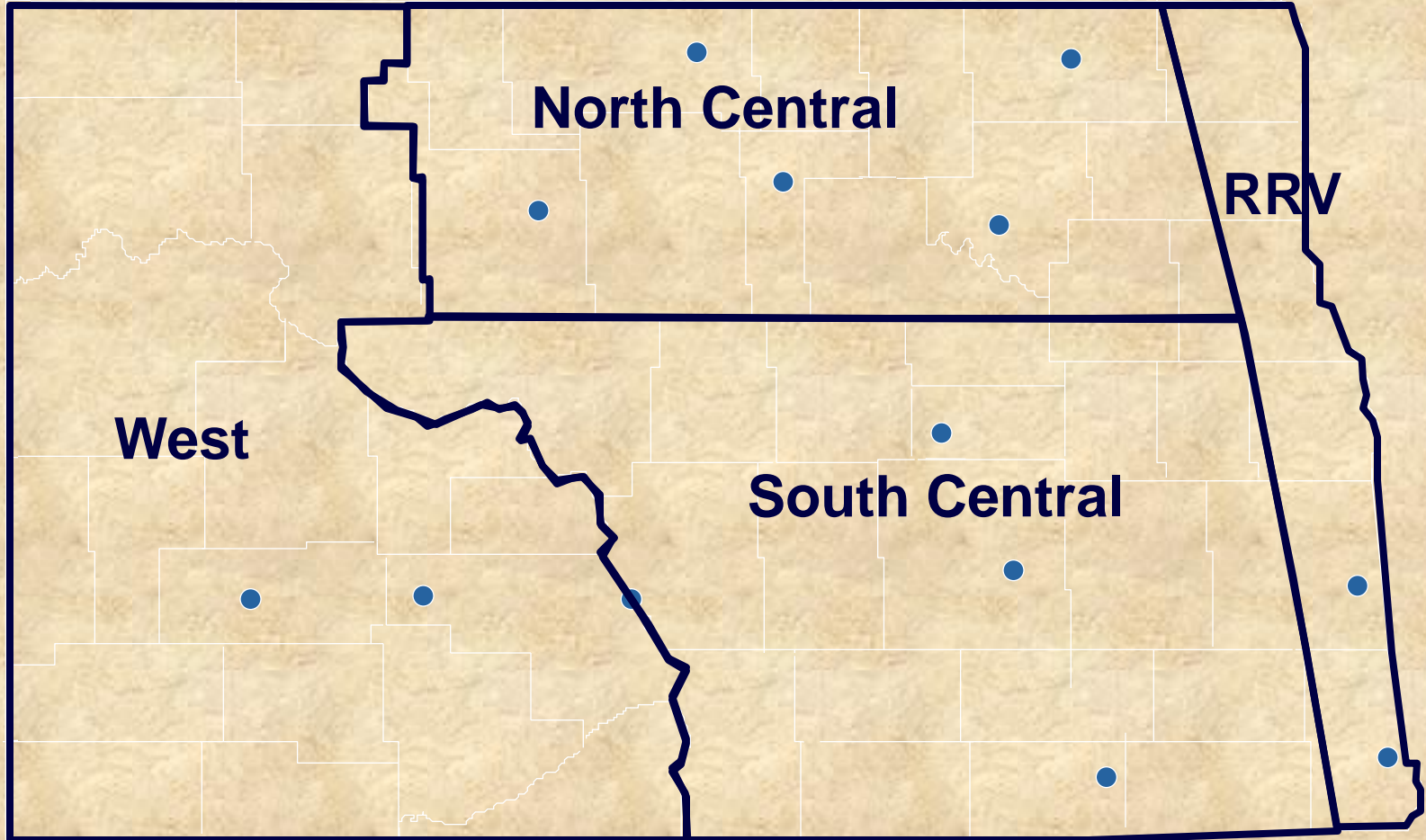




# **ND Farm & Ranch Business Management 2016 Region 3 Annual Report**

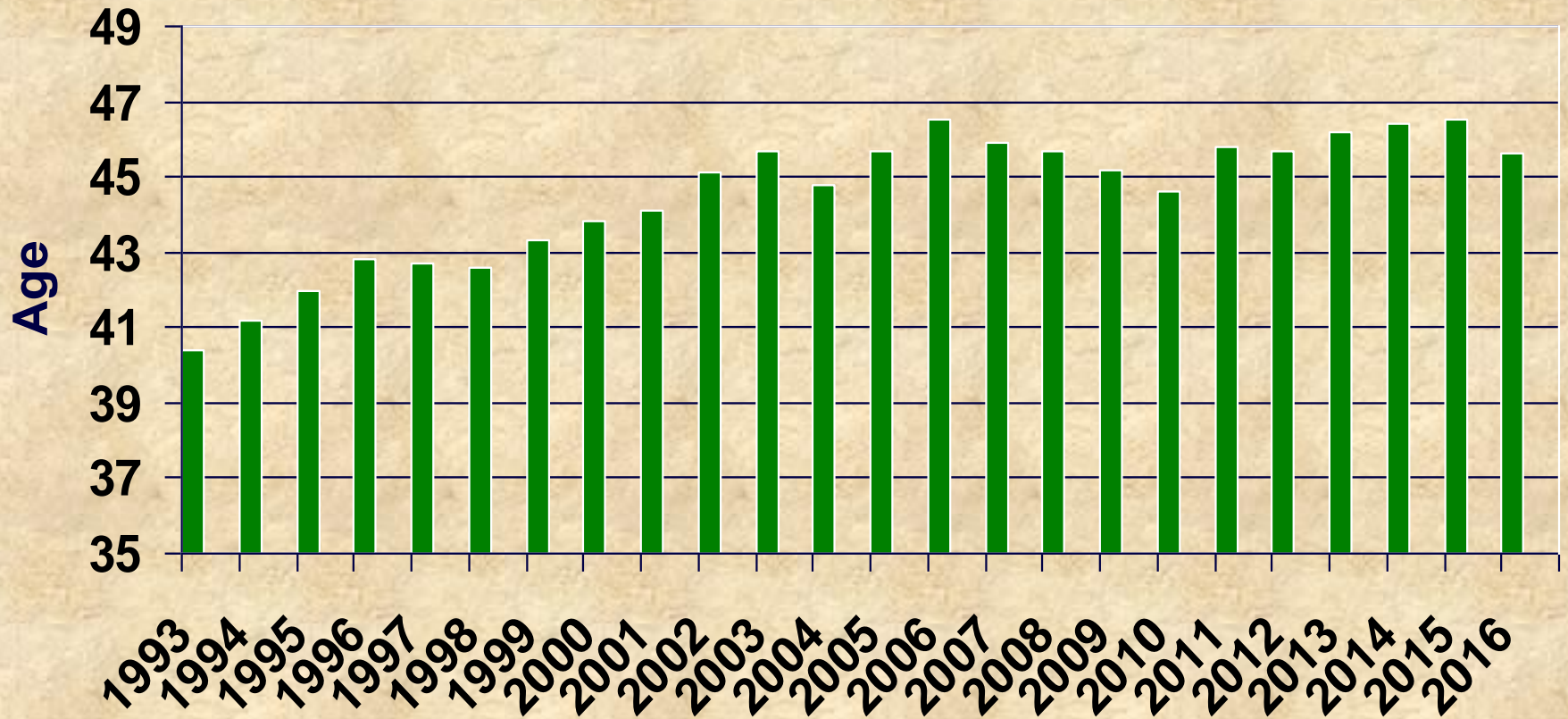
**Steve Metzger  
Carrington Research Extension Center and  
Carrington Public Schools  
Carrington, ND**

**Region 3 includes data from FBM Programs located in Bismarck(BSC), Carrington, Fargo(NDSCS), Jamestown(JVCTC), Oakes(JVCTC) and Wahpeton(NDSCS).**

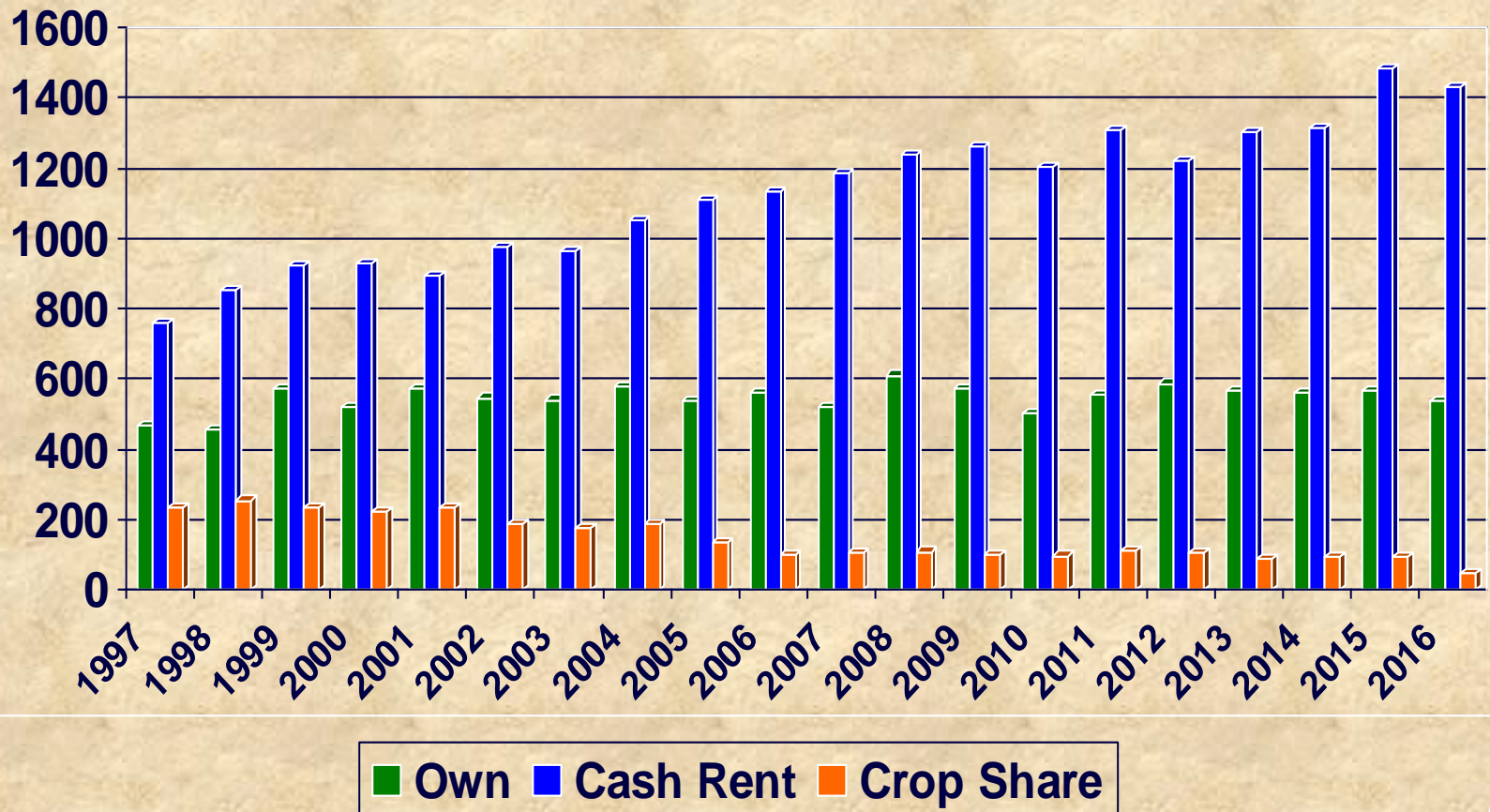


**WHAT TYPE OF FARMS  
MAKE UP THE  
BASE OF INFORMATION?**

# Average Farmer Age in Region III



**Crop acres totaled 2,013 in 2016,  
Increasing 220 acres or 12% since 2006 but  
6% or 135 acres less than in 2015.**



# Comparing 2006 to 2016 Farm Structure

- Crop land acres, including hay lands, have increased 220 acres per farm, up 12%
- Owned crop land acres have decreased slightly from 560 to 535 acres, or 4.5%
- Pasture acres have decreased by 12% or 75 acres per farm.
- Cash rented crop land acres have increased by 26% or 297 acres per farm.
- Share crop acres decreased by 51% from 101 to 49 acres per farm.
- Total acreage change of 6% or 145 acres, including pasture, since 2006.

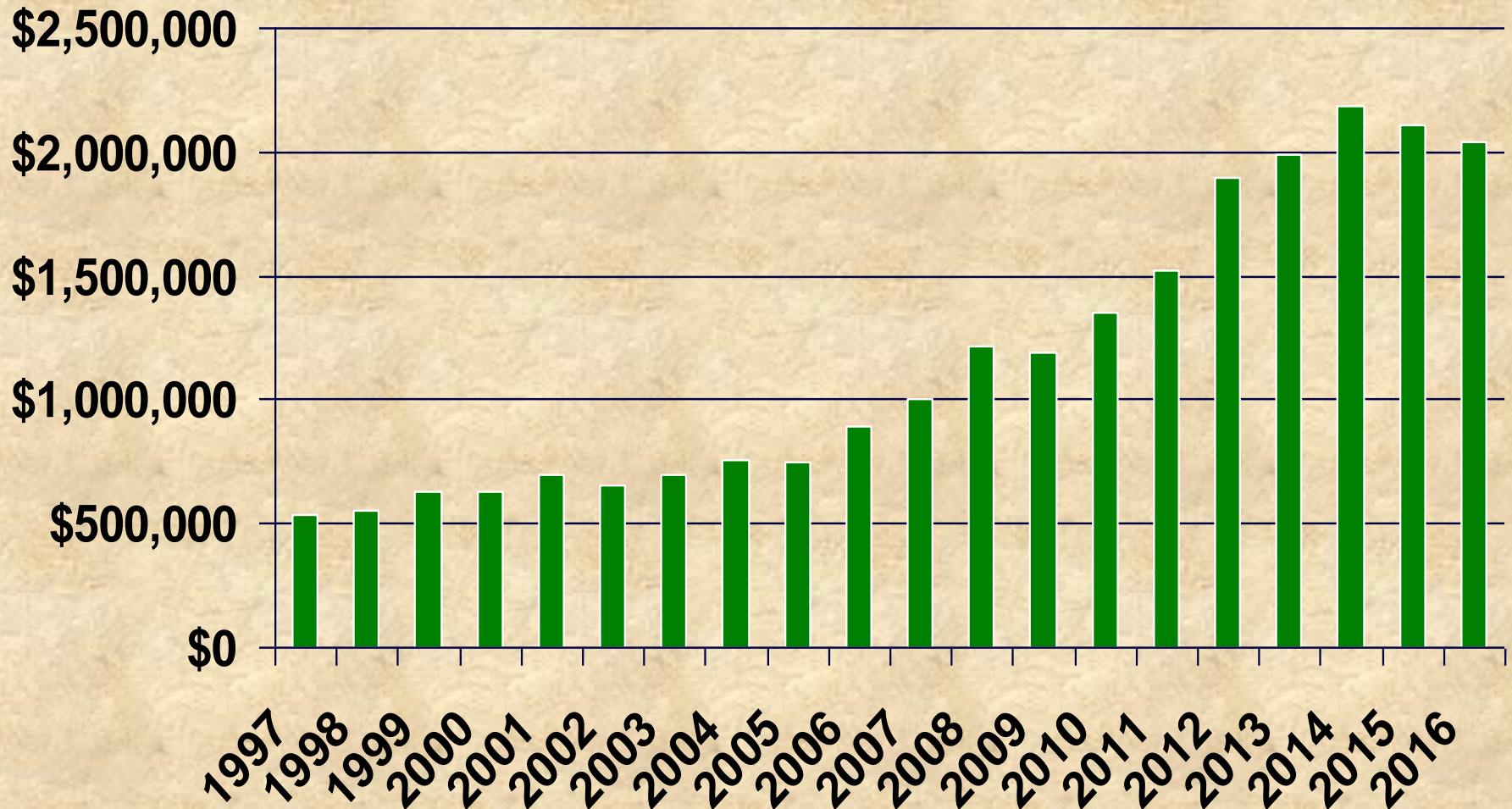
# Total Farm Assets, Cost Basis

Total farm assets per farm decreased 3.3% or \$68,963 from last year. Assets increased 129% in the last 10 years. (Single proprietors only)  
Crop acres on all farms increased by 220 acres or 12% on average during that same time.

|        |             |
|--------|-------------|
| ● 2006 | \$892,986   |
| ● 2007 | \$1,007,440 |
| ● 2008 | \$1,218,736 |
| ● 2009 | \$1,188,358 |
| ● 2010 | \$1,355,383 |
| ● 2011 | \$1,521,843 |
| ● 2012 | \$1,897,306 |
| ● 2013 | \$1,987,640 |
| ● 2014 | \$2,183,535 |
| ● 2015 | \$2,112,291 |
| ● 2016 | \$2,043,328 |



**Farm Asset Growth in Region 3, Cost Basis, Crop acres grew 12% since 2006 while assets grew by 129%. Average farms in 2016 had 40 less owned acres than in 2006 and 75 less pasture acres.**





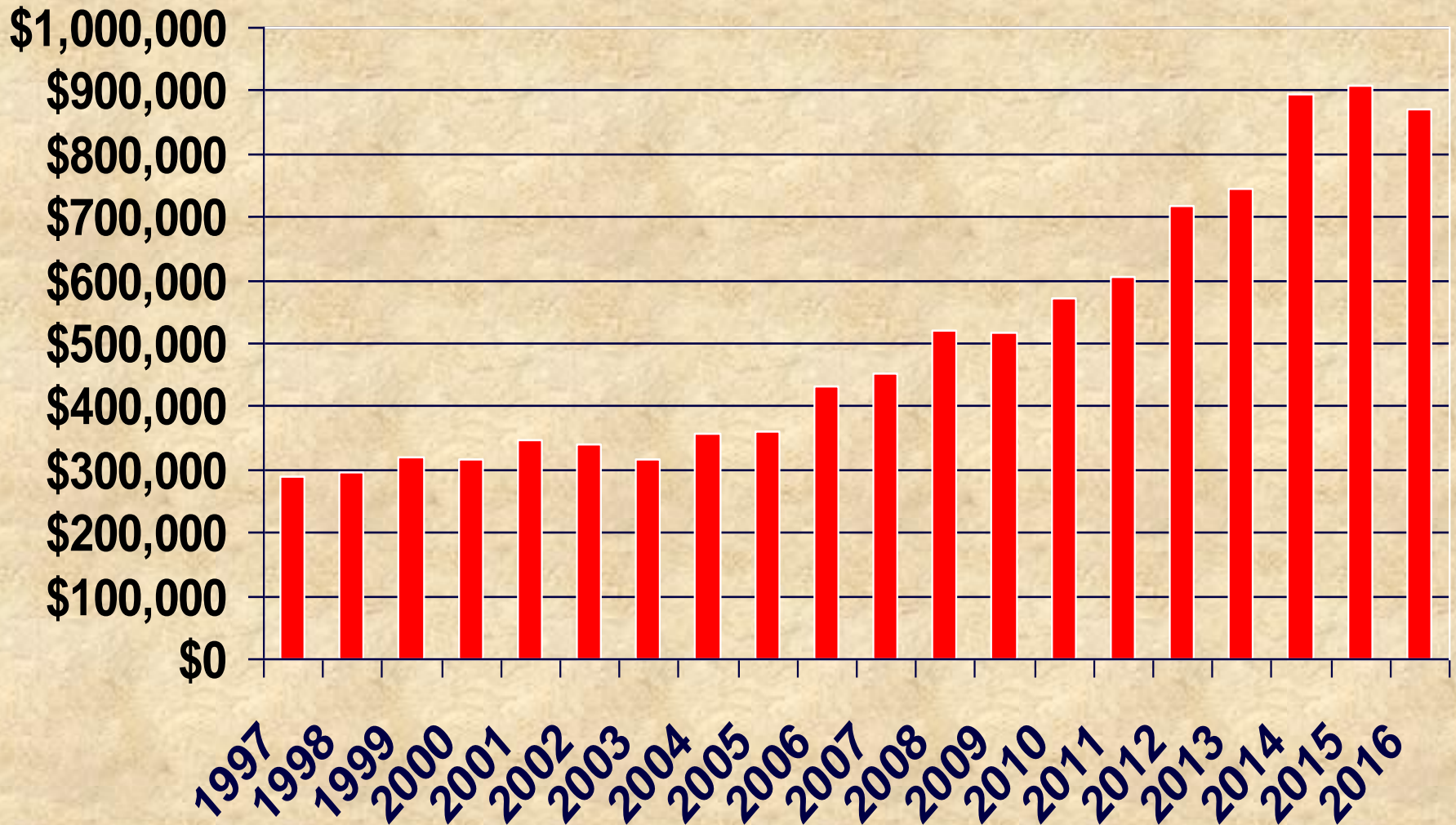
# Total Farm Liabilities

Total average farm liabilities on Single Proprietor farms decreased \$38,725 or 4.3% from last year. \$869,578 is an increase of 101% or \$437,468 since 2006. Last decreases were in 2009 and in 2014.

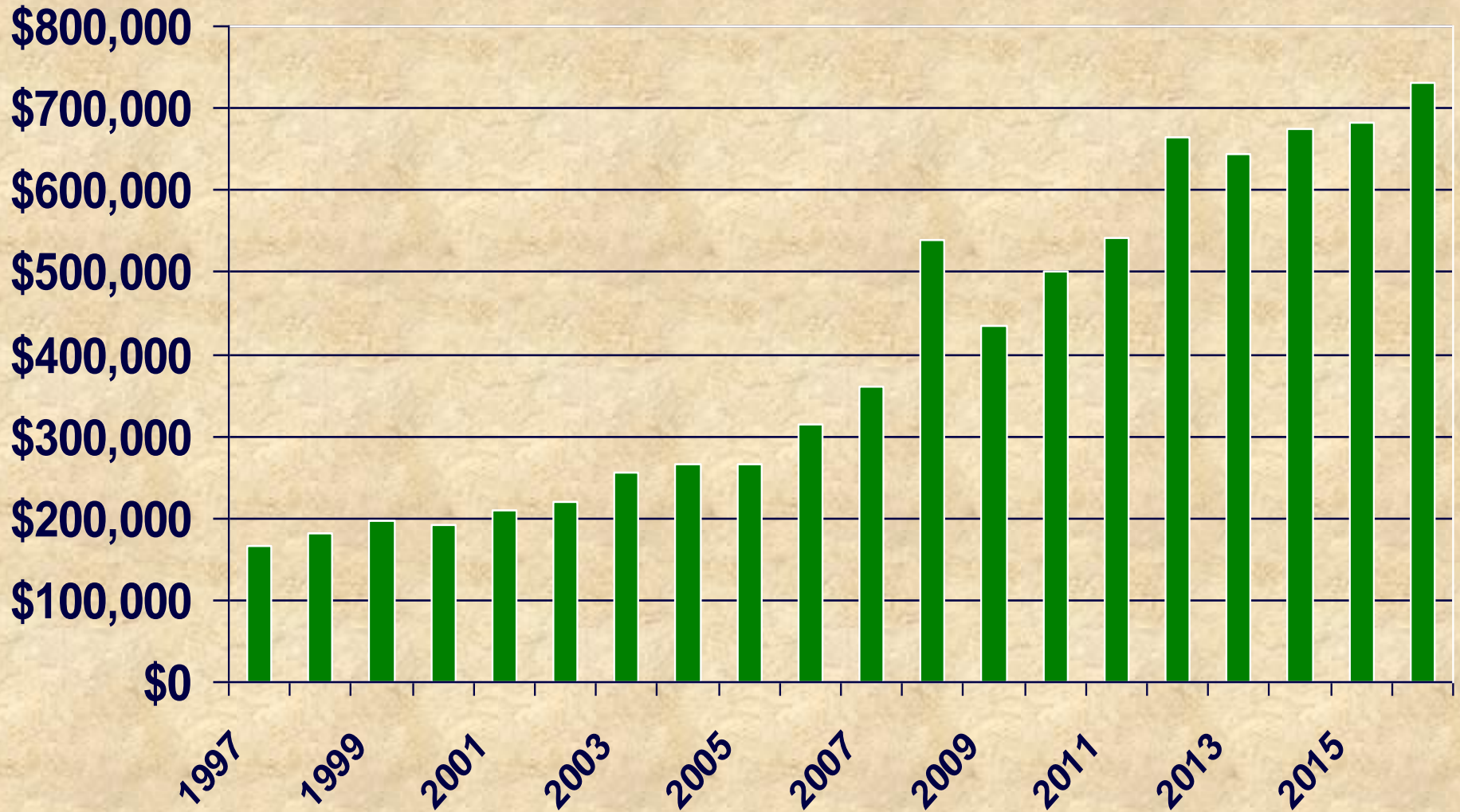
|        |            |
|--------|------------|
| ● 2006 | \$ 432,110 |
| ● 2007 | \$ 453,700 |
| ● 2008 | \$ 521,883 |
| ● 2009 | \$ 517,110 |
| ● 2010 | \$ 573,080 |
| ● 2011 | \$ 605,746 |
| ● 2012 | \$ 718,437 |
| ● 2013 | \$ 744,591 |
| ● 2014 | \$ 894,163 |
| ● 2015 | \$ 908,303 |
| ● 2016 | \$ 869,578 |



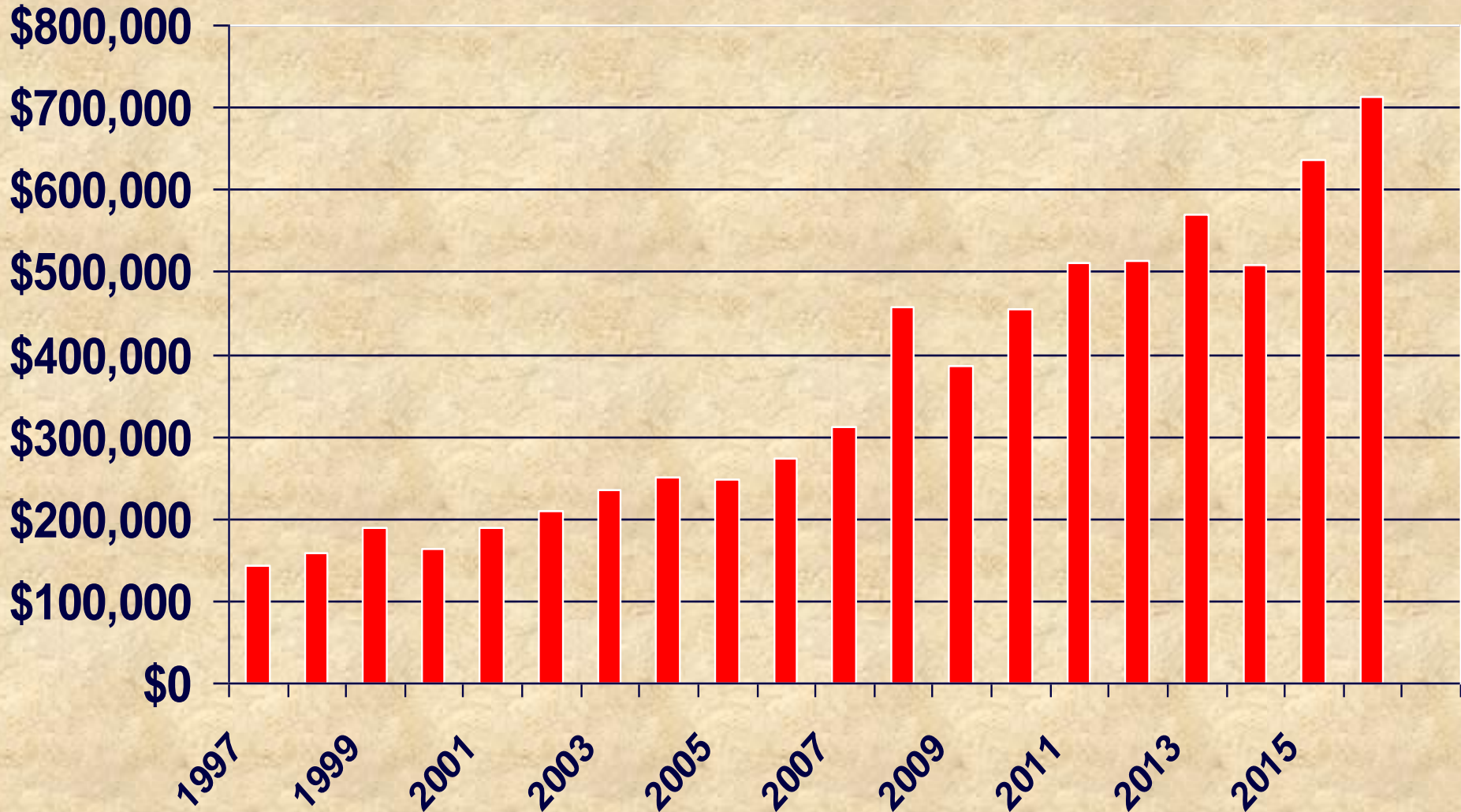
# Growth of Average Farm Liabilities Region 3, An increase of \$437,468 or 101% since 2006.



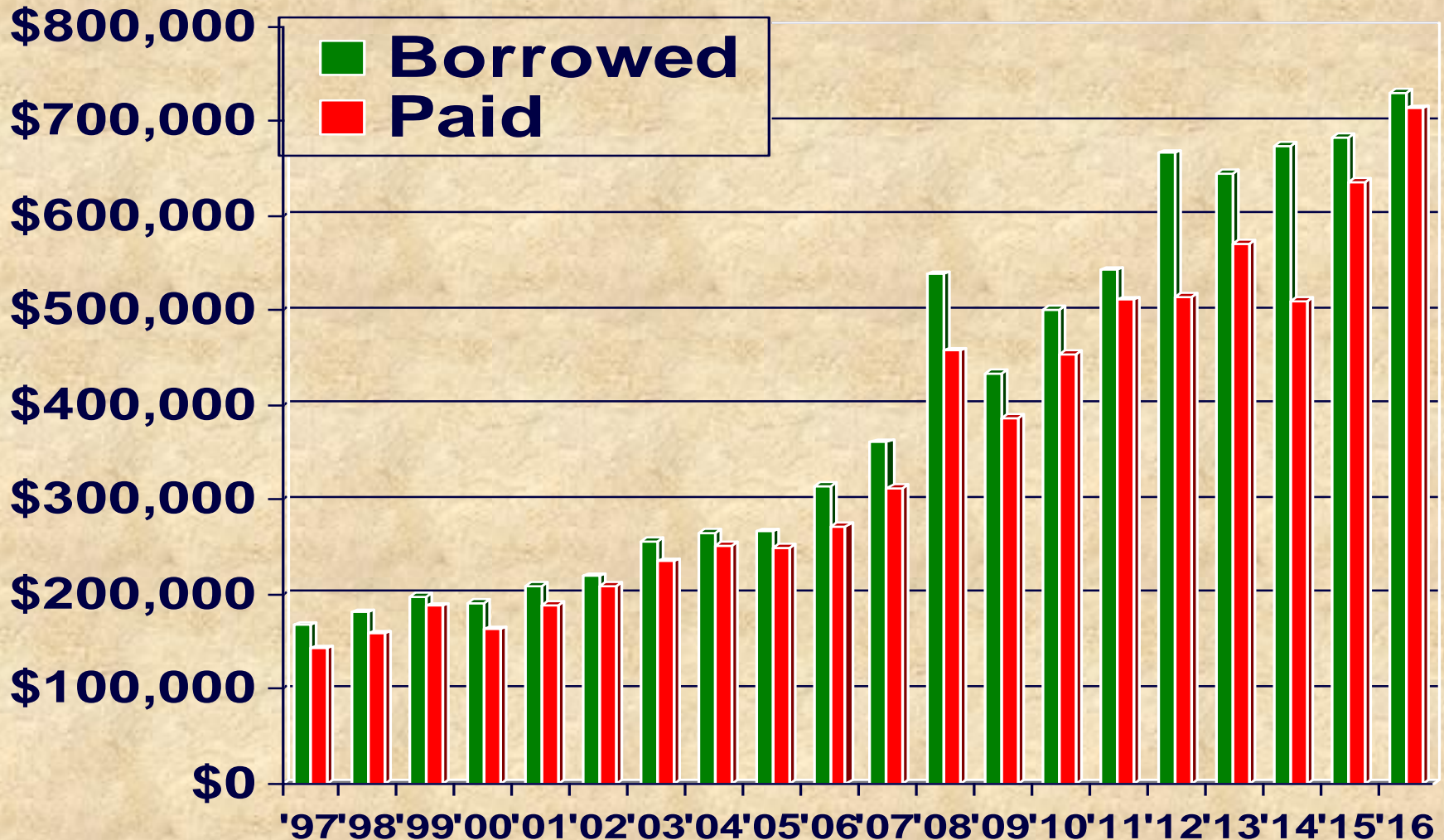
# Money Borrowed per Farm Region 3



# Principal Paid Per Farm Region 3

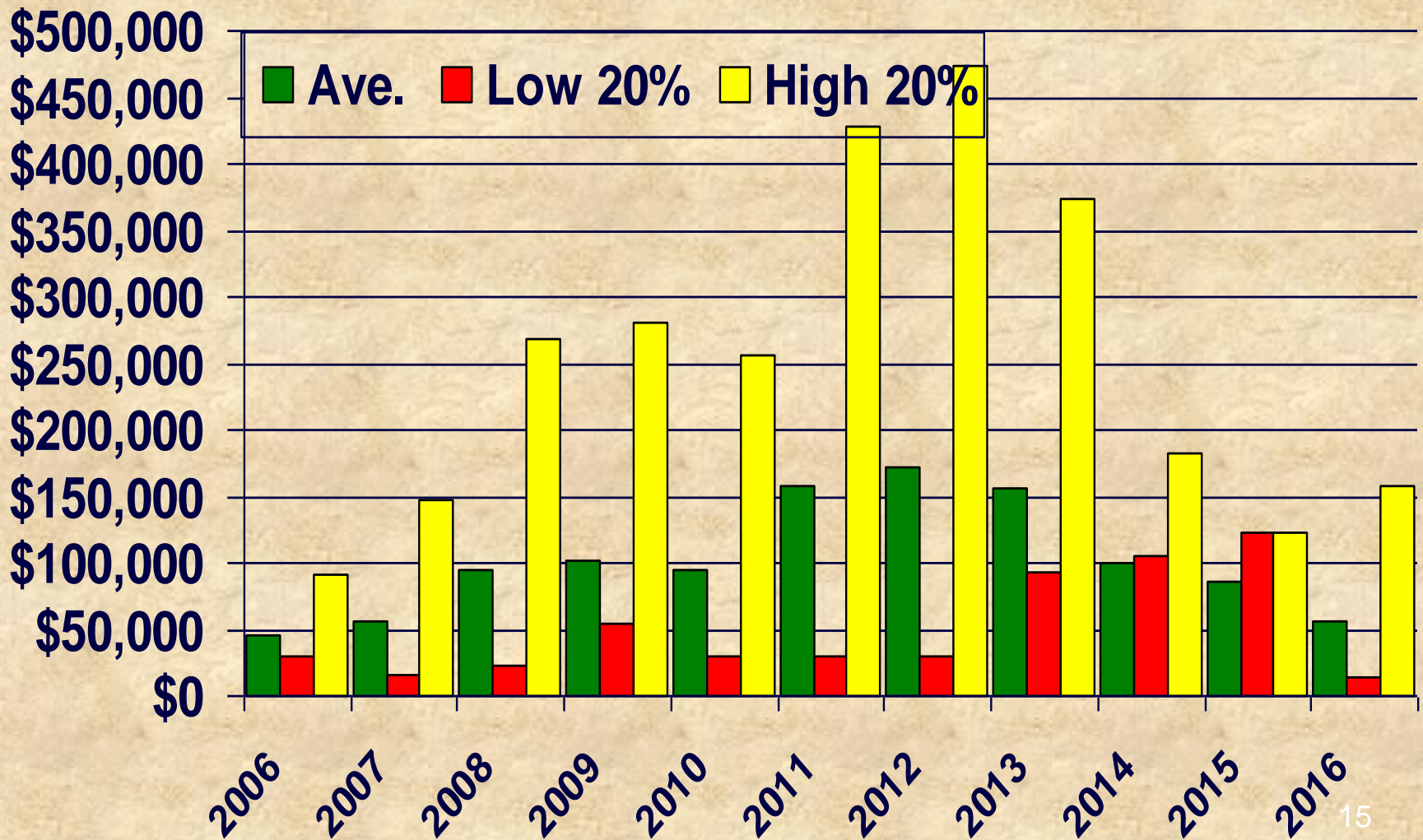


# Money Borrowed & Repaid, Region 3

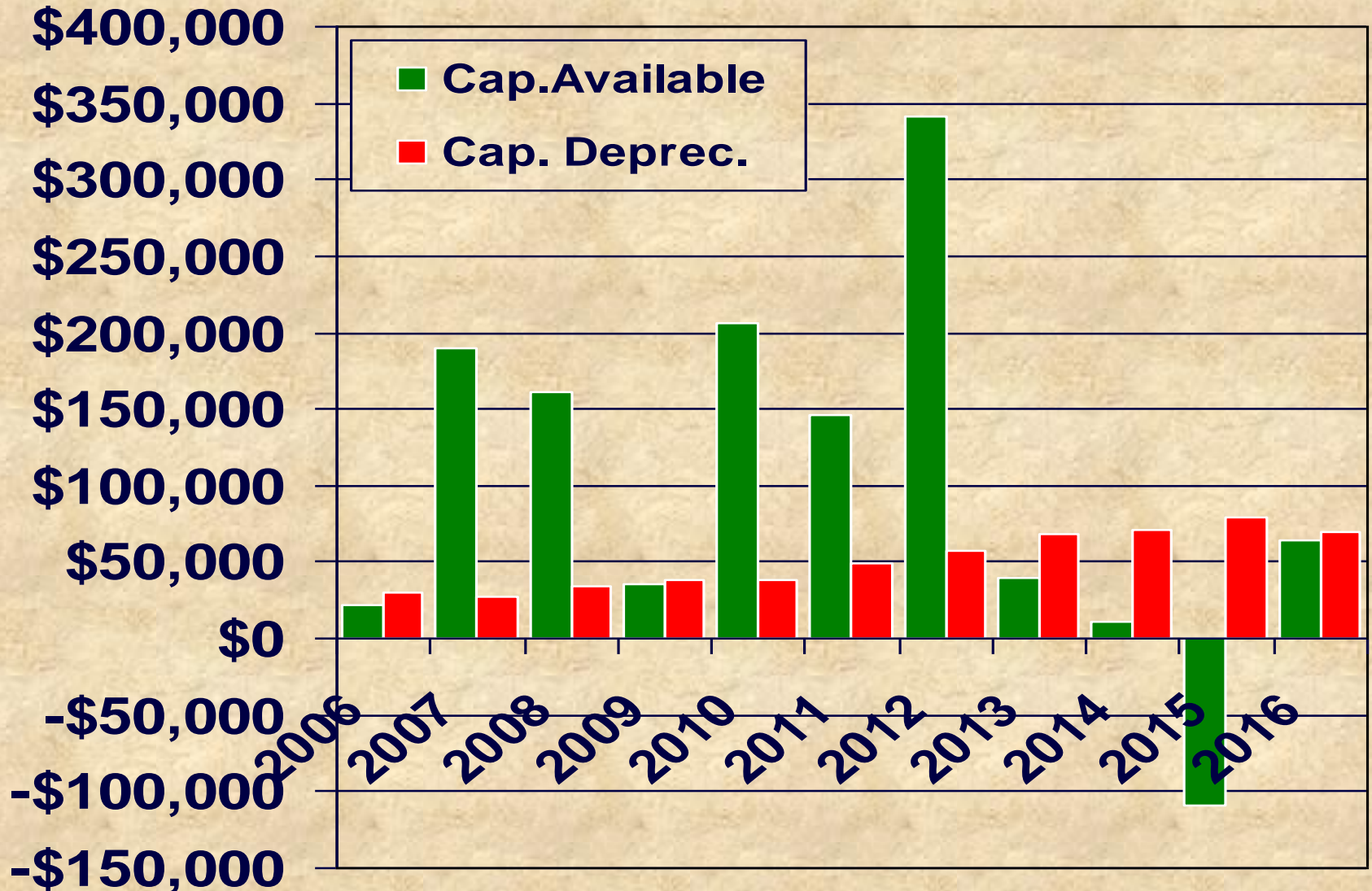


# **CAPITAL ASSETS, REPLACEMENT and DEPRECIATION**

# Capital Purchases of Machinery, Equipment & Farm Vehicles



# Capital Replacement Margin compared to Depreciation/Capital Adjustment





# Net Worth Change

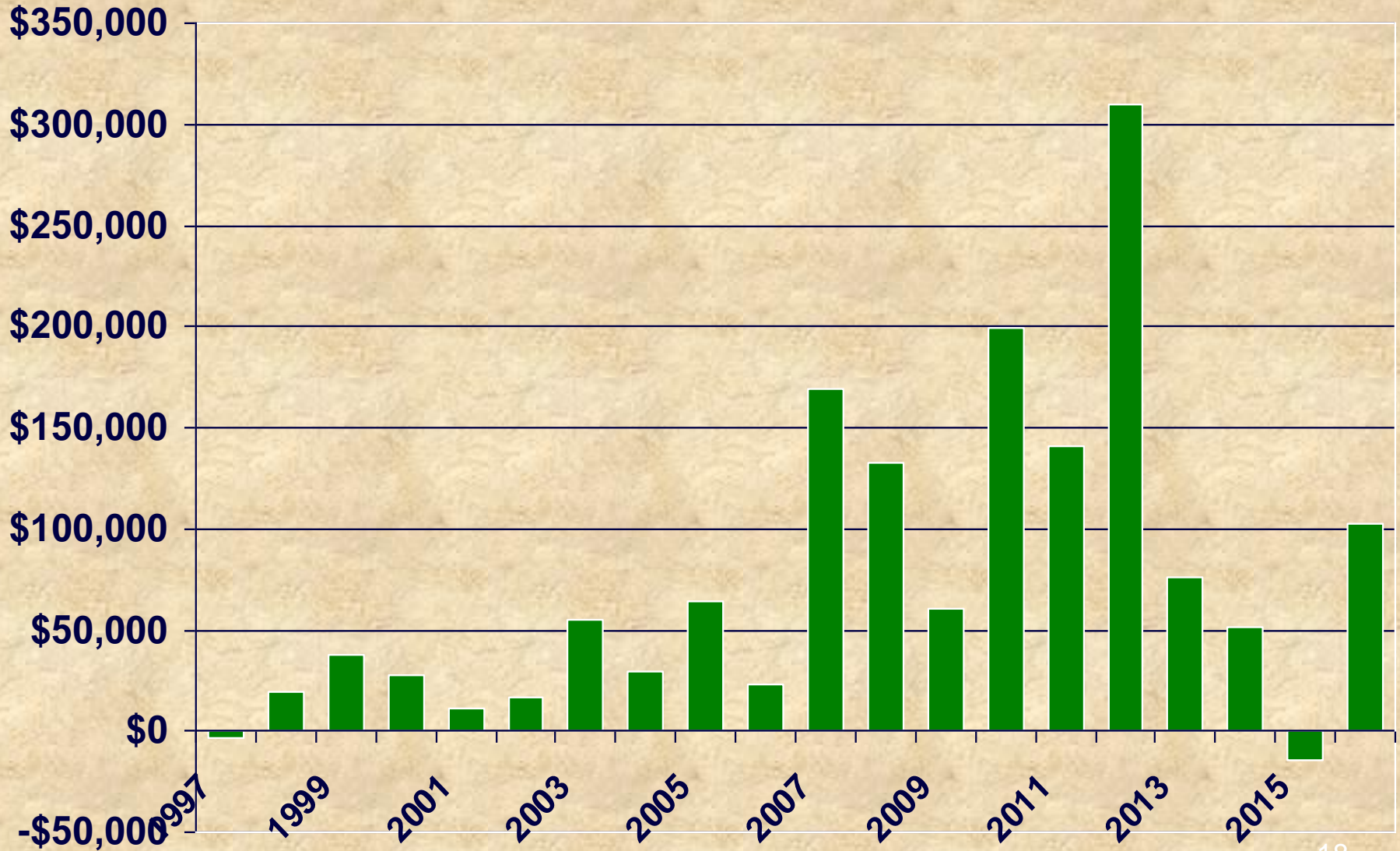
## (Change in Retained Earnings)

- This year we saw a positive change in retained earnings of \$102,283 as measured on a cost basis balance sheet. (Sole Prop.)

|        |            |
|--------|------------|
| ● 2006 | \$ 23,452  |
| ● 2007 | \$ 169,317 |
| ● 2008 | \$ 132,714 |
| ● 2009 | \$ 60,577  |
| ● 2010 | \$ 199,176 |
| ● 2011 | \$ 141,287 |
| ● 2012 | \$ 310,126 |
| ● 2013 | \$ 76,053  |
| ● 2014 | \$ 51,620  |
| ● 2015 | \$ -14,112 |
| ● 2016 | \$ 102,283 |



# Net Worth Change on a Cost Basis, (Retained Earnings Change) Region III



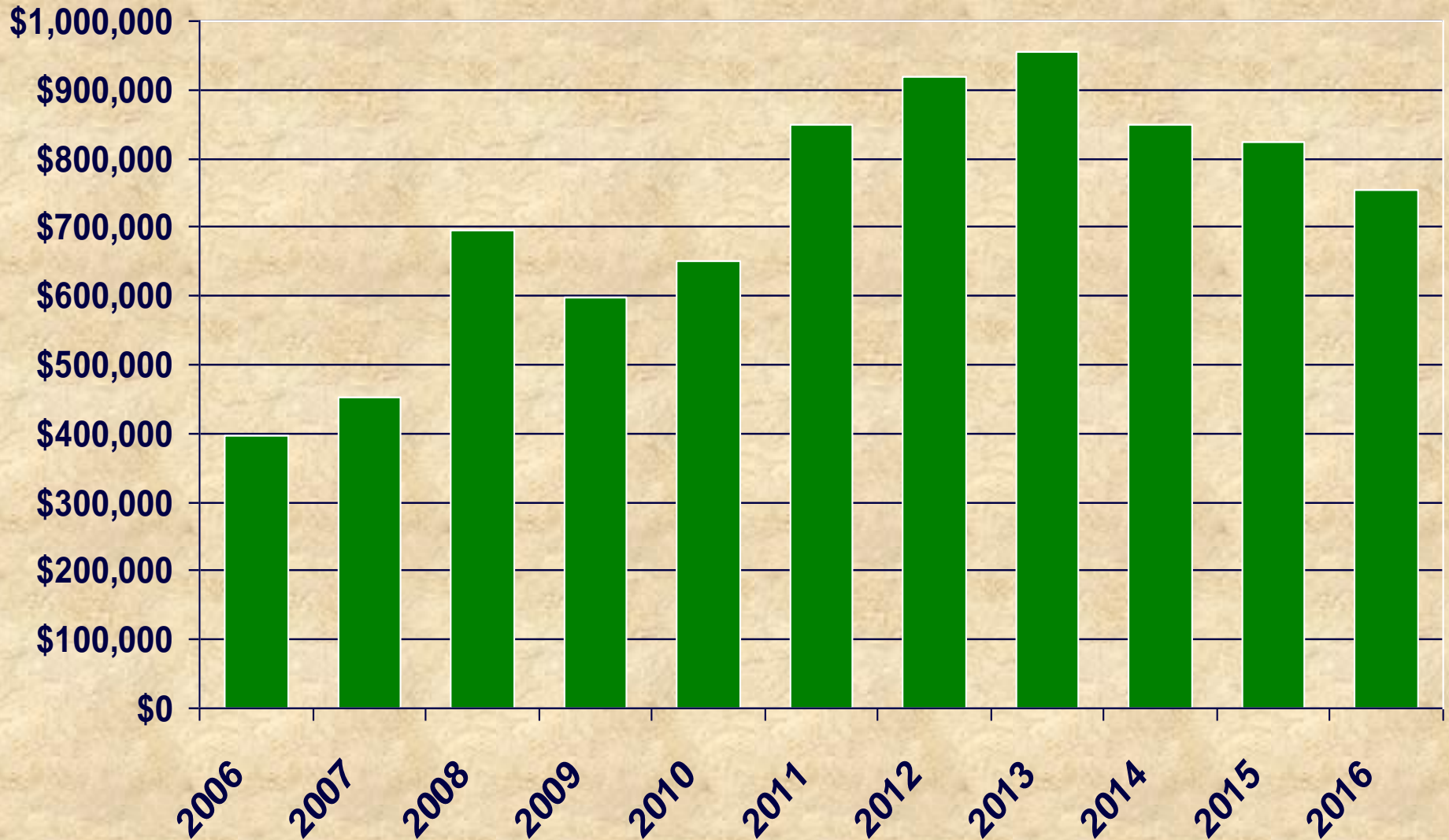
# Cash Farm Receipts

**Average Cash Farm Receipts decreased  
\$69,234 from 2015 to 2016.**

|        |            |   |       |
|--------|------------|---|-------|
| ● 2006 | \$ 395,617 | + | 3.5%  |
| ● 2007 | \$ 452,249 | + | 14.3% |
| ● 2008 | \$ 694,575 | + | 53.6% |
| ● 2009 | \$ 597,240 | - | 14.0% |
| ● 2010 | \$ 650,382 | + | 8.9%  |
| ● 2011 | \$ 848,141 | + | 30.4% |
| ● 2012 | \$ 918,165 | + | 8.3%  |
| ● 2013 | \$ 955,323 | + | 4.0%  |
| ● 2014 | \$ 849,976 | - | 11.0% |
| ● 2015 | \$ 823,293 | - | 3.1%  |
| ● 2016 | \$ 754,059 | - | 8.4%  |

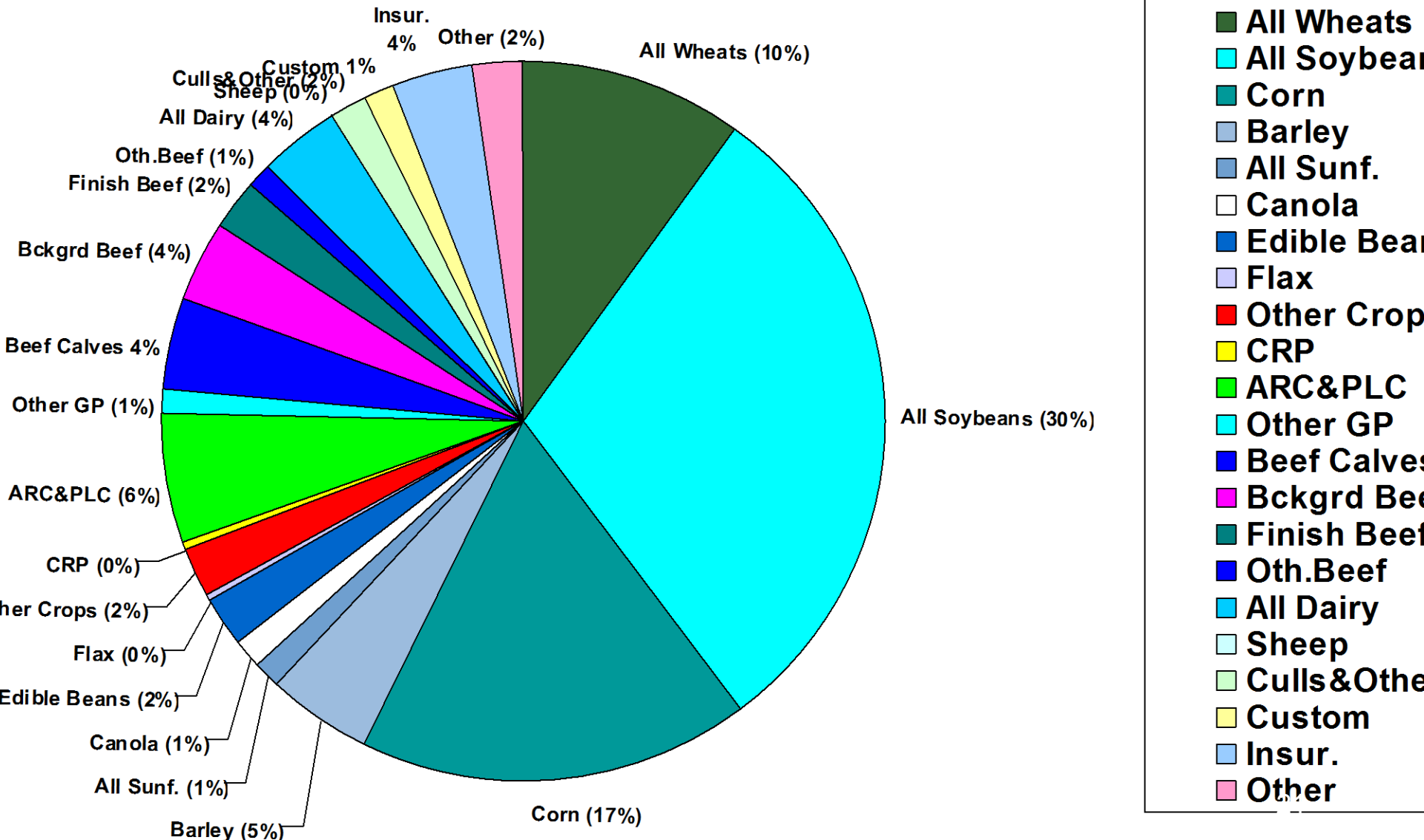
**Total Change '06 to '16 = + 91%**

# Cash Farm Receipts, Region 3



# Where did the money come from?

## \$754,059 Cash Income for 2016



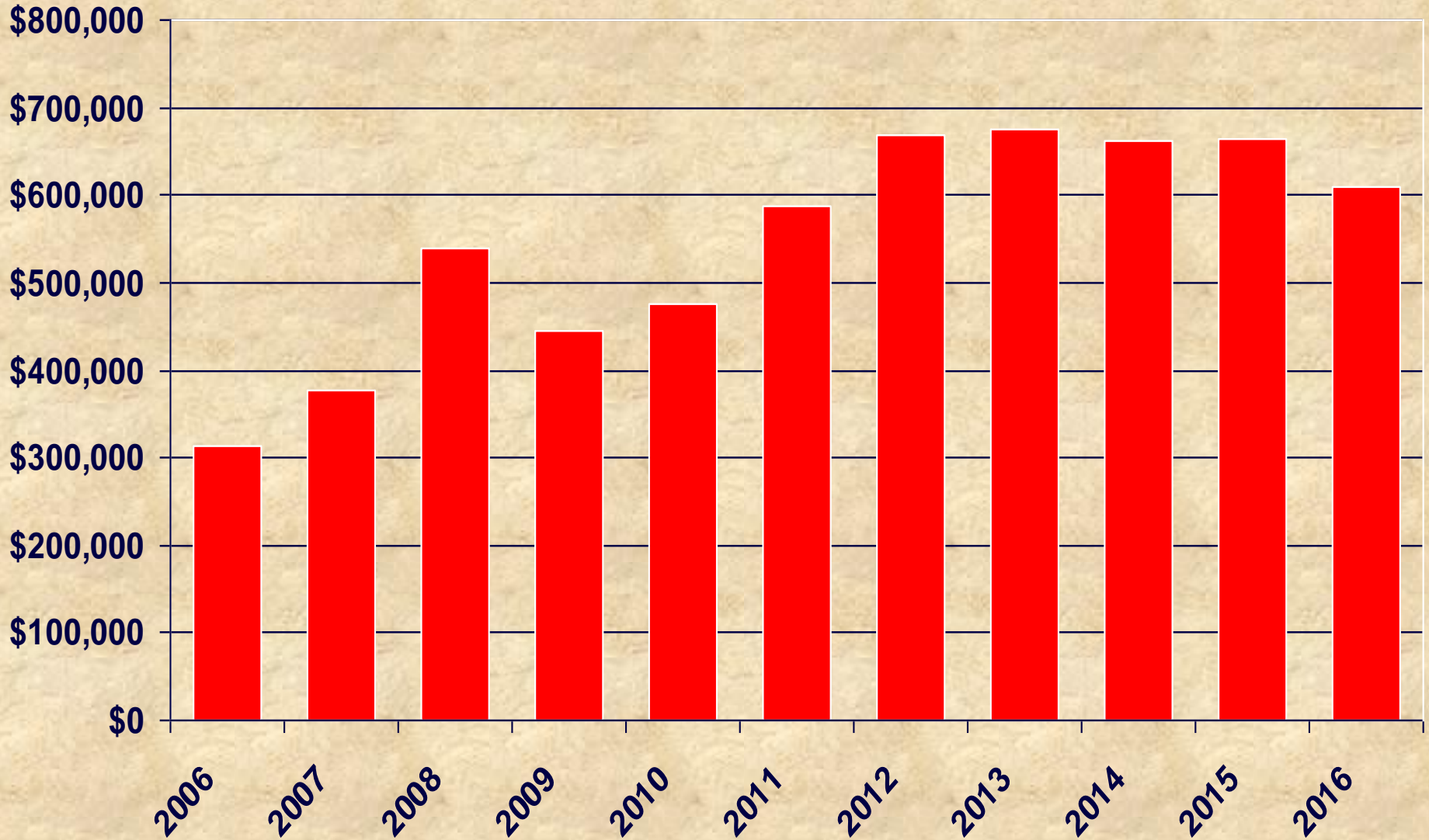
# Cash Farm Expenses

Average cash farm expenses decreased  
\$54,463 from 2015 to 2016

|        |            |         |
|--------|------------|---------|
| ● 2006 | \$ 314,372 | + 2.9%  |
| ● 2007 | \$ 376,242 | + 19.7% |
| ● 2008 | \$ 540,226 | + 43.6% |
| ● 2009 | \$ 444,962 | - 17.6% |
| ● 2010 | \$ 475,020 | + 9.8%  |
| ● 2011 | \$ 586,337 | + 23.4% |
| ● 2012 | \$ 668,792 | + 14.1% |
| ● 2013 | \$ 674,927 | + 0.9%  |
| ● 2014 | \$ 662,965 | - 1.8%  |
| ● 2015 | \$ 664,589 | + 0.2%  |
| ● 2016 | \$ 610,126 | - 8.2%  |

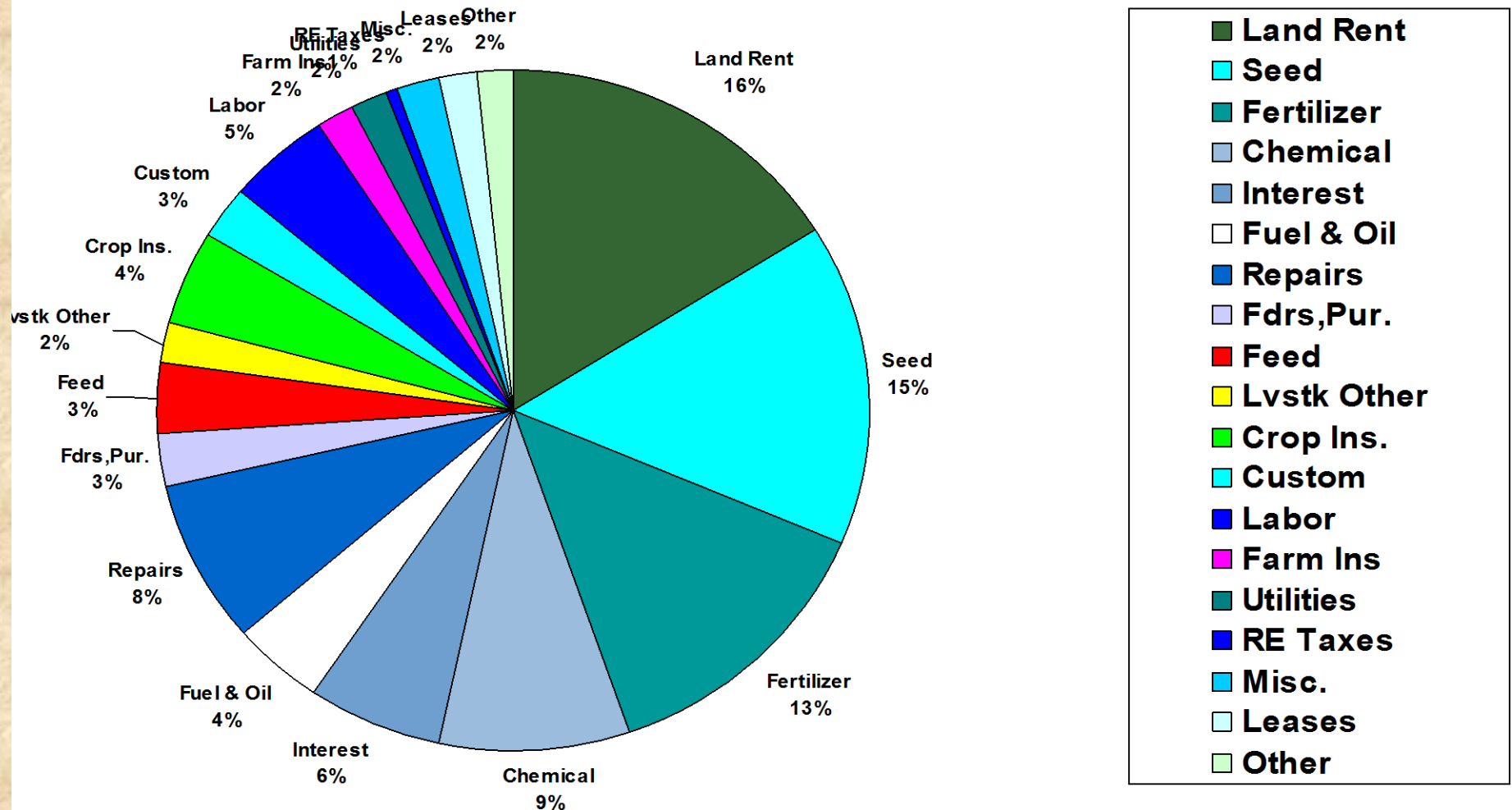
Total increase '06 to '16 = + 94%

# Cash Farm Expenses Region 3



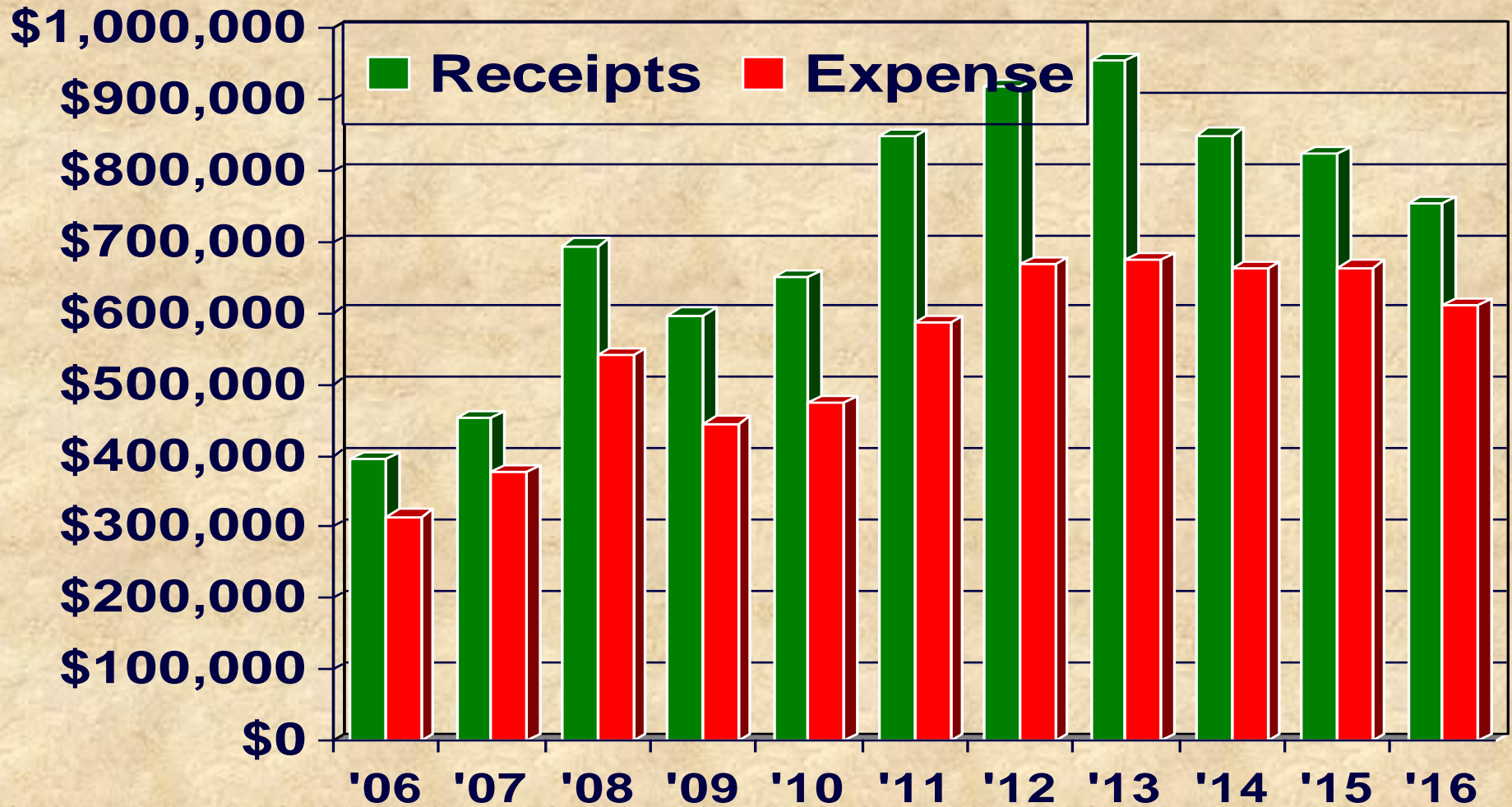
# Where was the money spent ?

## Cash Expenses of \$610,126 in 2016

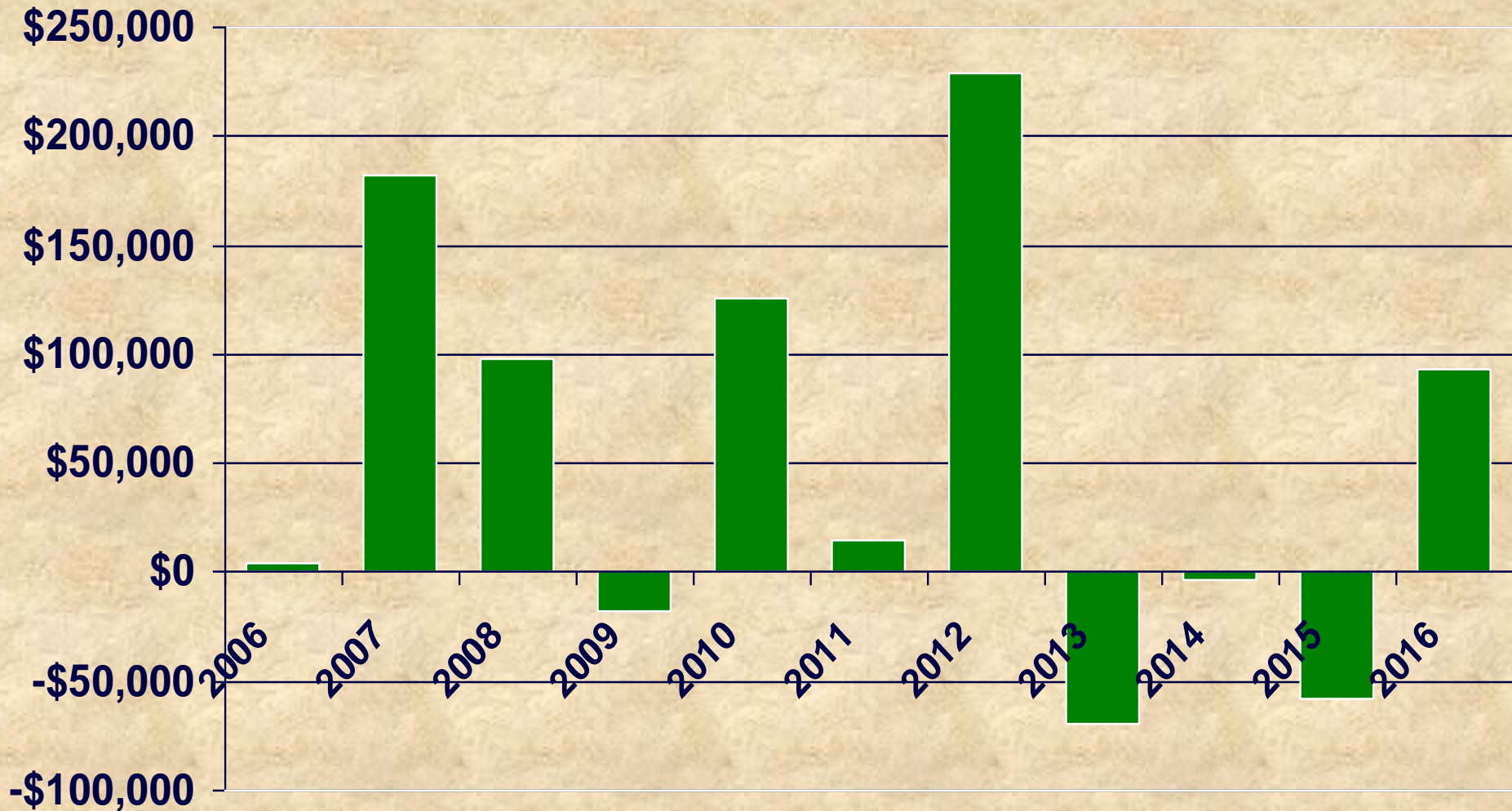




# Gross Cash Income and Cash Expenses



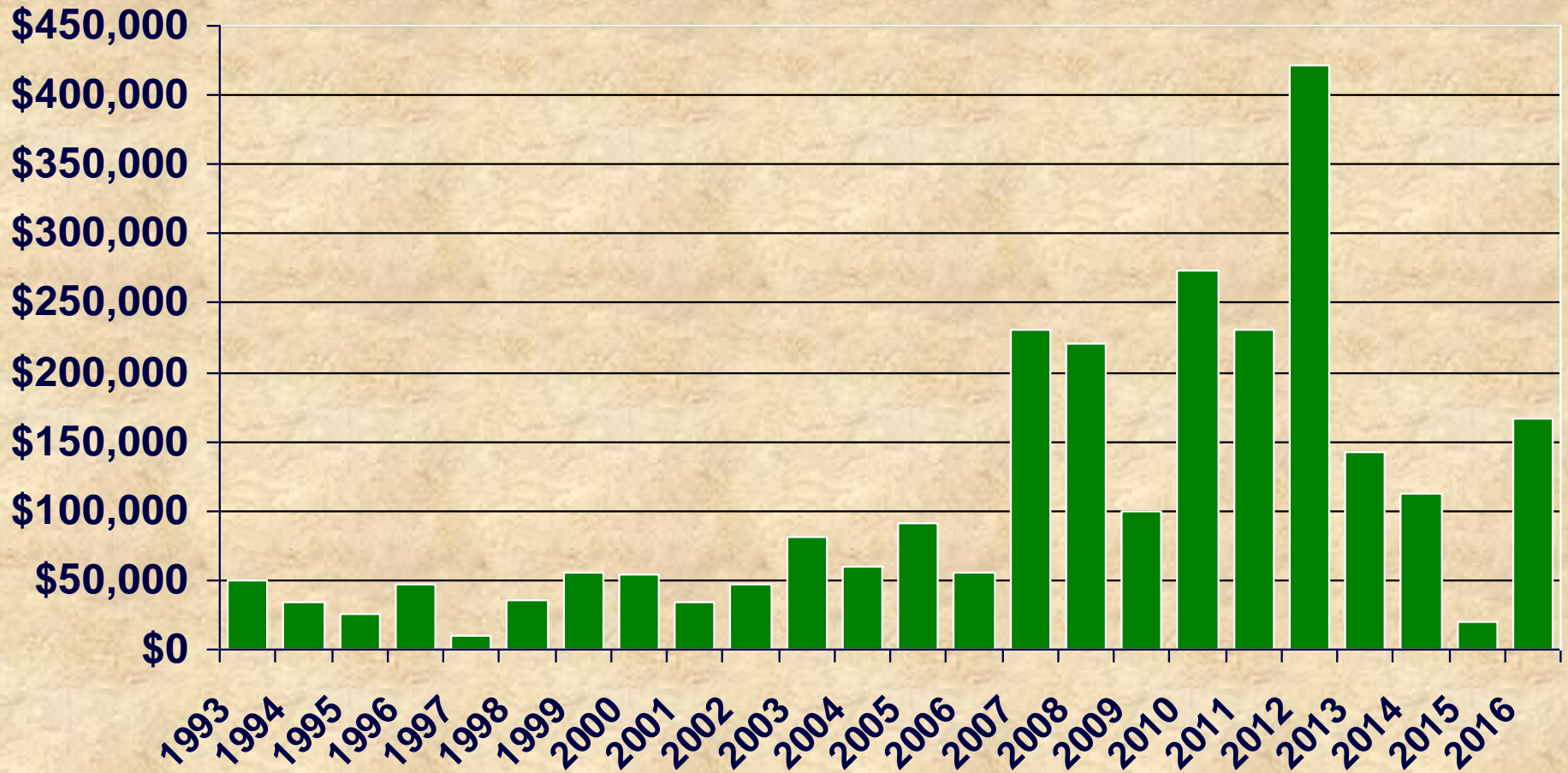
# Total Inventory Change per farm, Region 3



# Net Farm Income

- This is the net cash farm income after being adjusted first for inventory change and then for depreciation.
- This is the calculated profit for the year
- If more money than indicated on net farm income is spent on family living, personal taxes, and new investments, it must be taken from inventory sales, the capital replacement dollars, new borrowings, or from off farm income. It is also calculated under the cost balance sheet to avoid the effects of inflation or deflation of asset values.

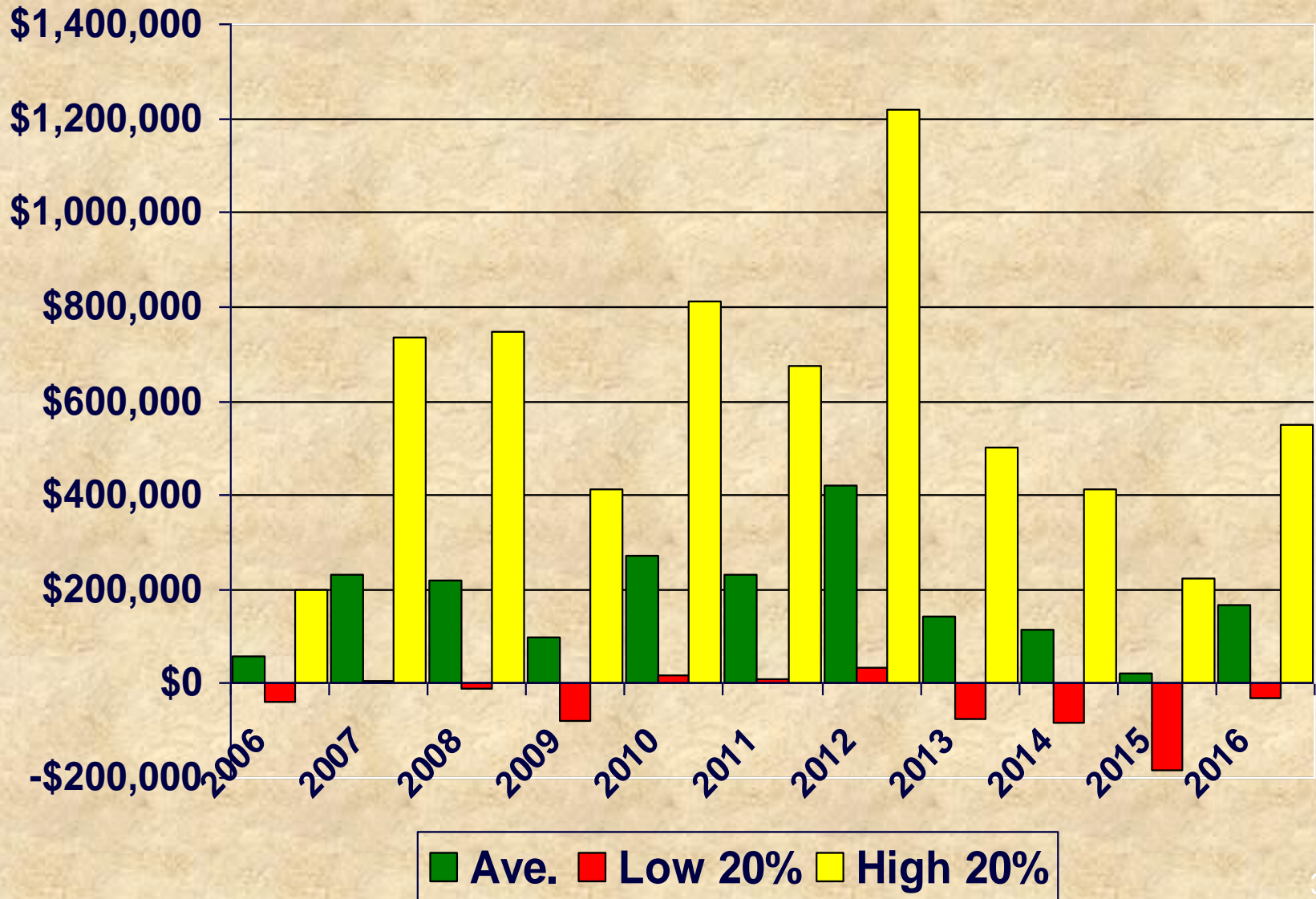
# Average Net Farm Income



# Net Farm Income For Region III

- **2016 Net farm income for farms in Region III averaged \$166,574. (Up \$146,381 from \$20,193 in 2015).**
- **Net farm income for the low profit 20% of the farms was negative and averaged (\$29,894) (Increased by \$155,781 from 2015, from (\$185,675).**
- **Net farm income for the high profit 20% of the farms averaged \$550,974 (Increased by \$327,058 from 2015, averaging \$223,916 in 2015).**

# Net Farm Income by Profitability Groups

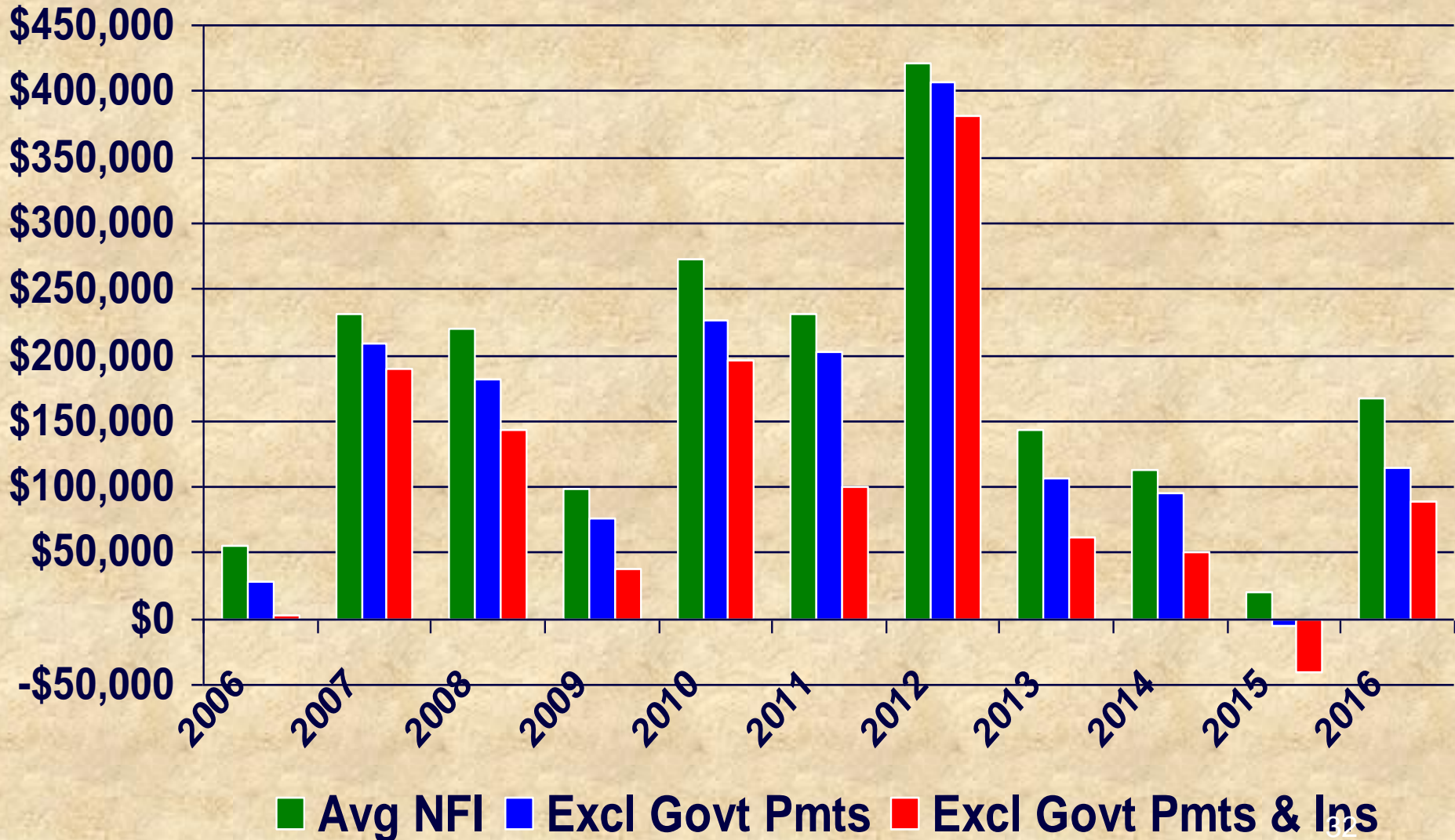


# **Profitability Based on Crop Acres Only, including cash crop lands & haylands.**

- **Average Profit on 149 farms, based on 2,013 crop acres was \$82.75 per acre. \$9.40 in 2015 based on 2,148 acres.**
- **Low Profit 20%, based on 777 acres was (\$38.47) per acre. (\$58.94) in 2015 on 3,150 acres.**
- **Mid Profit (40%-60%), \$90,610 from 1,130 acres was a profit of \$80.19 per acre. \$12.51 in 2015, on 1,427 acres.**
- **High Profit 20%, based on 4,854 acres was \$113.51 per acre. \$57.81 in 2015 on 3,873 acres.**

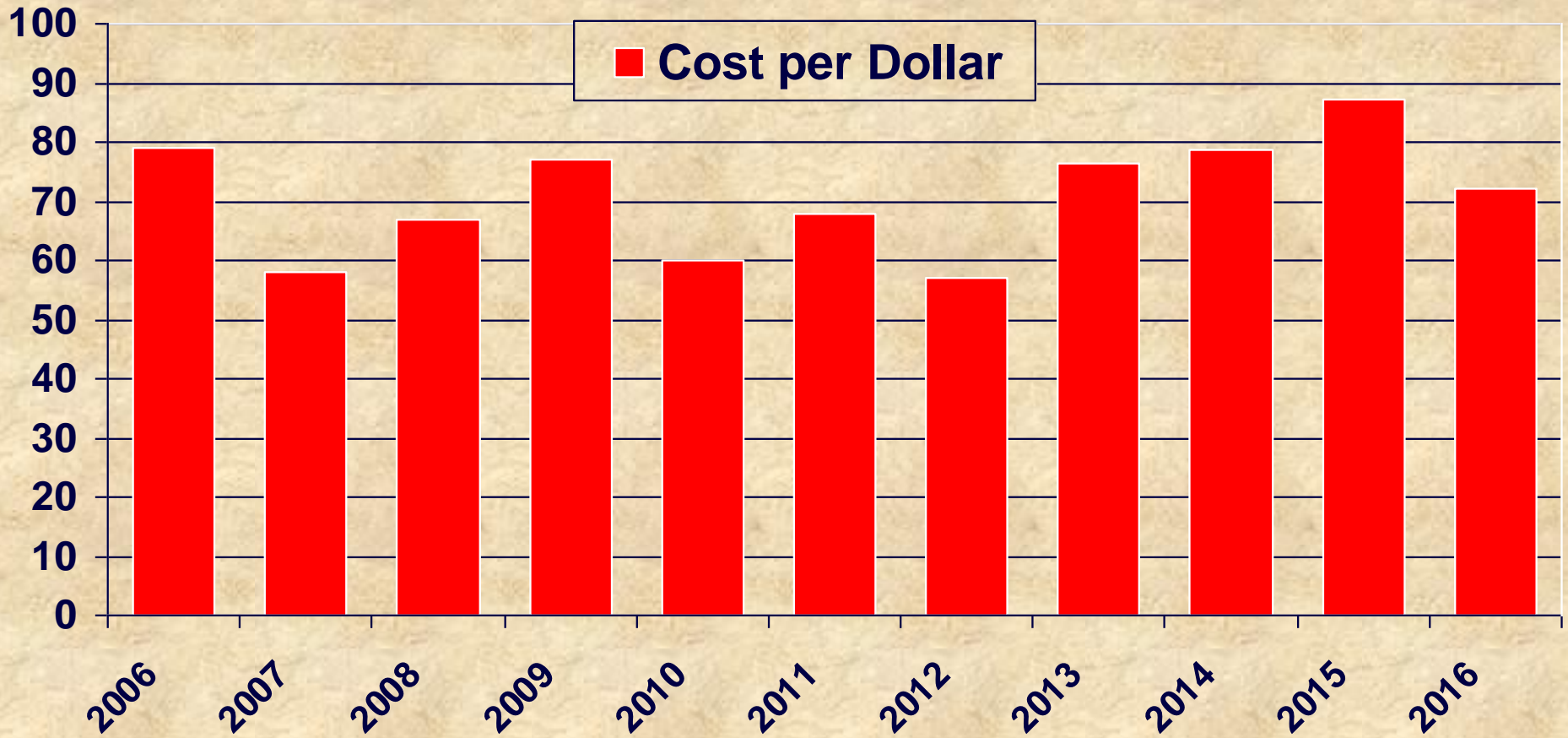
# Average Net Farm Income

*ND Farm Business Management, Region 3*





# Average Cost per Dollar of Income

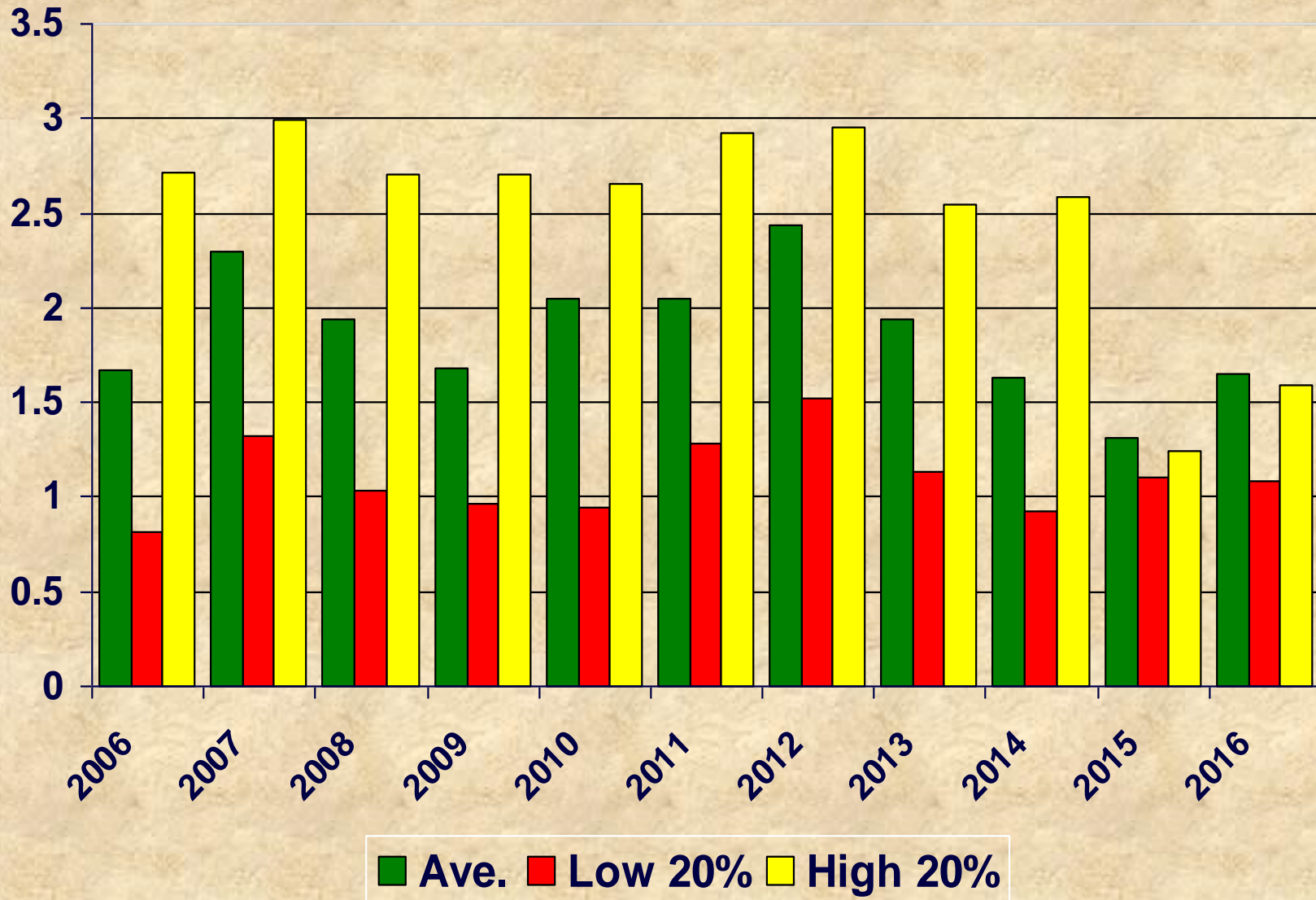


# Cost to produce \$1.00 of Accrued Income

- This year it cost an average Region 3 farmer \$.72 (accrual) to produce a dollar's worth of income, compared to \$.87 last year. (2016 Oper. Expense \$.68 + Interest of \$.042) Depreciation \$.06-\$.09 not included.
- High profit farms created a dollar of income for \$.65 down from \$.75 in 2015.
- Low profit farms created a dollar of income for \$1.02 of expenses, including interest, down from \$1.04 in 2015.
- Mid-Range farms created a dollar for \$.74 which was down from \$.88 in 2015.

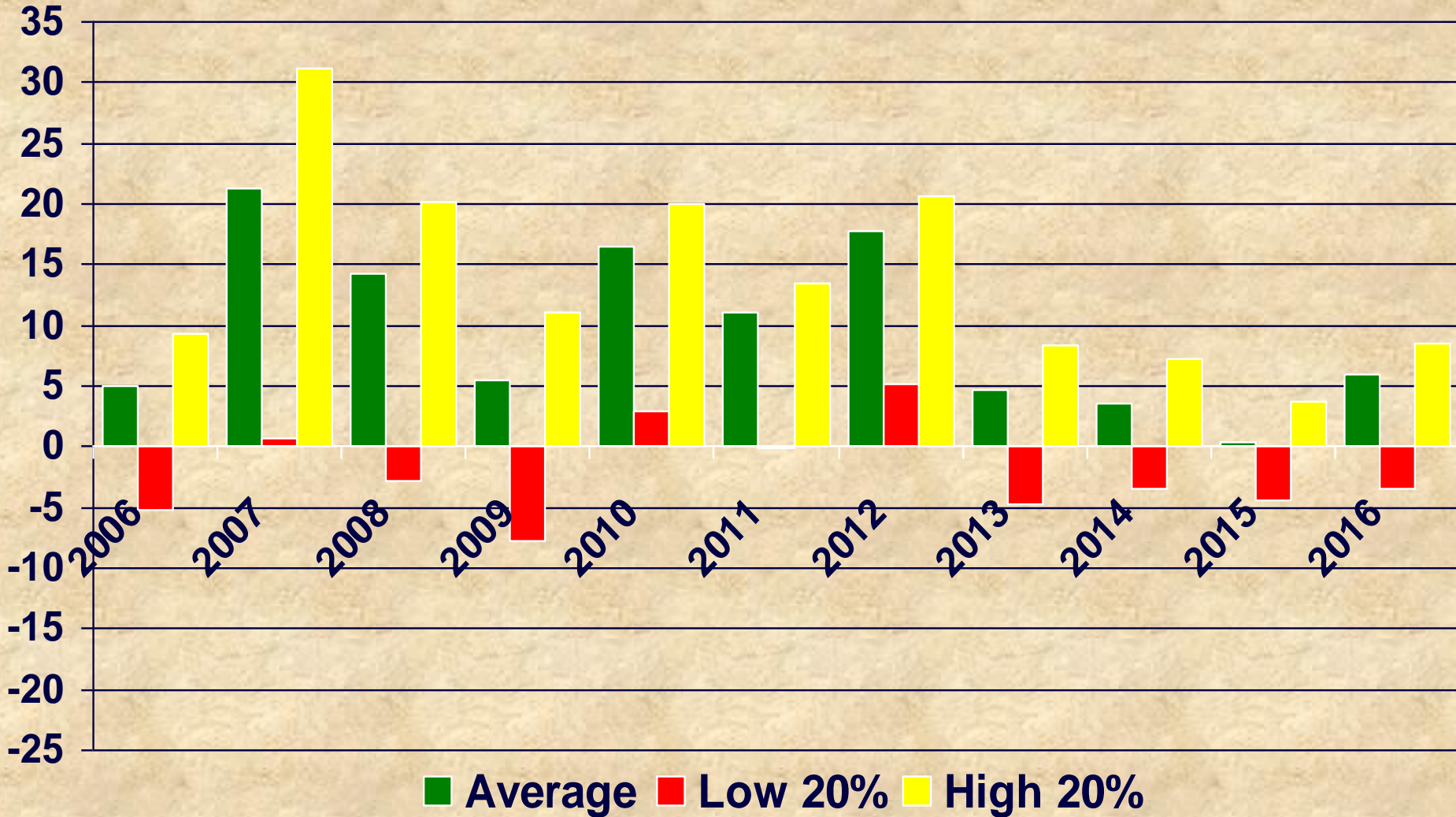


# Current Ratio by Profitability Group, Current assets divided by Current Liabilities

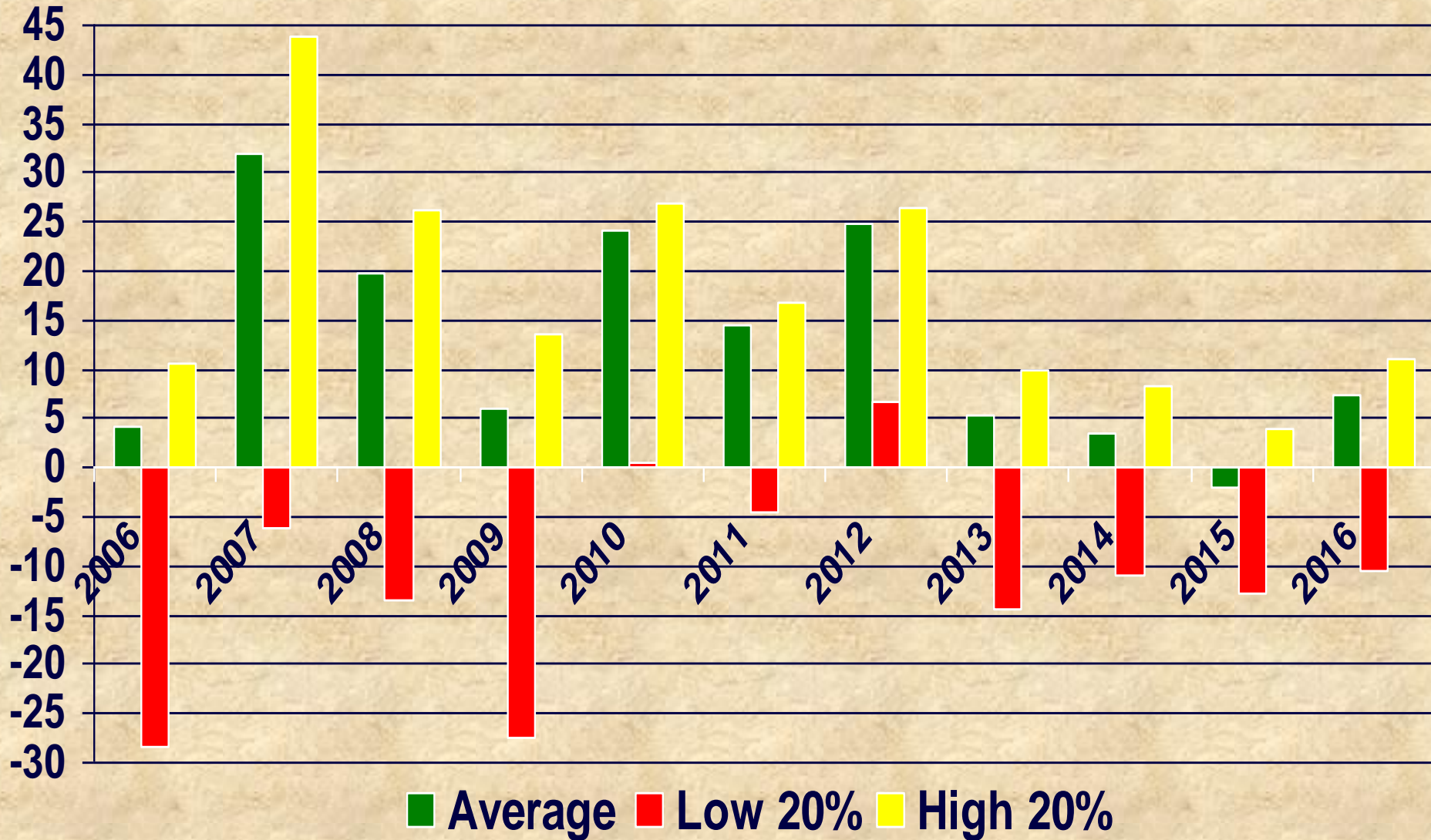


# % Return on Assets, Cost Basis

## ND Farm Business Management, Region 3



# % Return on Equity, Cost Basis

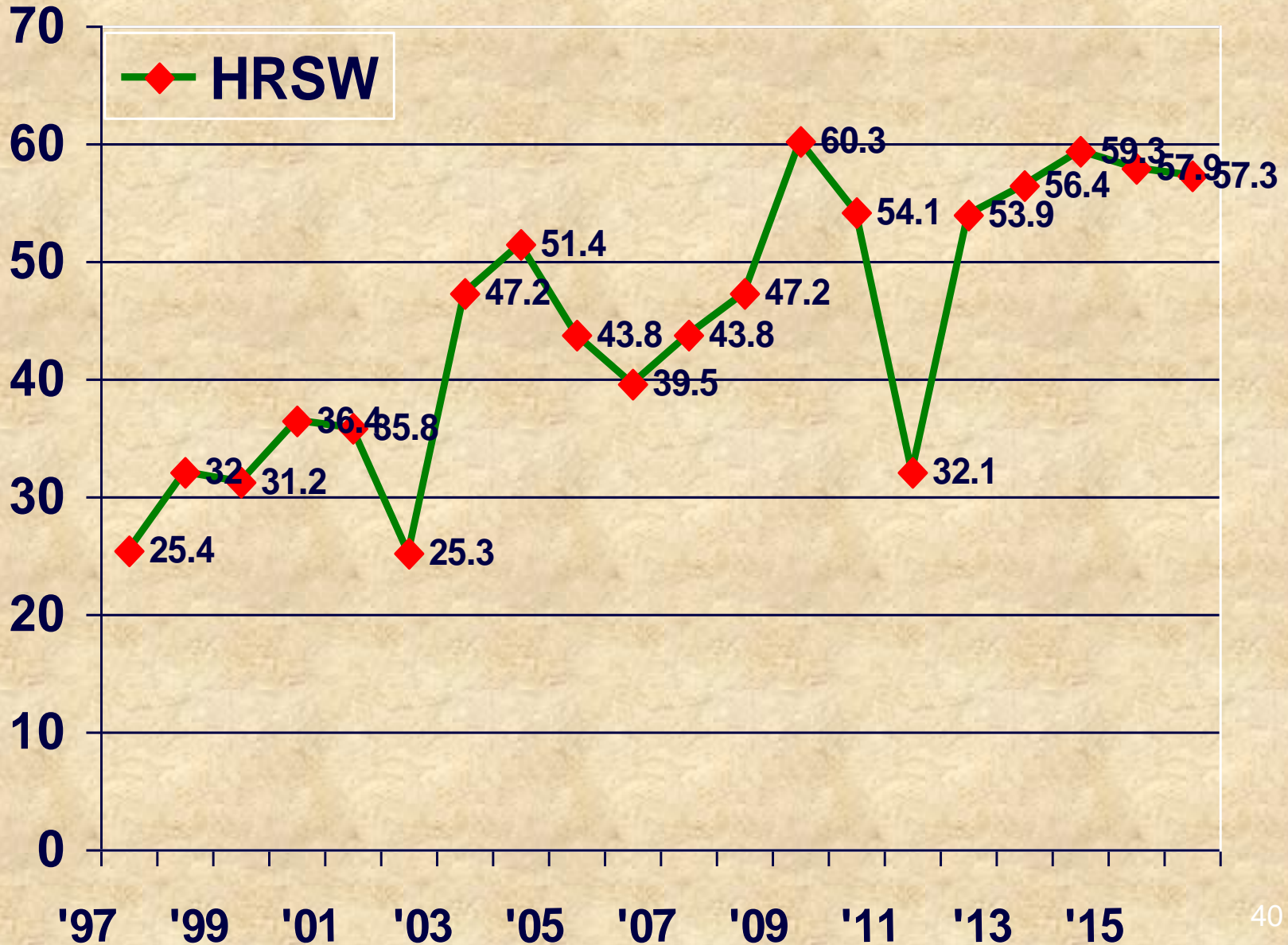


# **Crop Yields, Costs and Returns for 2016**

# Net Return for Crops

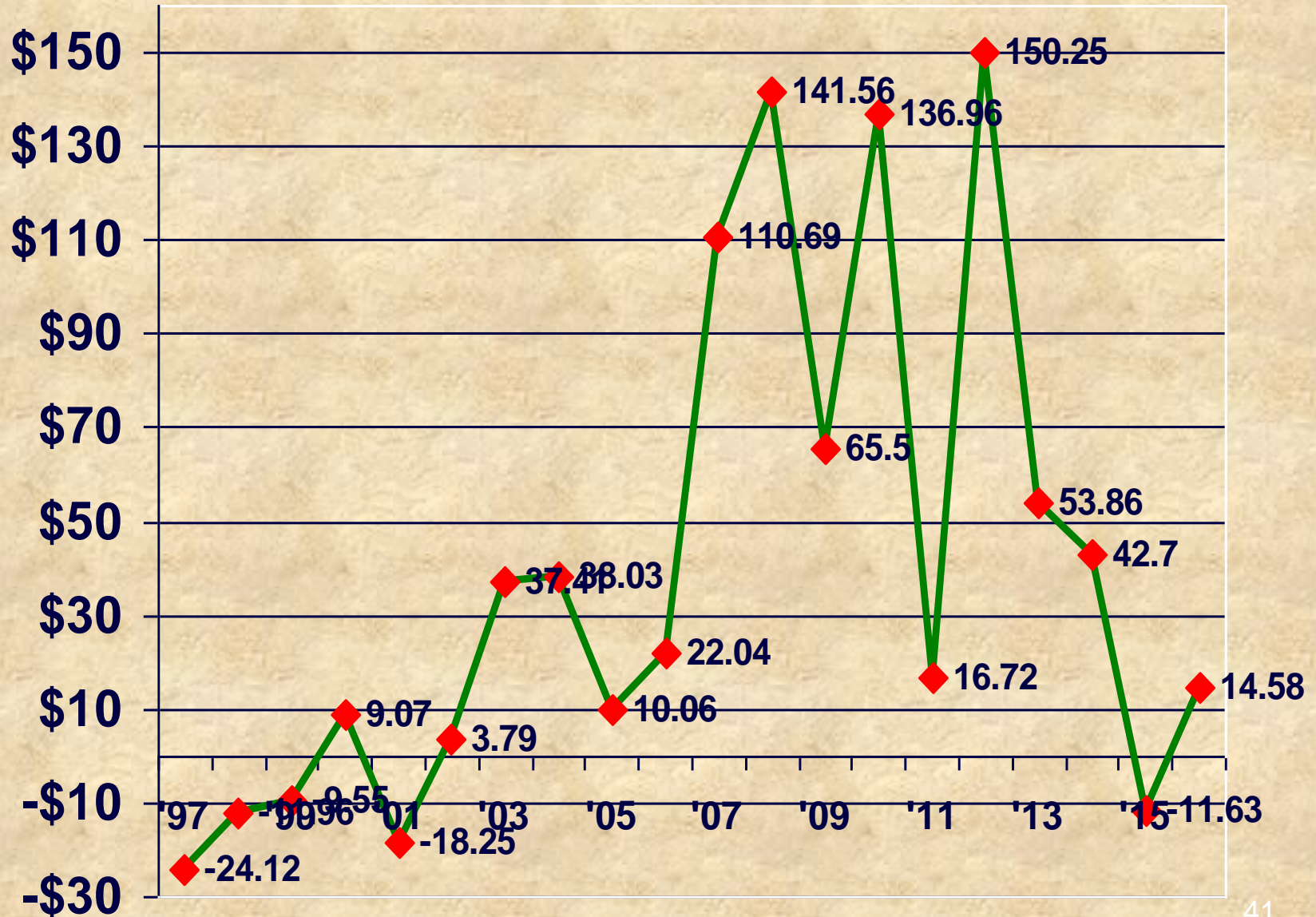
- Does not include Direct or Counter-Cyclical Government Payments.
- Does include LDP and Insurance which shows up in the price of the commodity and the other crop income

# All HRSW Average Yields, Region 3





# HRSW Average Net Return per Acre on Cash Rented Land, Avg. Rent \$59.82

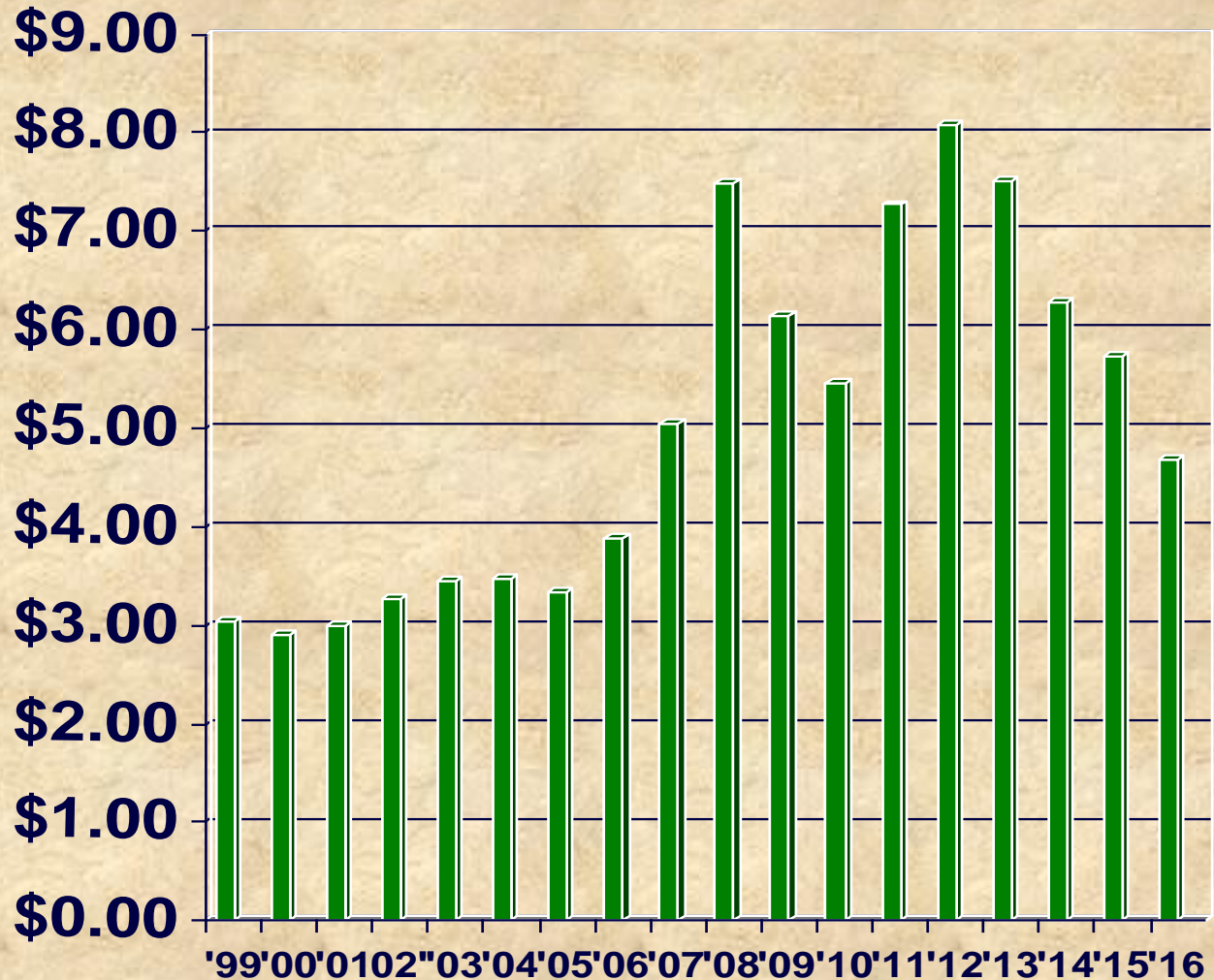


# Spring Wheat Net Return/Acre on Cash Rented Land, 2016

|           |           |             |
|-----------|-----------|-------------|
| ● Average | \$ 14.58  | at 58.4 Bu. |
| High 20%  | \$ 70.76  | at 65.3 Bu. |
| Low 20%   | \$ -76.25 | at 40.0 Bu. |

# Average Price Received, Cash Sales

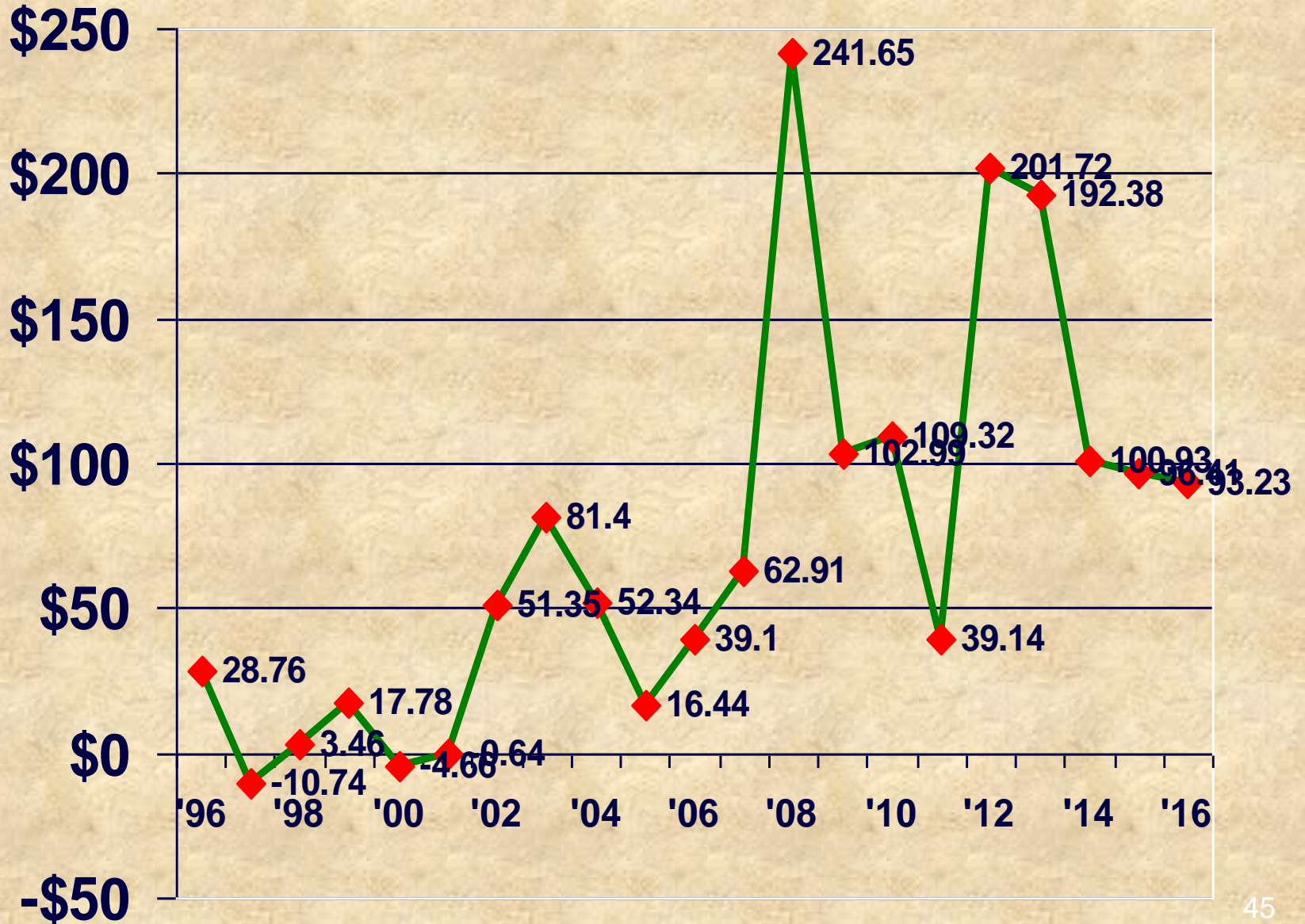
|        |      |
|--------|------|
| ● 1999 | 3.05 |
| ● 2000 | 2.90 |
| ● 2001 | 2.99 |
| ● 2002 | 3.26 |
| ● 2003 | 3.46 |
| ● 2004 | 3.48 |
| ● 2005 | 3.34 |
| ● 2006 | 3.89 |
| ● 2007 | 5.05 |
| ● 2008 | 7.48 |
| ● 2009 | 6.14 |
| ● 2010 | 5.45 |
| ● 2011 | 7.27 |
| ● 2012 | 8.08 |
| ● 2013 | 7.51 |
| ● 2014 | 6.28 |
| ● 2015 | 5.73 |
| ● 2016 | 4.68 |



# All Barley Average Yields, Region 3

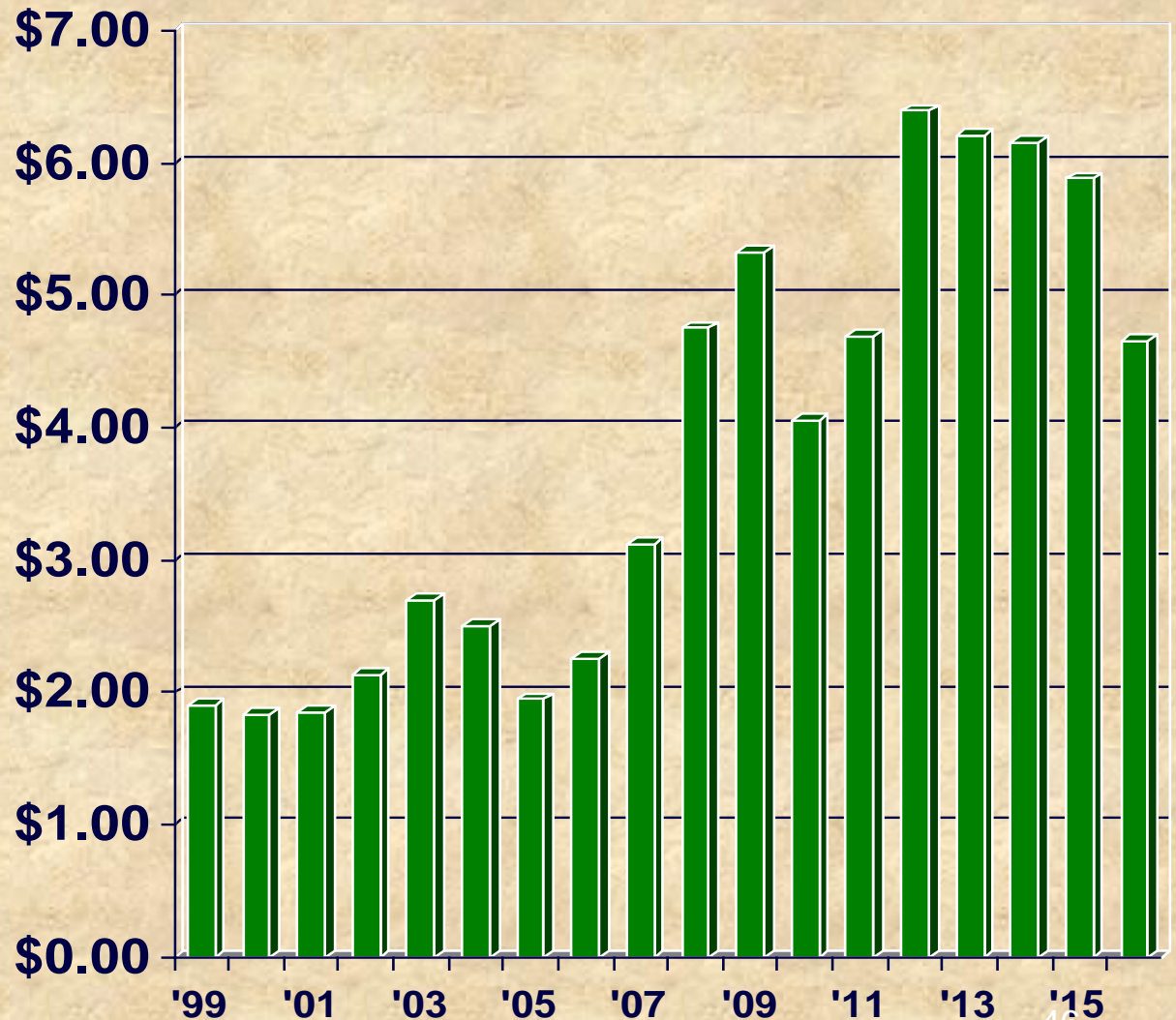


# Barley Net Return per Acre on Cash Rented Land, Avg. Rent \$66.18



# Average Received for Barley Cash Sales

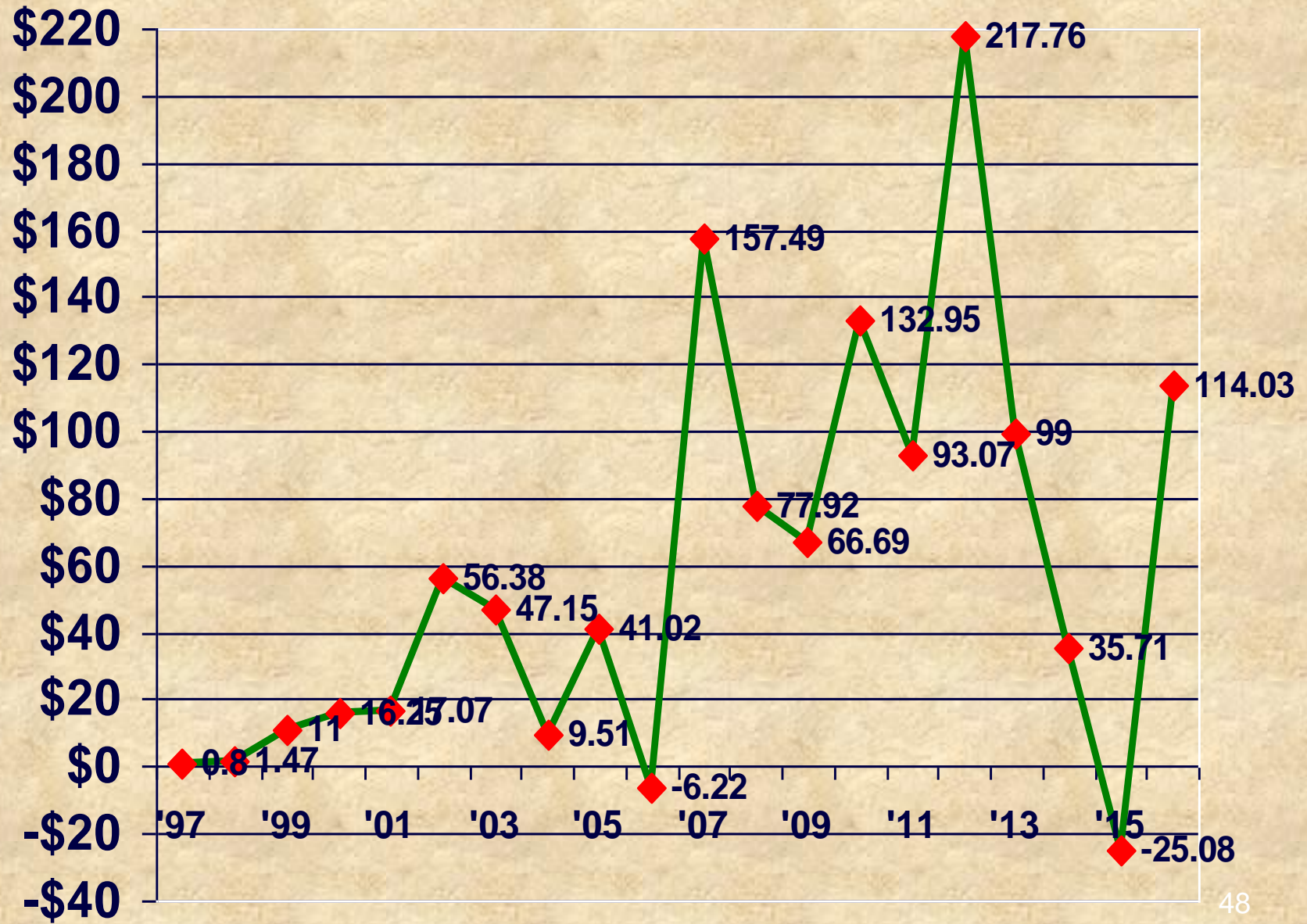
|        |      |
|--------|------|
| ● 1999 | 1.91 |
| ● 2000 | 1.83 |
| ● 2001 | 1.85 |
| ● 2002 | 2.14 |
| ● 2003 | 2.70 |
| ● 2004 | 2.50 |
| ● 2005 | 1.95 |
| ● 2006 | 2.26 |
| ● 2007 | 3.12 |
| ● 2008 | 4.75 |
| ● 2009 | 5.32 |
| ● 2010 | 4.05 |
| ● 2011 | 4.69 |
| ● 2012 | 6.39 |
| ● 2013 | 6.20 |
| ● 2014 | 6.16 |
| ● 2015 | 5.88 |
| ● 2016 | 4.65 |



# All Soybeans Average Yields, Region 3



# Soybean Net Return per Acre on Cash Rented Land, Avg. Rent \$69.62



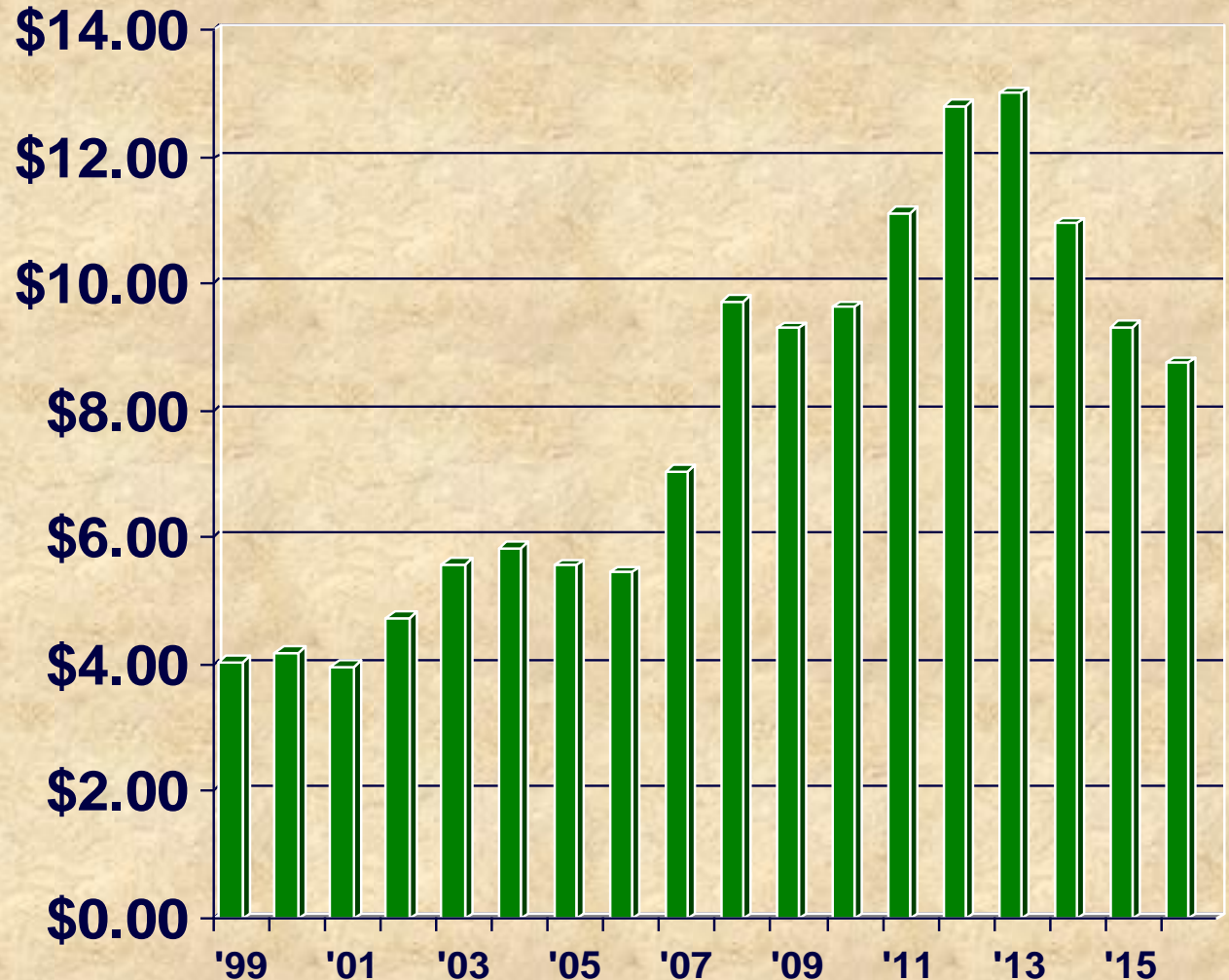


# **Soybeans Net Return per Acre on Cash Rented Land, 2016**

|          |                       |
|----------|-----------------------|
| Average  | \$ 114.03 at 42.7 Bu. |
| High 20% | \$ 183.16 at 47.4 Bu. |
| Low 20%  | \$ 16.02 at 37.9 Bu.  |

# Average Price Received for Cash Sales

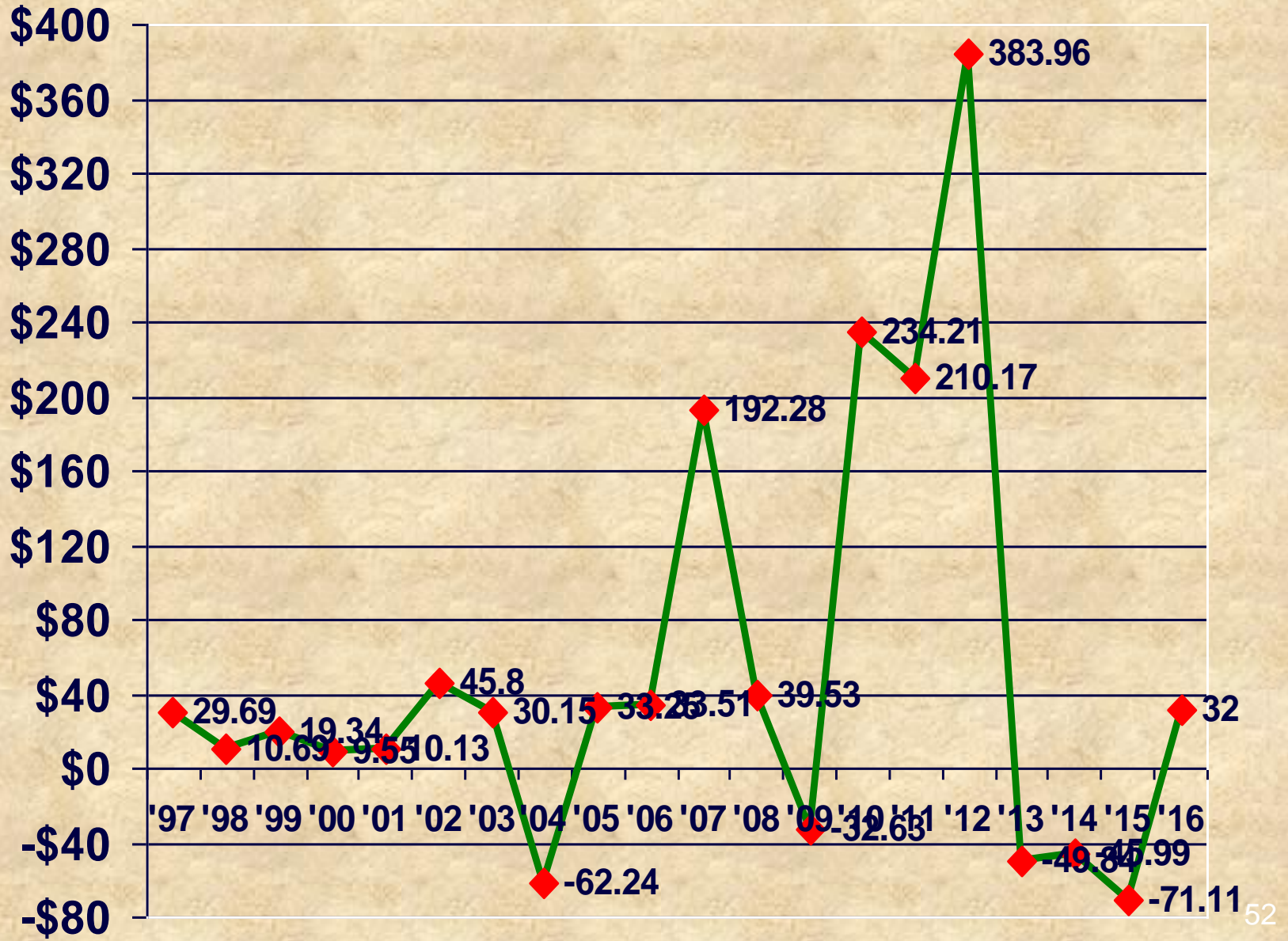
|        |       |
|--------|-------|
| ● 1999 | 4.05  |
| ● 2000 | 4.19  |
| ● 2001 | 3.97  |
| ● 2002 | 4.75  |
| ● 2003 | 5.59  |
| ● 2004 | 5.84  |
| ● 2005 | 5.56  |
| ● 2006 | 5.45  |
| ● 2007 | 7.06  |
| ● 2008 | 9.73  |
| ● 2009 | 9.30  |
| ● 2010 | 9.64  |
| ● 2011 | 11.13 |
| ● 2012 | 12.81 |
| ● 2013 | 13.02 |
| ● 2014 | 10.97 |
| ● 2015 | 9.33  |
| ● 2016 | 8.75  |



# All Corn Average Yields, Region 3



# Corn Net Return per Acre on Cash Rented Land, Avg. Rent \$77.95



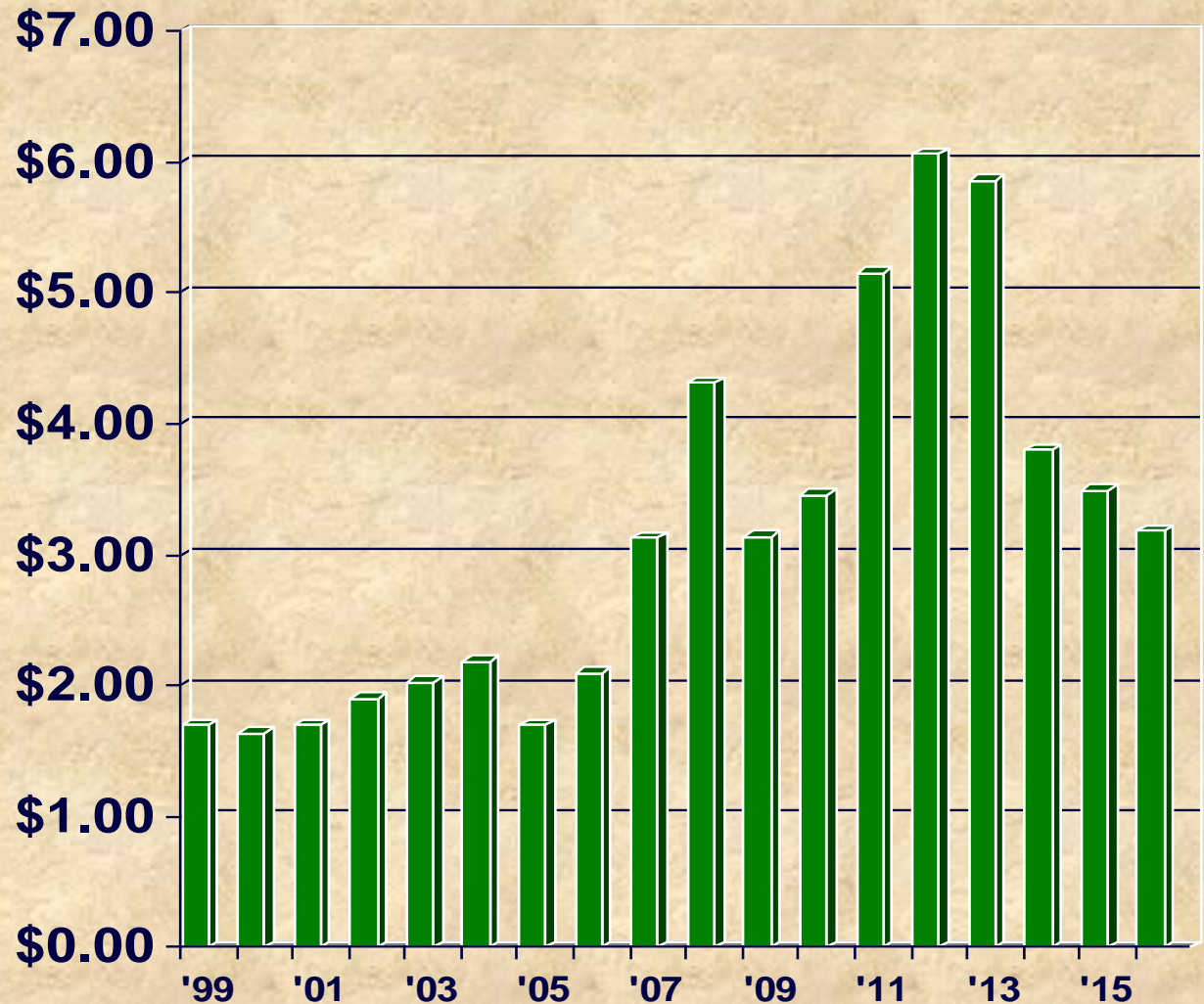
# **Corn Net Return/Acre on Cash Rented Land, 2016**

|                 |                  |                     |
|-----------------|------------------|---------------------|
| <b>Average</b>  | <b>\$ 32.00</b>  | <b>at 158.2 Bu.</b> |
| <b>Low 20%</b>  | <b>\$ -55.67</b> | <b>at 143.9 Bu.</b> |
| <b>High 20%</b> | <b>\$ 164.30</b> | <b>at 171.4 Bu.</b> |

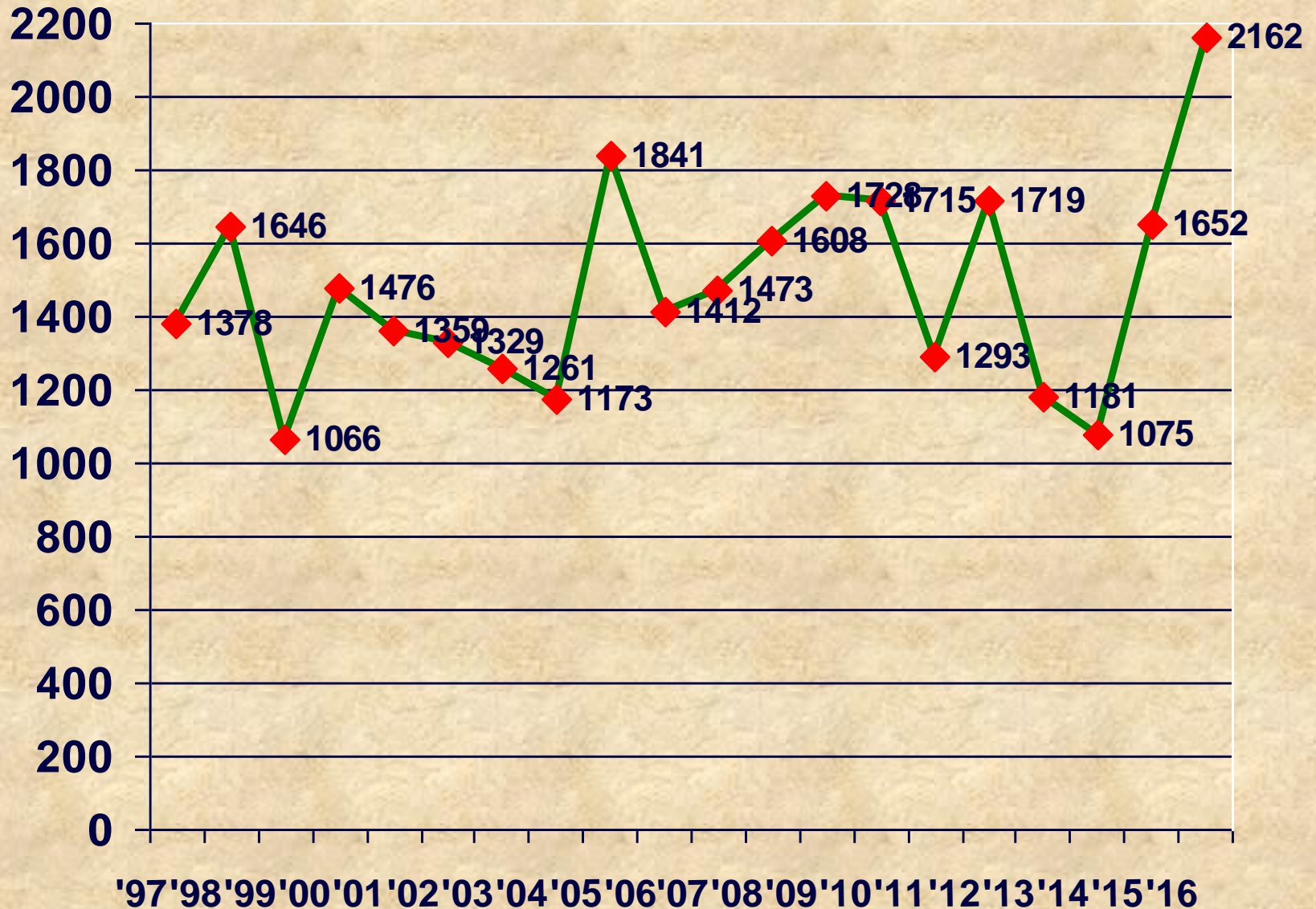


# Average Price Received Cash Sales

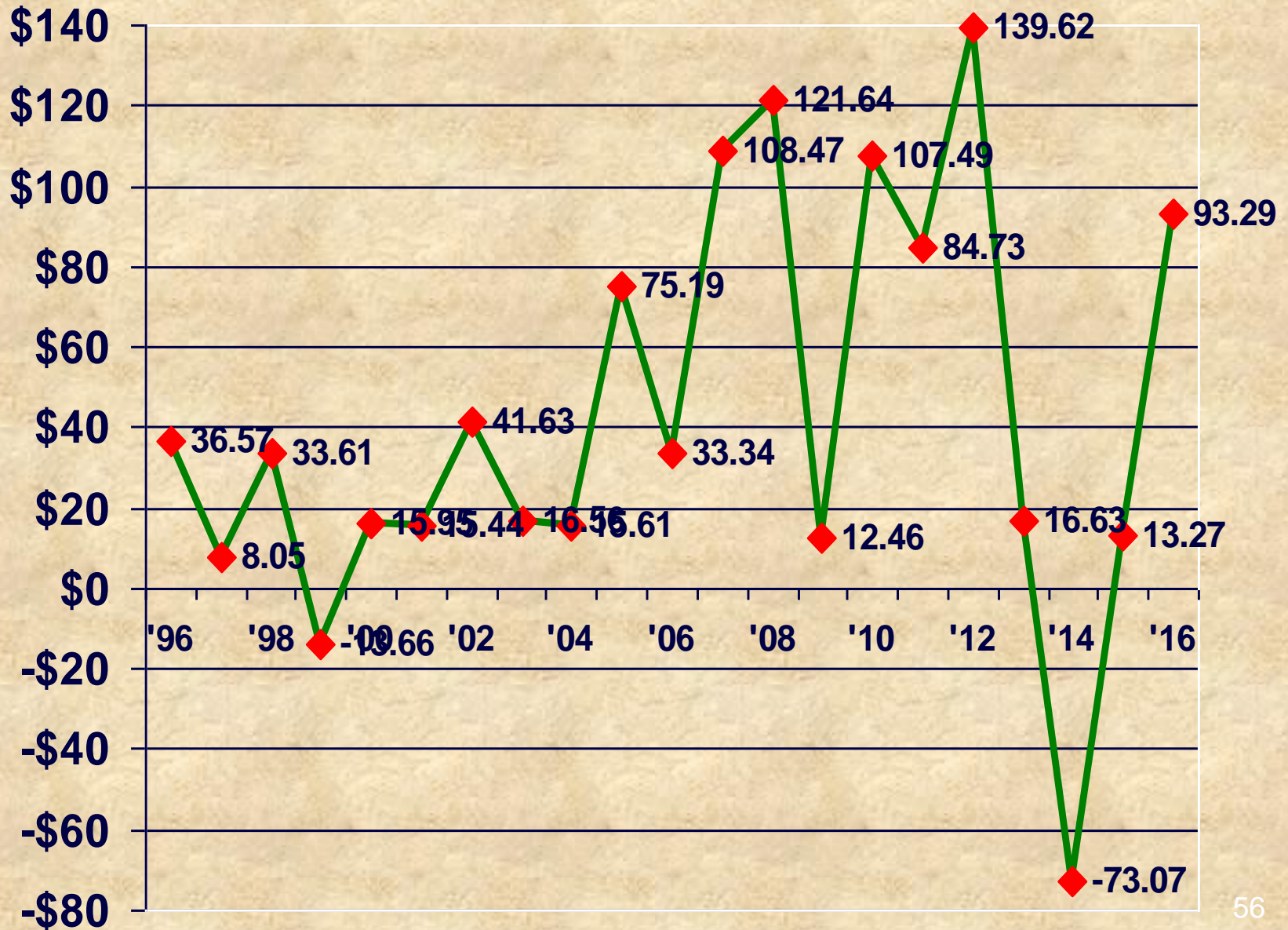
| Corn   |      |
|--------|------|
| ● 1999 | 1.70 |
| ● 2000 | 1.64 |
| ● 2001 | 1.70 |
| ● 2002 | 1.90 |
| ● 2003 | 2.03 |
| ● 2004 | 2.18 |
| ● 2005 | 1.70 |
| ● 2006 | 2.09 |
| ● 2007 | 3.13 |
| ● 2008 | 4.31 |
| ● 2009 | 3.14 |
| ● 2010 | 3.46 |
| ● 2011 | 5.15 |
| ● 2012 | 6.06 |
| ● 2013 | 5.86 |
| ● 2014 | 3.80 |
| ● 2015 | 3.49 |
| ● 2016 | 3.18 |



# All Sunflower Average Yields, Region 3



# Sunflower Net Return per Acre on Cash Rented Land, Avg. Rent \$58.80

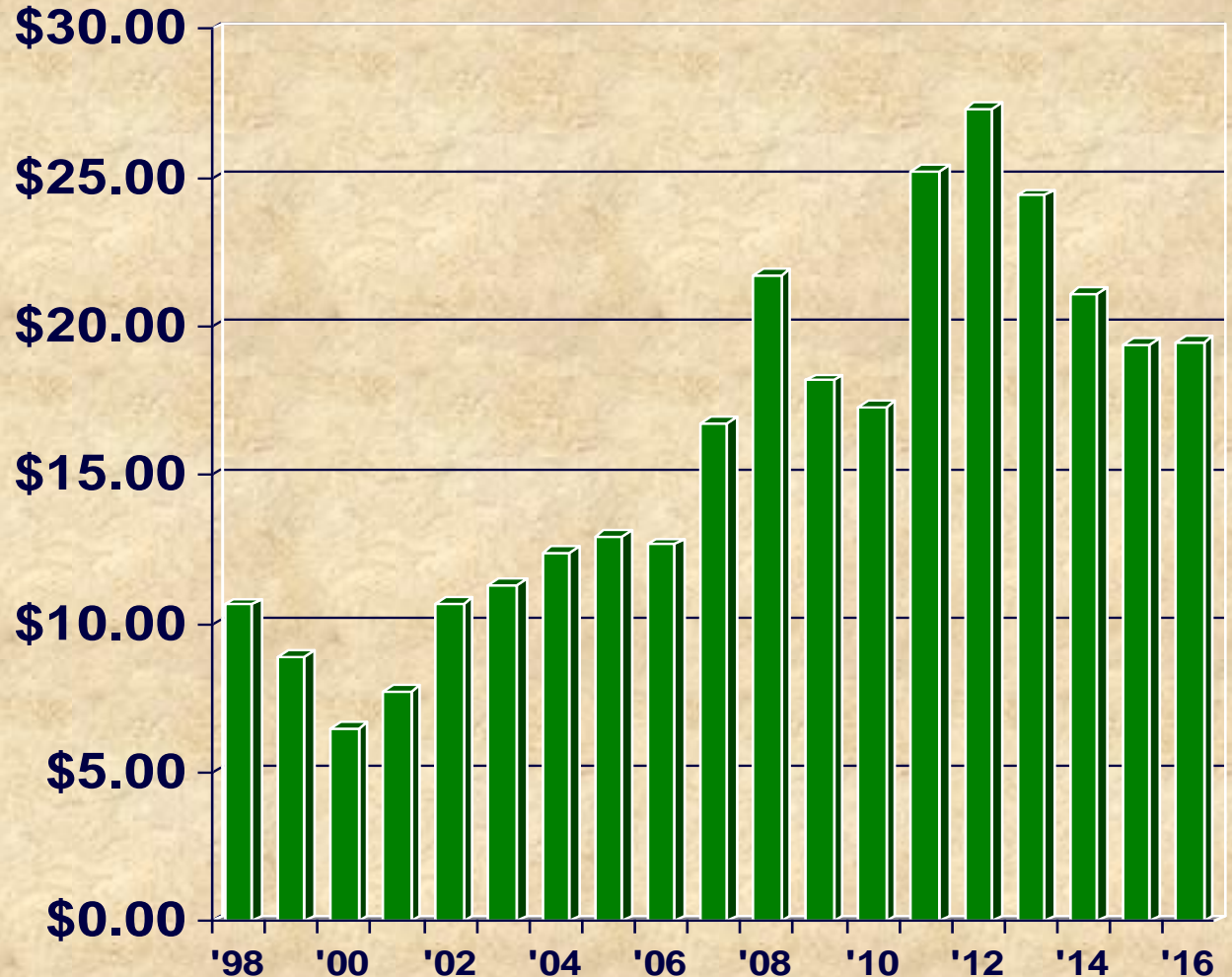




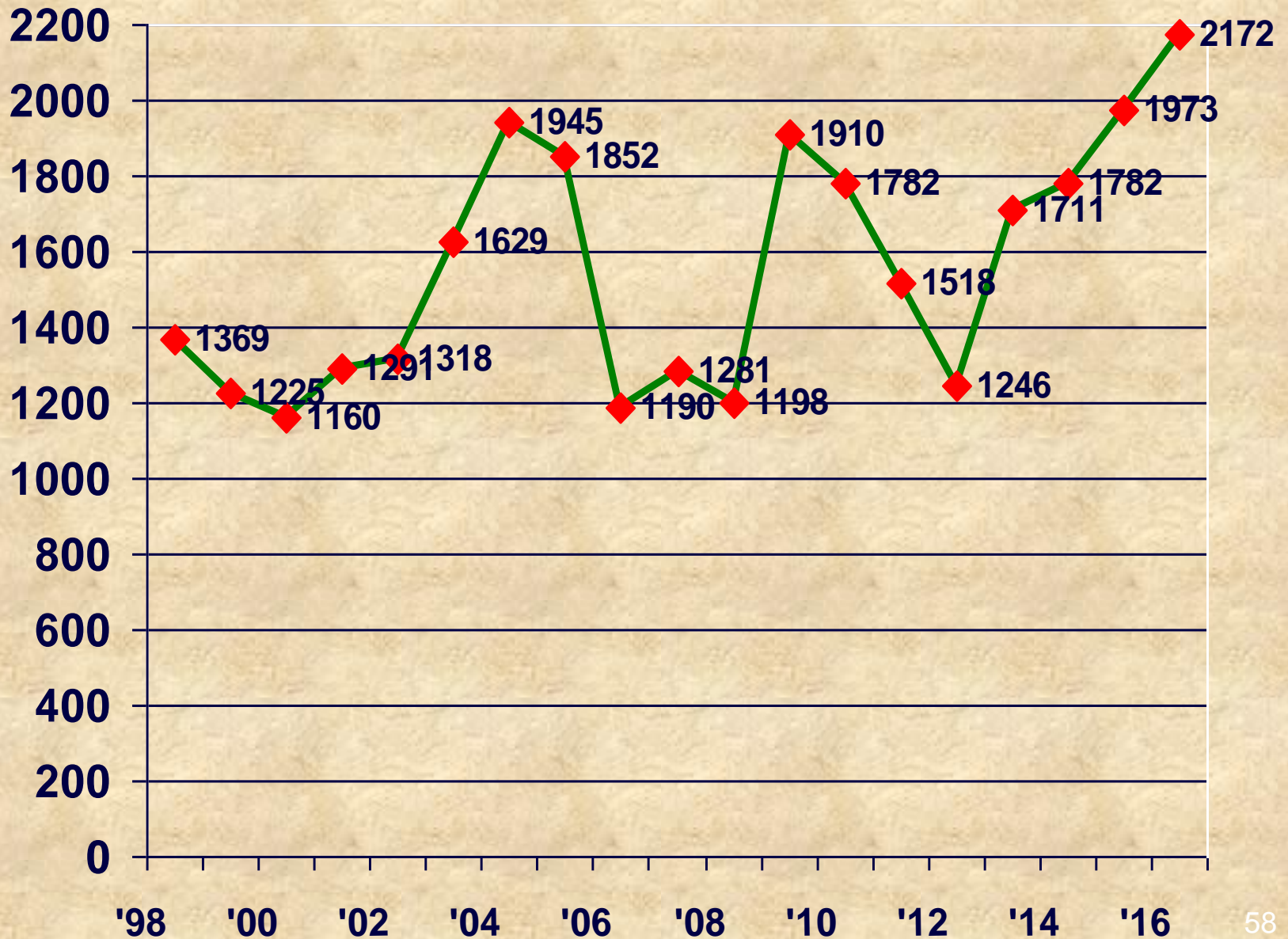
# Average Price Received Cash Sales

## Oil Sunflowers

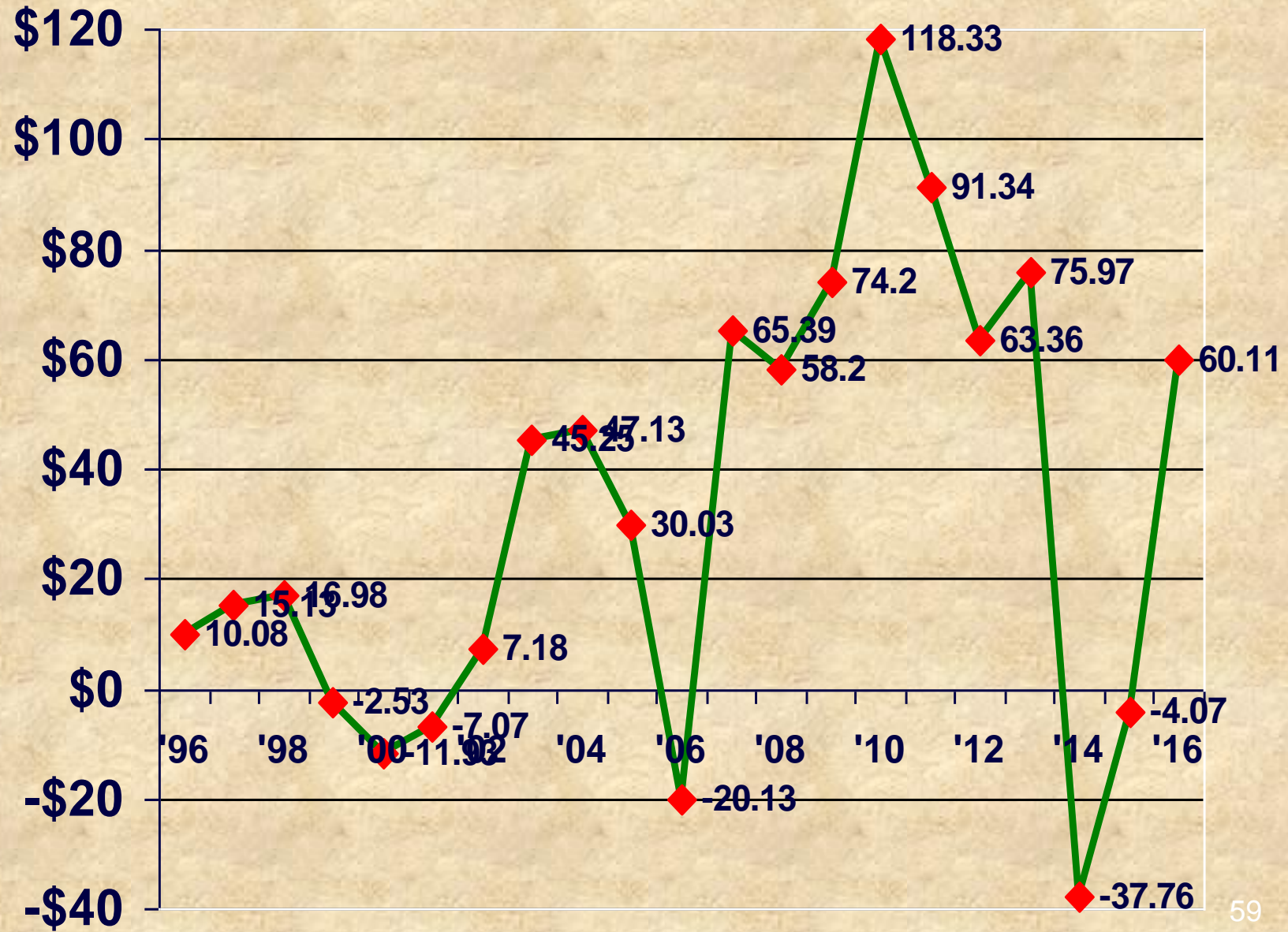
|        |       |
|--------|-------|
| ● 1999 | 8.90  |
| ● 2000 | 6.50  |
| ● 2001 | 7.73  |
| ● 2002 | 10.71 |
| ● 2003 | 11.32 |
| ● 2004 | 12.41 |
| ● 2005 | 12.94 |
| ● 2006 | 12.68 |
| ● 2007 | 16.74 |
| ● 2008 | 21.74 |
| ● 2009 | 18.18 |
| ● 2010 | 17.32 |
| ● 2011 | 25.19 |
| ● 2012 | 27.30 |
| ● 2013 | 24.40 |
| ● 2014 | 21.12 |
| ● 2015 | 19.38 |
| ● 2016 | 19.46 |



# All Canola Average Yields, Region 3



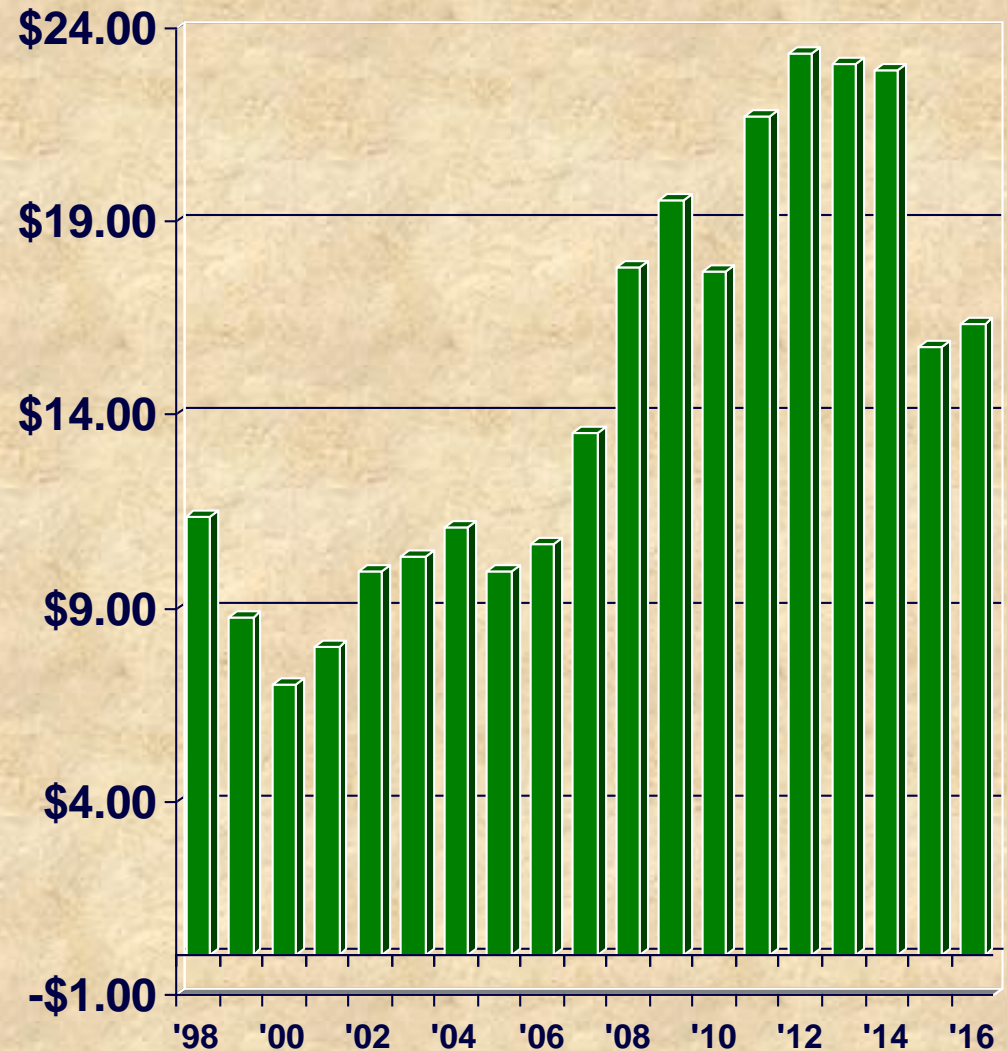
# Canola Net Return per Acre on Cash Rented Land, Avg. Rent \$47.95



# Average Price Received Cash Sales

## Canola

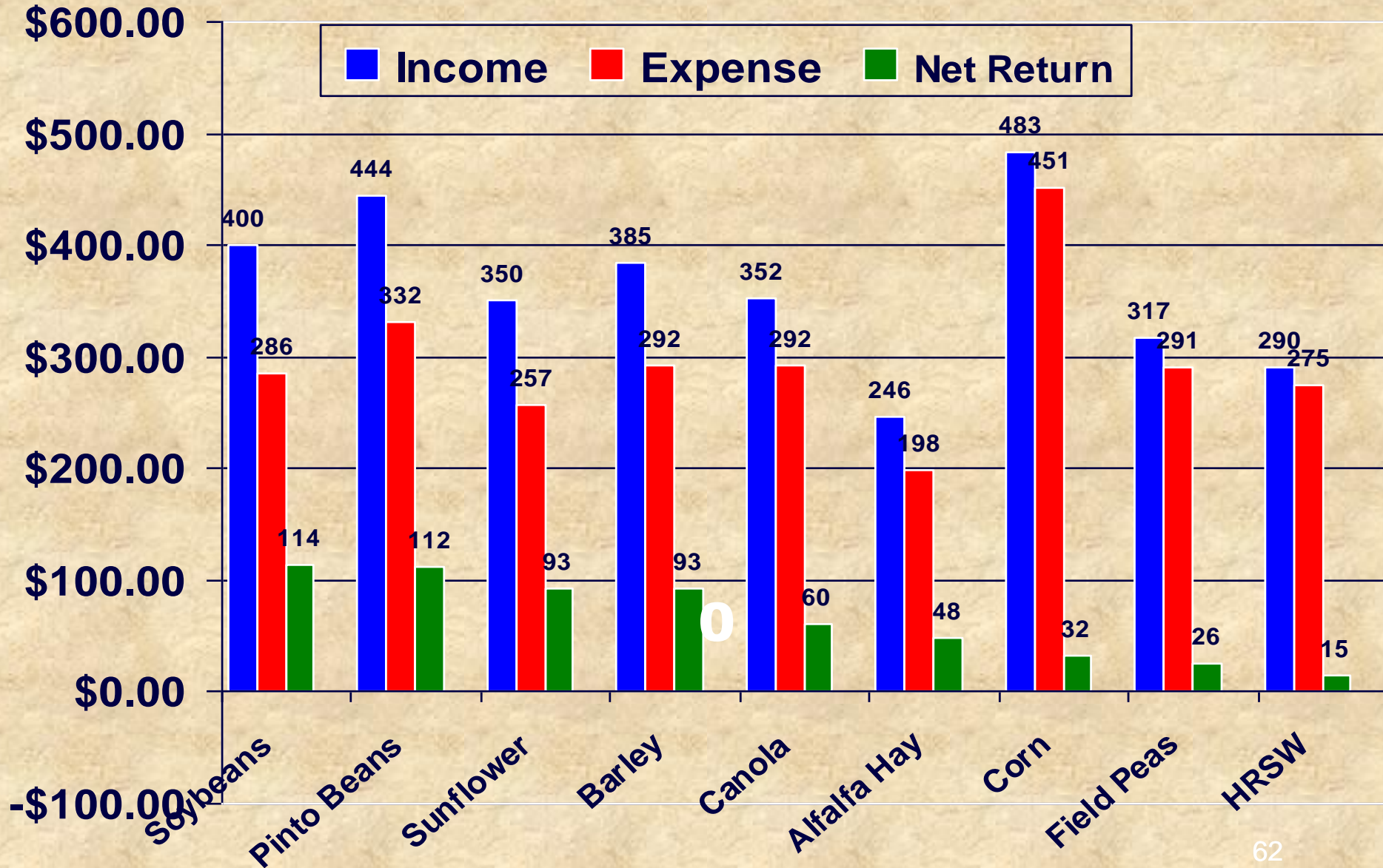
|        |       |
|--------|-------|
| ● 1999 | 8.78  |
| ● 2000 | 7.03  |
| ● 2001 | 7.98  |
| ● 2002 | 9.97  |
| ● 2003 | 10.34 |
| ● 2004 | 11.10 |
| ● 2005 | 9.95  |
| ● 2006 | 10.68 |
| ● 2007 | 13.52 |
| ● 2008 | 17.85 |
| ● 2009 | 19.57 |
| ● 2010 | 17.71 |
| ● 2011 | 21.76 |
| ● 2012 | 23.39 |
| ● 2013 | 23.10 |
| ● 2014 | 22.95 |
| ● 2015 | 15.75 |
| ● 2016 | 16.37 |



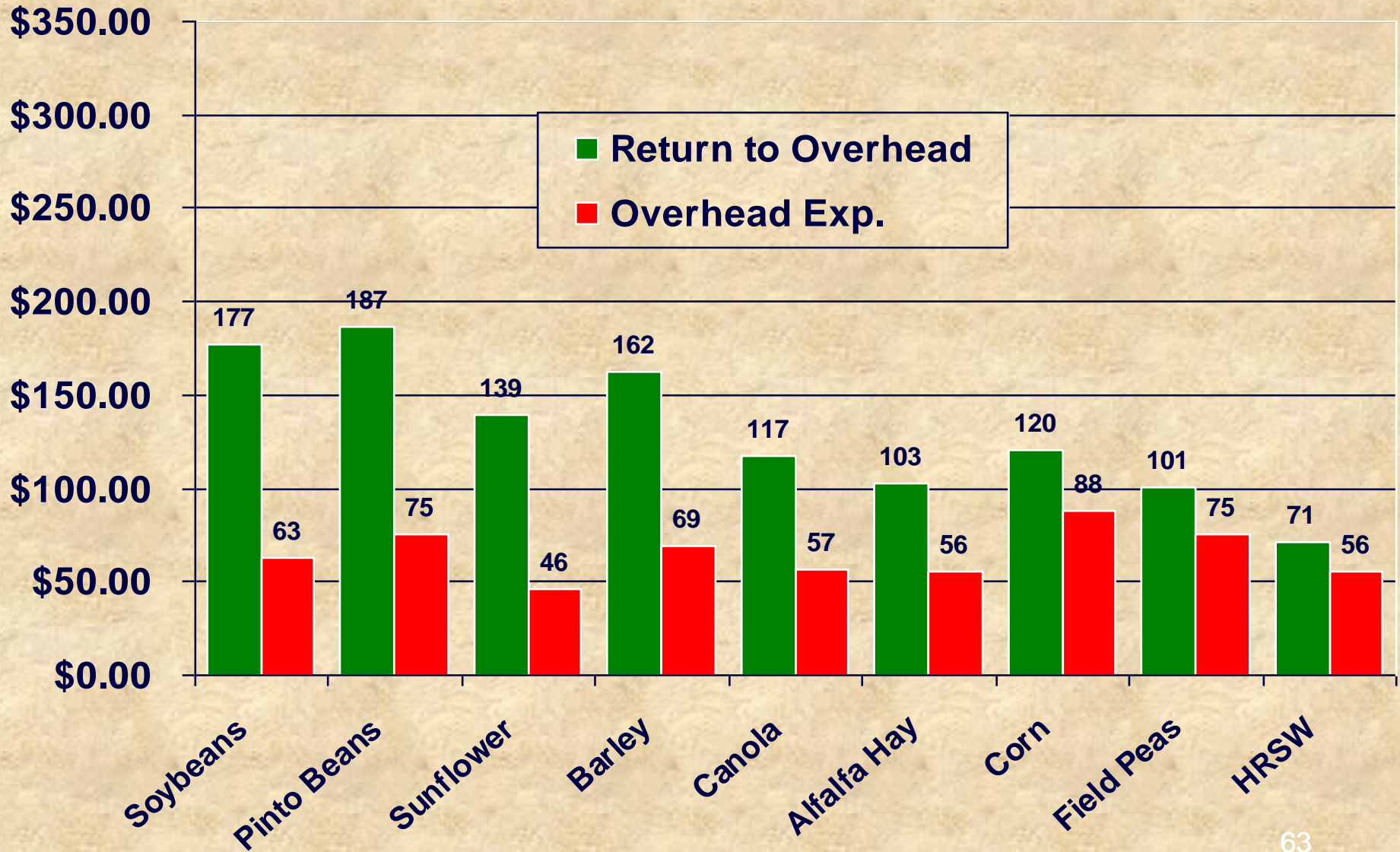
# **Comparing Crop Profitability**

# 2016 Income, Expenses & Net Return/Acre on Cash Rented.

Does not include ARC or PLC payments.

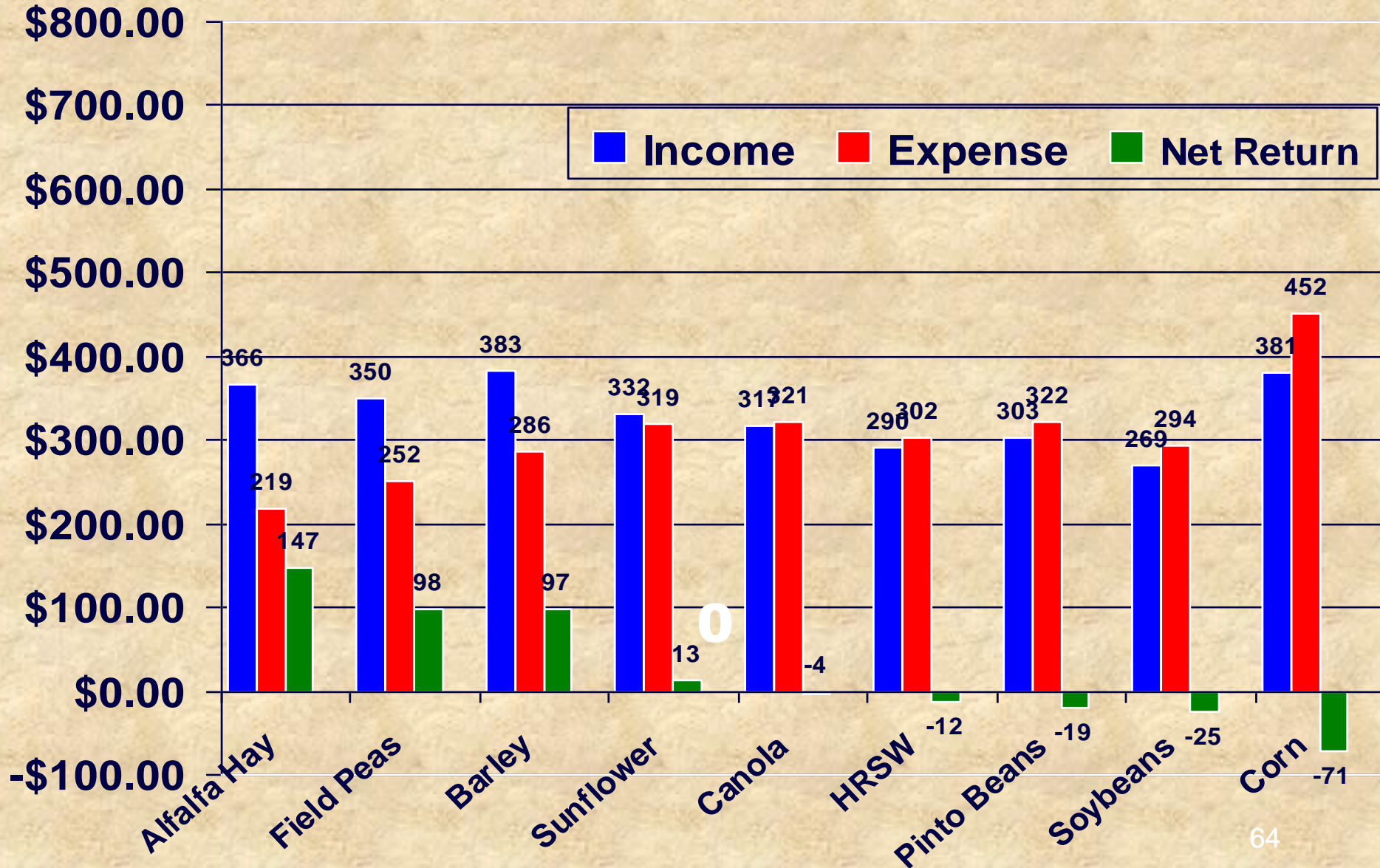


# Return to Overhead per Cash Rented Acre without ARC or PLC Payments, Region 3, 2016



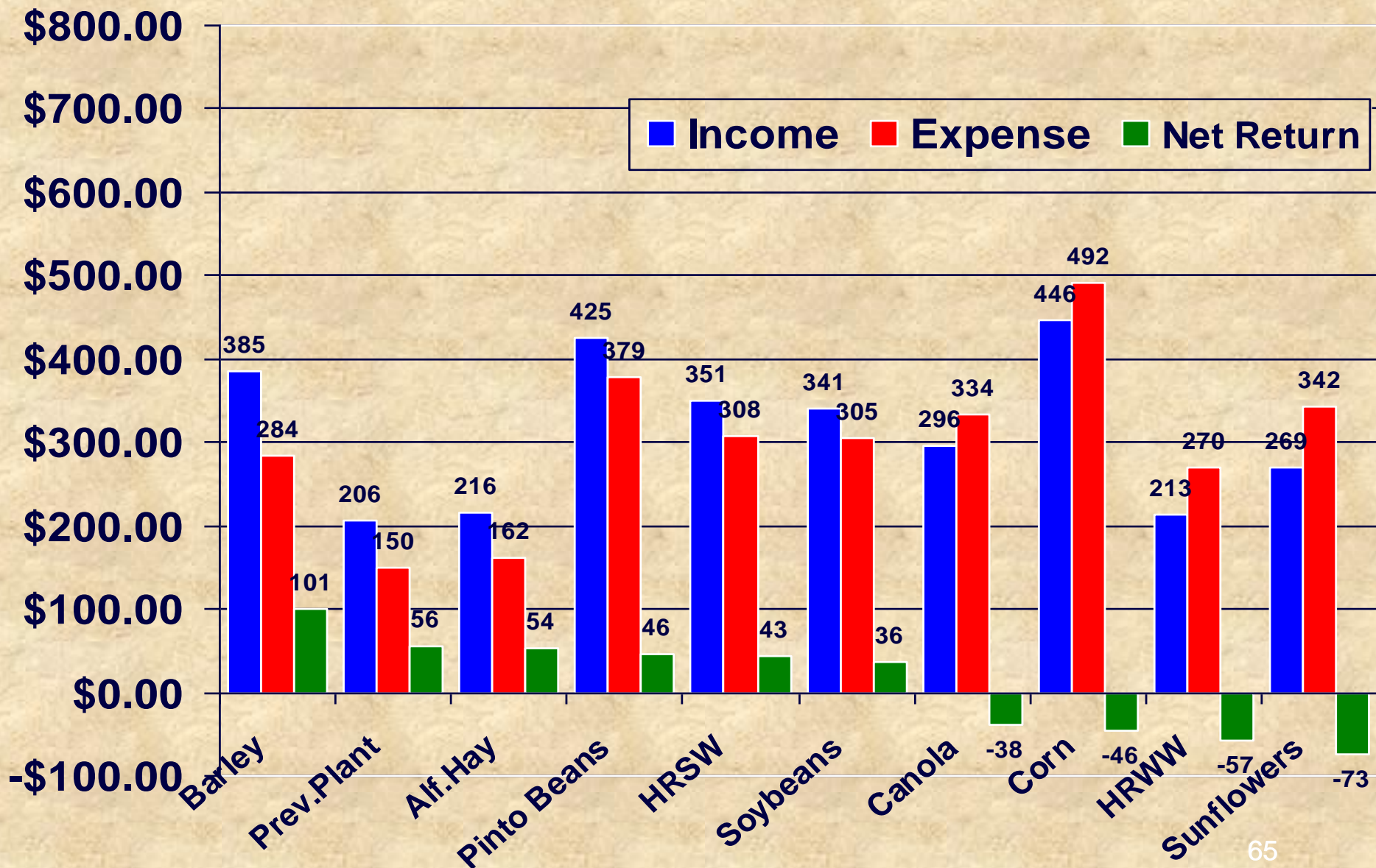
# 2015 Income, Expenses & Net Return/Acre on Cash Rented.

Does not include ARC or PLC payments.

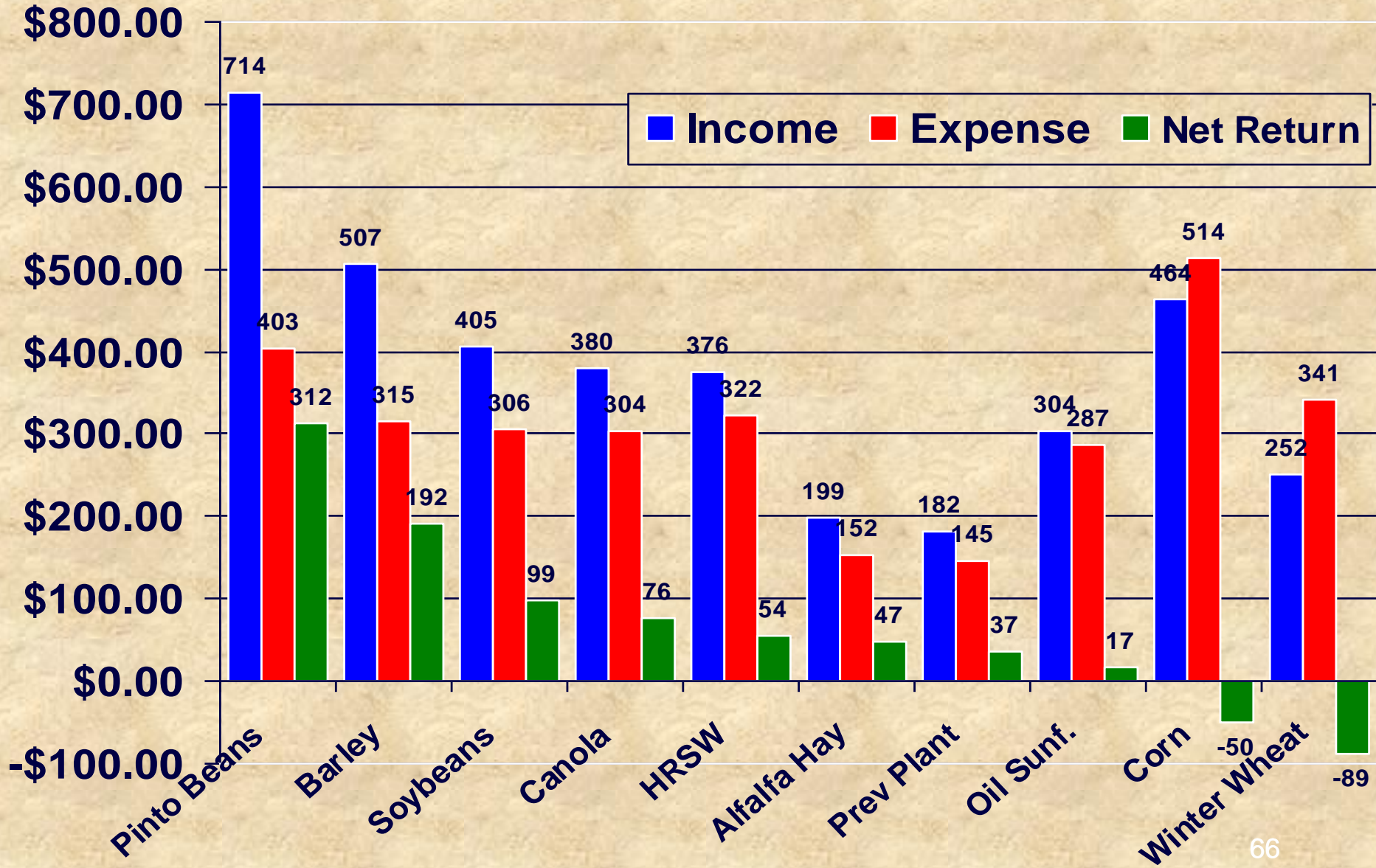




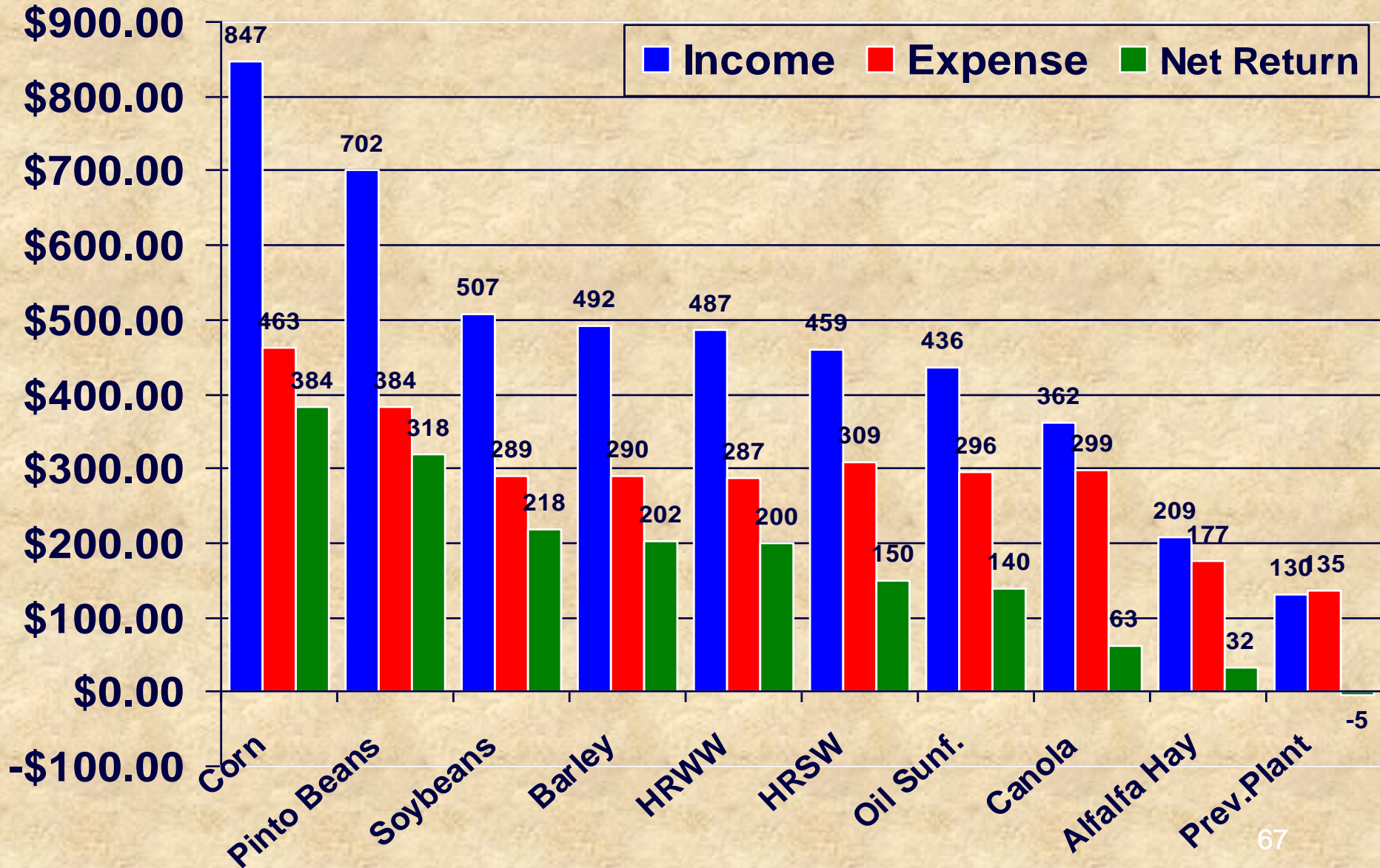
# 2014 Income, Expenses & Net Return/Acre on Cash Rented, Does not included direct or co.-cyc., ARC or PLC payments.



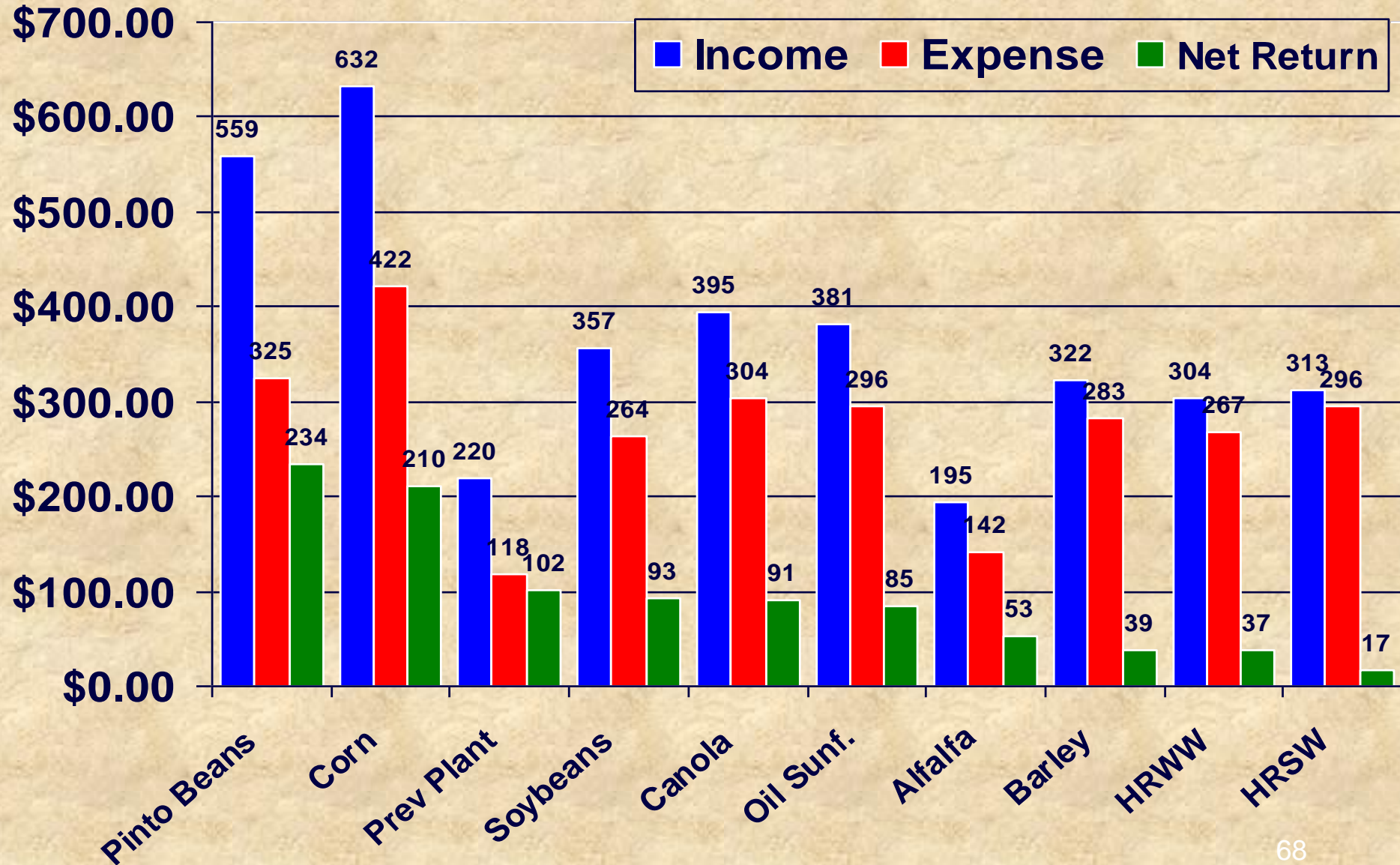
# 2013 Income, Expenses & Net Return/Acre on Cash Rented, Does not included direct or counter-cyclical payments.



# 2012 Income, Expenses & Net Return/Acre on Cash Rented, Does not included direct or counter-cyclical payments.



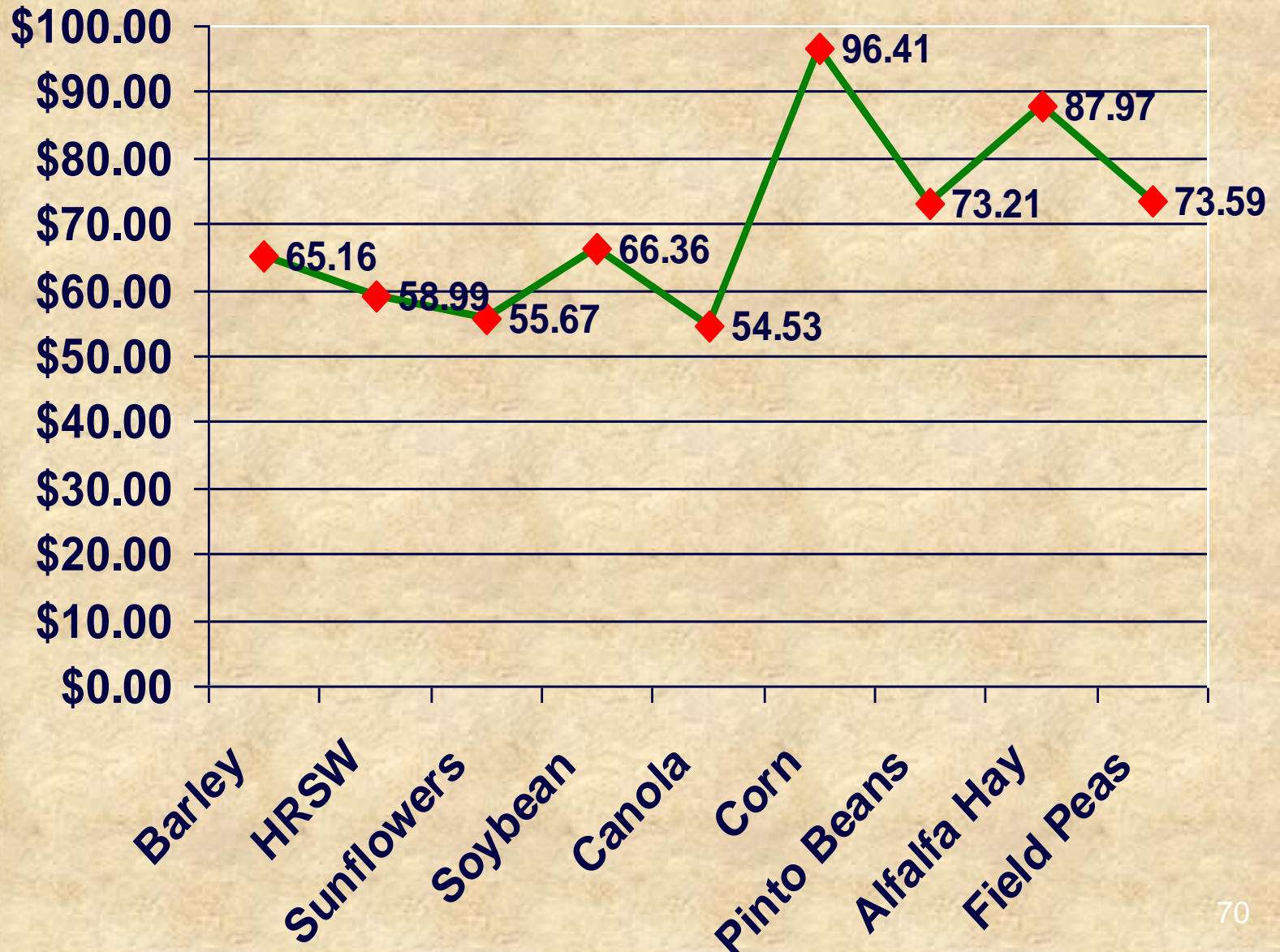
# 2011 Income, Expenses & Net Return/Acre on Cash Rented, Does not included direct or counter-cyclical payments.



# Machinery Costs per Acre

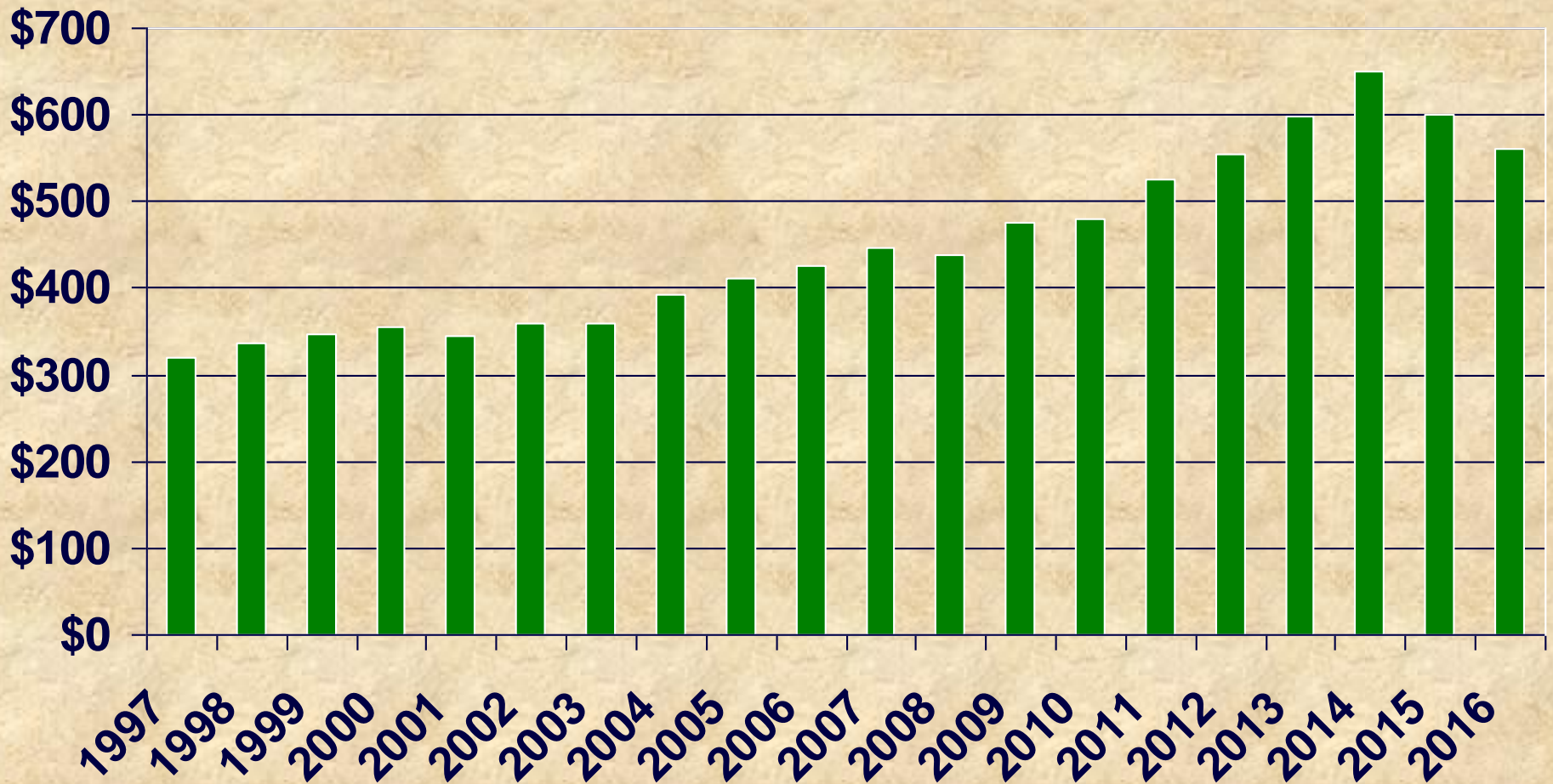
- Fuel
- Repairs
- Custom Hire
- Equipment Leases
- Interest on Intermediate Debt (Machinery portion)
- Machinery Depreciation (Crop portion only)
- Small Grains at \$55-\$70, Row Crops \$75-\$100

# 2016 Machinery Costs per acre, Cash Rented Cropping Systems



# **Beef Production in 2016**

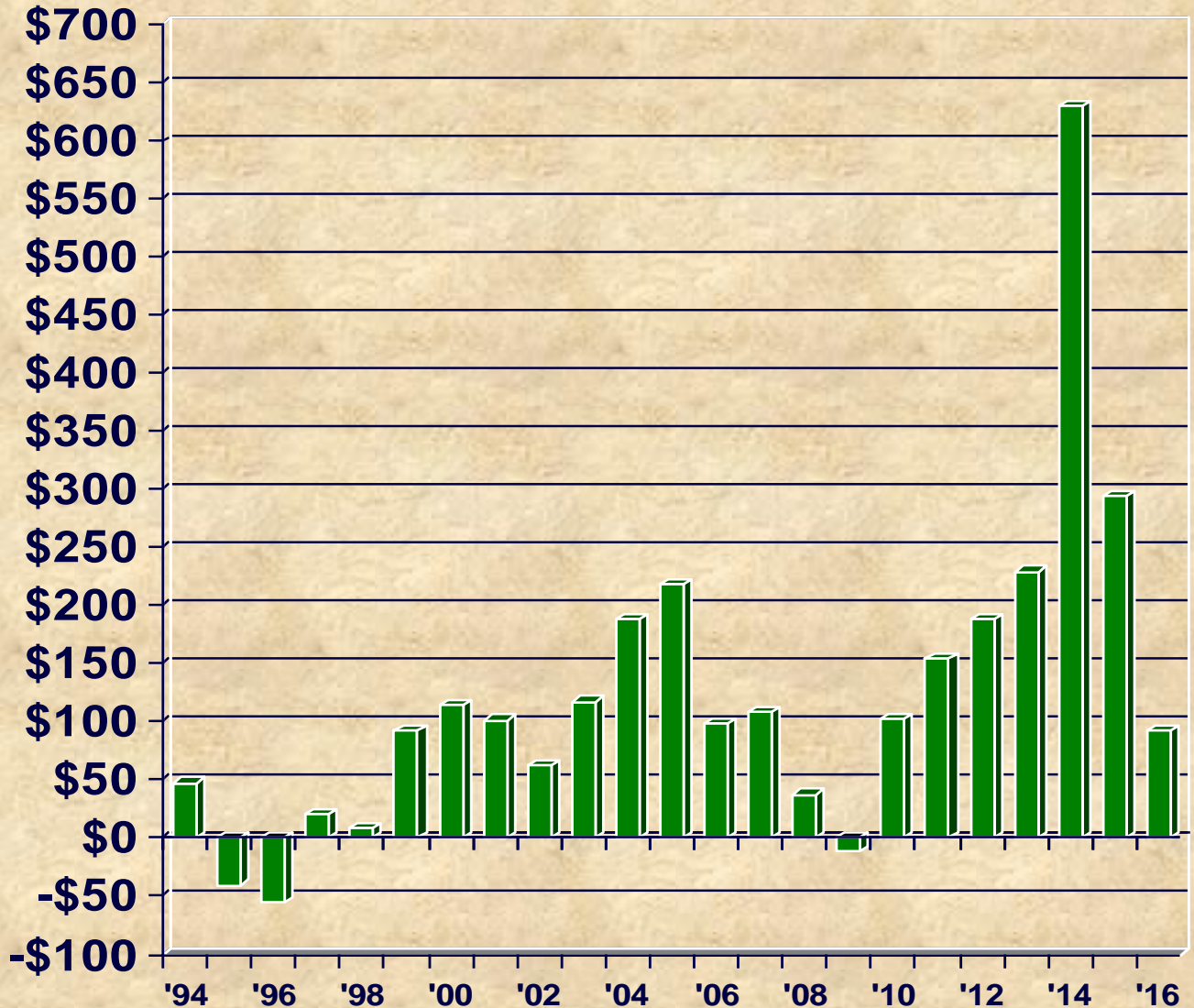
# Direct & Overhead Expenses per Cow, does not include net inventory change. Net Inventory change was \$54.64 in 2016.





# Net Return per Cow, Beef Cow Calf

- 1999 92.51
- 2000 114.80
- 2001 101.03
- 2002 62.82
- 2003 117.38
- 2004 187.63
- 2005 217.72
- 2006 98.40
- 2007 108.46
- 2008 37.75
- 2009 -11.35
- 2010 102.87
- 2011 154.62
- 2012 188.15
- 2013 229.46
- 2014 628.84
- 2015 293.43
- 2016 91.90



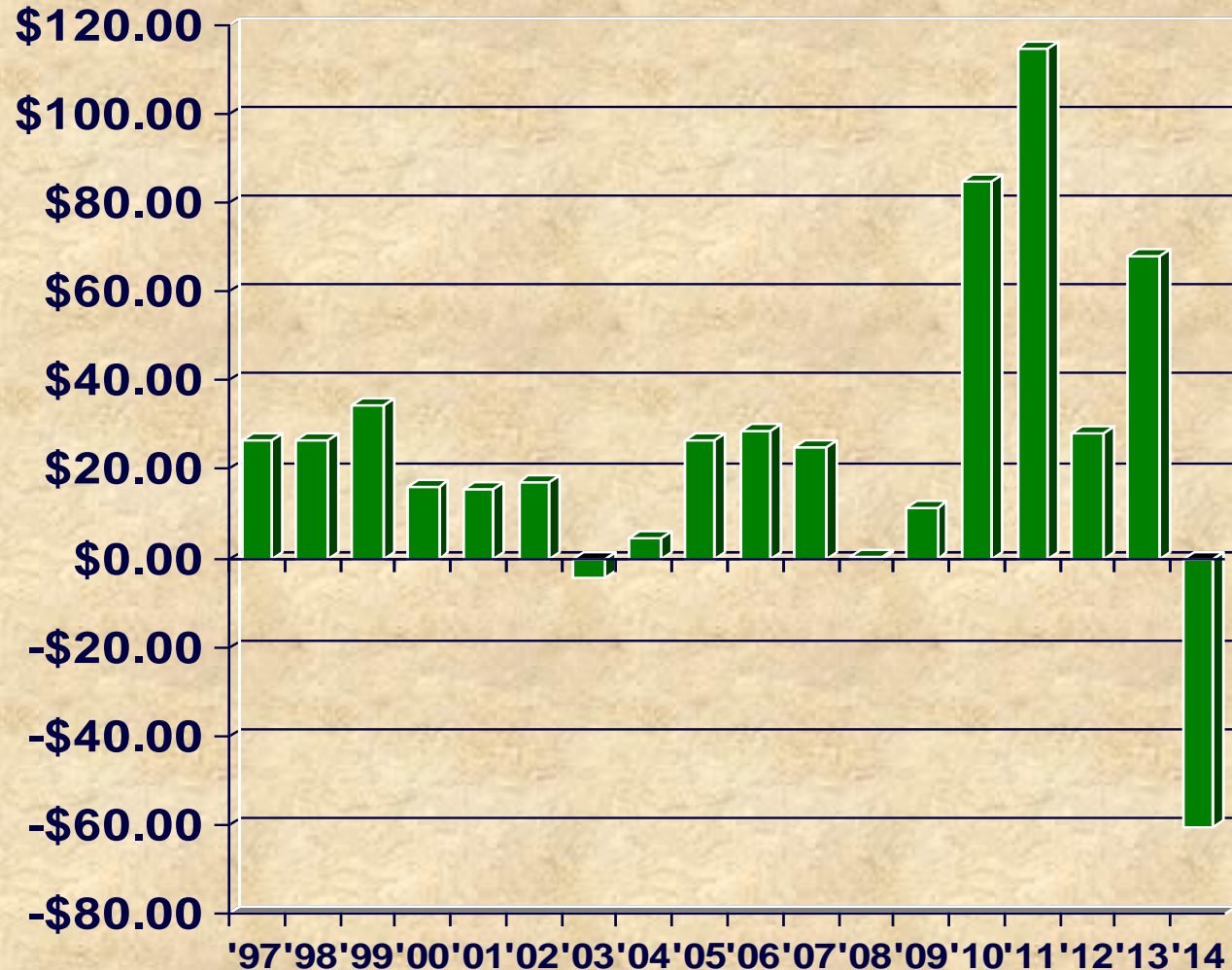
# Other Beef Cow Items:

- Total average of **all costs** are \$615.45 per cow.
- Average Profit per cow at \$91.90
- Avg. weaning wt. 569 lbs.
- Pounds weaned per exposed female 513 lbs.
- Avg. feed cost per cow of \$351.73
- Avg. range or pasture cost per cow \$135.40
- Avg. cost per AUM was \$18.51 for rented pasture.
- Avg. cost to produce a ton of grass hay \$54.84
- Avg. cost to produce a ton of alfalfa hay \$54.66
- Avg. cost to produce a ton of corn silage \$26.73 wet, or approximately \$70-80/ton for 90% dry matter.

# Beef Backgrounding, Net Return/Head

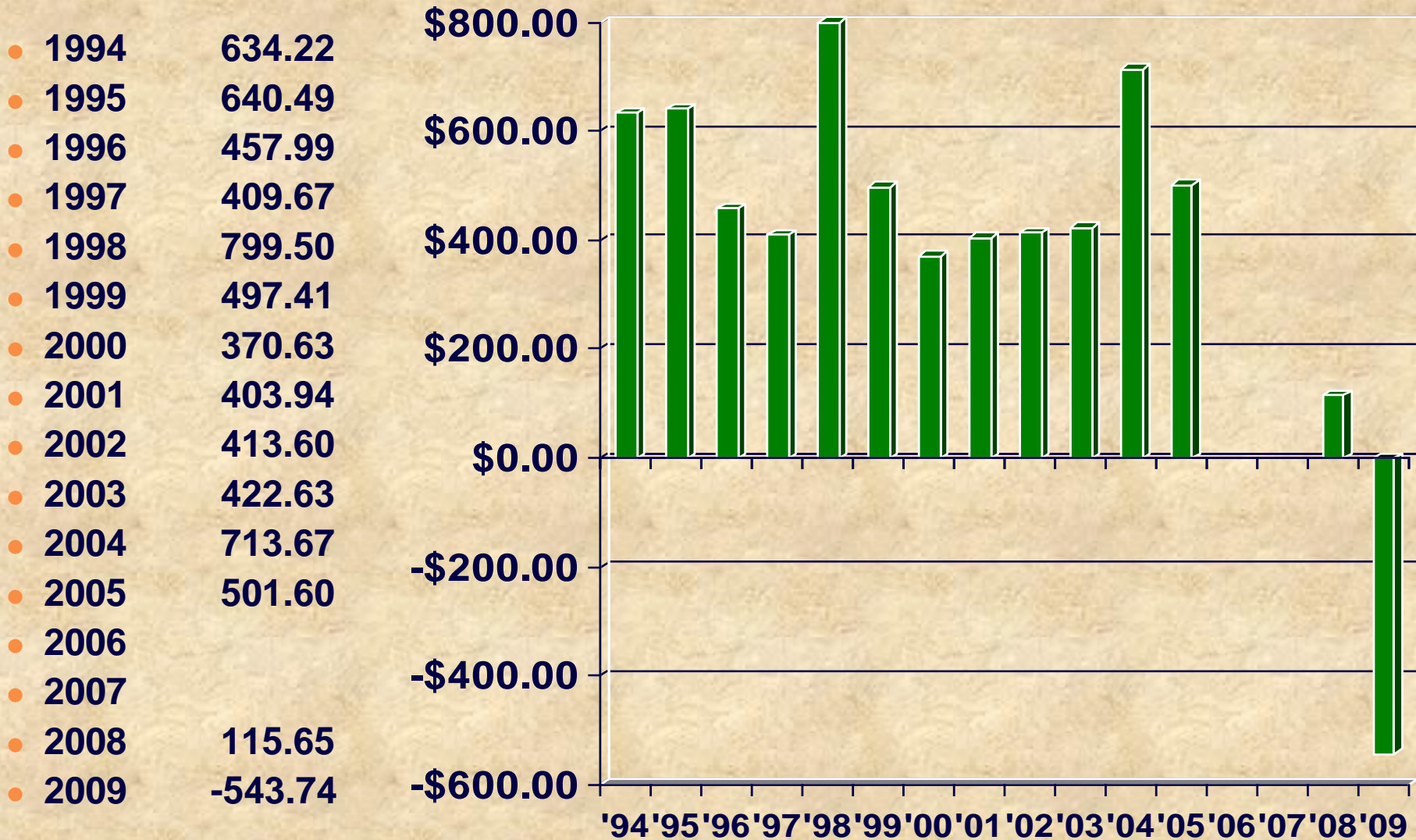
Per Calf

|        |        |
|--------|--------|
| ● 1997 | 26.71  |
| ● 1998 | 26.62  |
| ● 1999 | 34.56  |
| ● 2000 | 16.23  |
| ● 2001 | 15.52  |
| ● 2002 | 17.37  |
| ● 2003 | -4.35  |
| ● 2004 | 4.29   |
| ● 2005 | 26.62  |
| ● 2006 | 28.90  |
| ● 2007 | 24.74  |
| ● 2008 | .49    |
| ● 2009 | 11.54  |
| ● 2010 | 84.63  |
| ● 2011 | 114.85 |
| ● 2012 | 27.96  |
| ● 2013 | 68.19  |
| ● 2014 | -60.39 |



# Net Return per Dairy Cow, No data for 2010-2016

## Dairy Cow

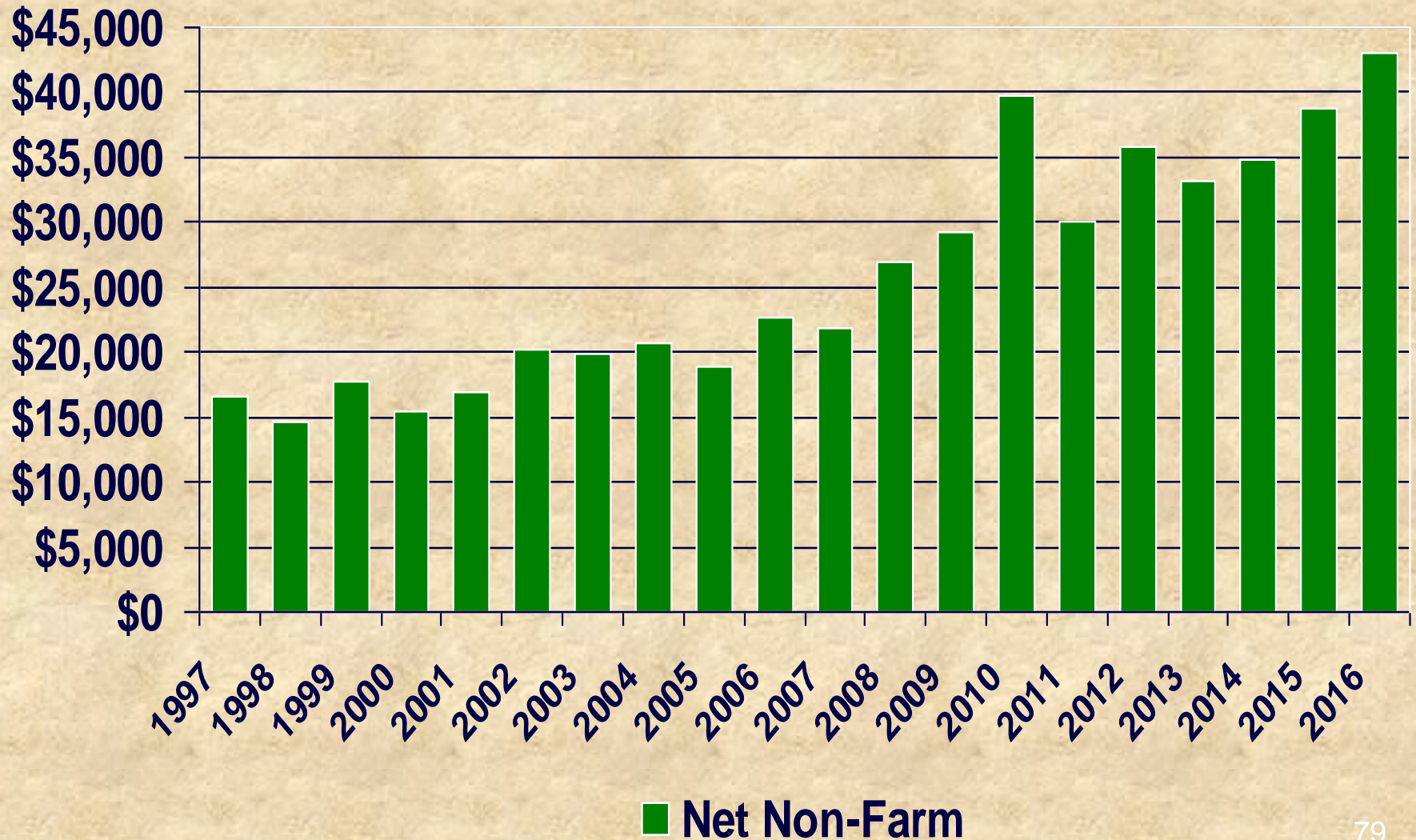


# Beef producer's greatest fear!

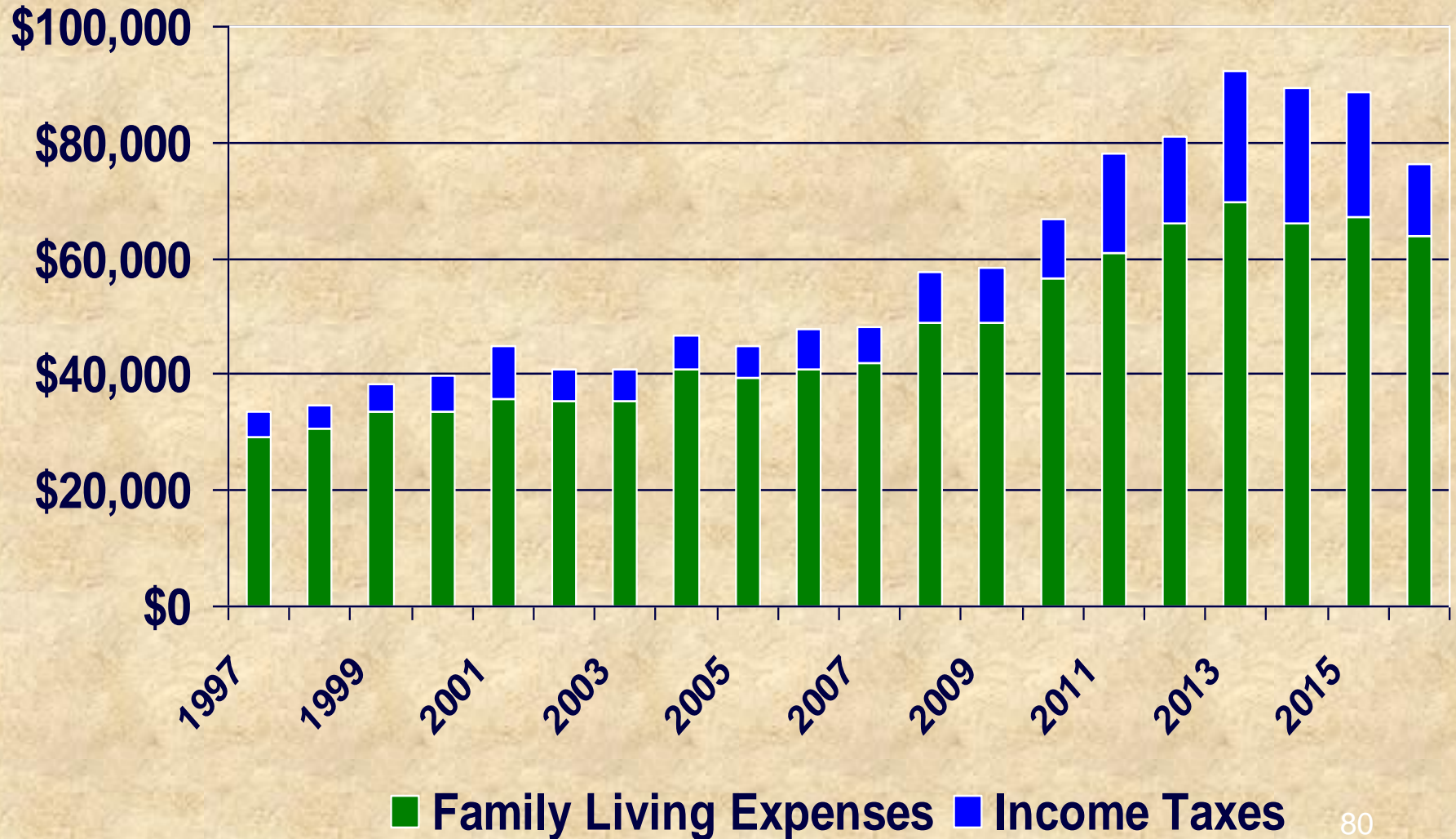


**Non-Farm Income  
and  
Family Living Information**

# Non-Farm Income Per Farm



# Average Reported Family Living Expenditures and Income Taxes per farm.





# Family Living Expenses, 2.8 members, Based on itemization from 42 Farms

|                 |          |                   |          |
|-----------------|----------|-------------------|----------|
| ● Food & Meals  | \$ 7,886 | ● Utilities       | \$ 3,052 |
| ● Medical Care  | \$ 4,217 | ● Veh. Exp.       | \$ 2,419 |
| ● Health Insur. | \$ 7,029 | ● Household Rep   | \$ 2,166 |
| ● Donations     | \$ 2,167 | ● NF Interest     | \$ 264   |
| ● Household     | \$ 5,936 | ● Life Insurance  | \$ 1,446 |
| ● Clothing      | \$ 1,511 | ● Miscellaneous   | \$ 1,079 |
| ● Personal      | \$ 5,292 | ● Recreation      | \$ 3,479 |
| ● Child Care    | \$ 162   | ● Prop. Insurance | \$ 220   |
| ● Gifts         | \$ 1,430 | ● Other Items     | \$ 620   |
| ● Education     | \$ 1,225 | ● Total of all    | \$51,600 |

# **ND FARM** MANAGEMENT EDUCATION

**The North Dakota Farm Business Management Education Program is sponsored by the North Dakota Department of Career and Technical Education**



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