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## 2009 CURRENT AGRICULTURAL USE VALUE OF LAND TABLES

### EXPLANATION OF THE CALCULATION OF VALUES FOR VARIOUS SOIL MAPPING UNITS FOR TAX YEAR 2009

The annual current agricultural use values of land are calculated by the capitalization of typical net income from agricultural products assuming typical management, cropping and land use patterns, and yields for given types of soils. The necessary information is available for approximately 3500 map units, which are the soils with slopes less than 25 percent. The information used for a capitalized net income approach is as follows:

YIELD INFORMATION  
CROPPING PATTERNS  
CROP PRICES  
NON-LAND PRODUCTION COSTS  
CAPITALIZATION RATE

Each of these factors is explained below.

#### A. YIELD INFORMATION

For each of the soil mapping units, data regarding typical yields of each of the four major field crops (corn, soybeans, wheat and hay) were last published in 1984. In order to reflect more current, accurate yields, those yields of record have been updated by a factor based on the ten years of yield information most recently published by the Ohio Department of Agriculture. For tax year 2009, the data used was from calendar years 1998-2007. The factor for each crop was computed by averaging the ten years of yield data and dividing that average by the overall 1984 yield for that crop published by the Ohio Department of Agriculture. This factor was then applied to the 1984 crop yield of record for each mapping unit.

#### B. CROPPING PATTERNS

The cropping pattern for each map unit was determined by the slope of that unit with two exceptions. The exceptions are as follows:

- (1) Soil map units with a productivity index of 55 or less were assumed to be most profitably used as pasture. Therefore, we used a cropping pattern of 100% hay for these soils.
- (2) We used a pattern of 50% corn and 50% soybeans for organic soil map units.

All other soil map units were assigned a cropping pattern according the following schedule.

<u>% Slope</u>	<u>Corn</u>	<u>Soybeans</u>	<u>Wheat</u>	<u>Hay</u>
0-1, 0-2, 0-3, 0-4, 0-5, 1-3, 1-4, 1-5 .....	35%	45%	15%	5%
0-6, 0-8, 0-10, 1-6, 1-7, 1-8, 2-4, 2-5, 2-6, 2-8, 3-6, 3-8 .....	35%	37%	15%	13%
0-15, 1-15, 2-12, 3-10, 3-12, 3-15, 4-10, 4-12, 5-10, 5-15, 6-12, 6-15, 7-15, 8-15.....	35%	20%	20%	25%
5-20, 6-18, 6-20, 8-20, 8-25, 9-18, 10-15, 10-20, 10-25, 12-18, 12-20, 12-25, 15-20, 15-25, 18-25.....	20%	-	10%	70%

### C. CROP PRICE INFORMATION

The crop prices used for the four field crops are five-year weighted average prices. Crop price data were collected for seven years and the highest and lowest annual prices were dropped and the average was calculated using the remaining five years' data. The prices were weighted based on the statewide production for each year. For this calculation, the seven-year period is 2001 through 2007. The table below shows average weighted prices for this period as well as the weighted prices for the three previous calculations. Each weighted price was reduced by 5% to allow for management and mixed hay was reduced by an additional 15% to account for harvesting loss.

		<b>TY2006</b>	<b>TY2007</b>	<b>TY2008</b>	<b>TY2009</b>
		1998	1999	2000	2001
		<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>
Corn	@bu	\$1.99	\$1.96	\$2.02	\$2.29
Soybeans	@bu	4.84	4.89	5.19	5.60
Wheat	@bu	2.49	2.64	2.89	3.05
Hay-Mixed	@ton	75.54	76.66	79.80	86.18
Hay-Grass	@ton	59.51	61.95	64.77	70.69

The annual production and price per unit for each of these crops for the 2001 through 2007 period are shown in Exhibit A (see page 5).

Two types of hay are used based on slopes and the productivity of the soil. The mixed hay is for lower sloped soils and higher producing soils. The grass hay is for higher slopes and less productive soils found predominantly in southeastern Ohio.

### D. NON-LAND PRODUCTION COSTS

Data on crop production costs were used to estimate average non-land production costs. The data were extracted from the Ohio Crop Enterprise Budget prepared by The Ohio State University Department of Agricultural, Environmental and Development Economics for 2002-2008, inclusive. Again, data were collected for the seven-year period and the highest and lowest costs for each category were eliminated from the array. Five-year average costs per unit of specific non-land production cost items were computed from the remaining data as shown in Exhibit B-1 (see page 6 and 7).

The budgets were computed for each crop at a base yield equal to the lowest yield reported and for each additional unit above the base yield based on information from the Ohio Crop Budgets (see Exhibits B-2 through Exhibit B-5, pages 8-11).

The computed 5 year average non-land production costs for tax year 2009 are summarized below and compared with the costs used for tax year 2008 and 2006 tables:

<u>Crop</u>	<u>Tax Year</u>	<u>Base Yield</u>	<u>Base Cost</u>	<u>Additional Cost Per Unit</u>
Corn	2009	117 bu	\$264.12	\$ 0.72
	2008		242.39	0.90
	2006		232.83	0.92
Soybeans	2009	36 bu	\$175.21	\$ 0.57
	2008		174.44	0.50
	2006		167.50	0.49
Wheat - (Grain Only)	2009	52 bu	\$159.01	\$ 0.86
	2008		156.68	0.84
	2006		151.98	0.87
Hay (All)	2009	2.5 ton	\$131.89	\$ 22.75
	2008		133.80	24.23
	2006		138.26	24.83

E. CAPITALIZATION RATE:

We used the 5-year average Farm Credit Service interest rate of 7.06% assuming a 60% loan for a 15-year term, payable annually. We used a 5-year average interest rate of 7.65% for the 40 percent equity portion (see Exhibit C, page 12). A five percent appreciation over a period of 5 years is included to address the increase in farm land values due to the demand for additional land in an increasingly efficient operation.

The capitalization rate for typical Ohio farm land, not including real property market inflation, was computed by the Akerson mortgage-equity method as follows:

$$\begin{aligned}
 &60\% \text{ loan x annual debt service of } 0.110211 &= & 0.066127 \\
 &40\% \text{ Equity x equity yield rate of } .0765 &= & 0.0306 \\
 &\text{Less equity buildup for 5 years} \\
 &\% \text{ loan x \% mortgage paid off x sinking fund factor at equity rate for 5 years.} \\
 &\quad (0.60) [1 - (7.004143/9.073498)] (0.172165) &= & -0.02356 \\
 &\text{Less 5\% appreciation times sinking fund factor} \\
 &\text{@ equity yield rate of} \\
 &\quad .05 \times 0.17165 &= & \underline{-0.00858} \\
 &\text{Capitalization Rate Before Taxes} &= & 0.064585 \\
 &\text{Rounded to Nearest 1/10 of 1\%} &= & 6.5\%
 \end{aligned}$$

For tax year 2007 the statewide average effective tax rate after application of the reduction factors, (Section 319.301 Ohio Revised Code), levied on agricultural property was 44.84 mills. The ten percent rollback authorized by Section 319.302 of the Code reduced this rate further to 40.34 mills. As a percent of market value the effective tax rate to be used in this year's capitalization formula is therefore 1.4%,  $(.35 \times 40.34)/1000$ .

1.4

Capitalization rate including R.E. taxes 7.9%

The 7.9% capitalization rate is the base rate for typical Ohio farmland.

#### F. CROPLAND VALUES

The current agricultural use cropland value equals the net return for the rotation acre of the soil map unit divided by the capitalization rate. The minimum value for cropland is \$170 per acre.

#### G. WOODLAND AND PASTURE VALUE OF SOILS

- 1.) The woodland value of soils with slopes of 25% or less was determined as follows:
  - a.) The woodland value equals the cropland value less the costs to convert the woodland to cropland. The conversion costs are as follows:
    - i.) Clearing - \$500 per acre for all soils
    - ii.) Drainage
      - a.) For excessively drained, well drained, moderately well drained, (E, W, MW) - No Cost
      - b.) For somewhat poorly drained, poorly drained, very poorly drained, saturated (SWP, P, VP) - \$500 for Tile Drainage
      - c.) A \$250 adjustment for surface drainage for the following soil series: Allis, Atkins, Blanchester, Bono, Canadice, Clermont, Condit, Conneaut, Darien, Delmar, Frenchtown, Fries, Ginat, Ilion, Latty, Lorain, McGuffey, Mill, Miner, Montgomery, Muskego, Pauling, Peoga, Piopolis, Purdy, Roselms, Sheffield, Swanton, Toledo, Trumbull, Valley, Wabash, Wabasha, Warners, Wayland, Willette, and Zipp
  - b.) The minimum value for woodland with slopes of 25% or less is \$100.
- 2.) The pasture value equals the following:
  - i.) Where soil map units listed in these tables are used for permanent pasture, the land should be valued as cropland unless clearing or drainage costs would be incurred in converting the land to cropland. If so, an appropriate deduction should be made for the capital investment necessary for the land to be tilled.
  - ii.) The minimum value for pasture is \$100.
- 3.) The minimum value for woodland and pasture with slopes greater than 25% is \$100.

## FIVE YEAR AVERAGE CROP PRICES FOR TAX YEAR 2009

Source: Ohio Agricultural Statistics Service and OSU Extension

	<u>year</u>	<u>production</u>	<u>price</u>	<u>value (1000s)</u>
<b>CORN</b>	2001	437,460	\$ 2.00	874,920
	2002	252,560	\$ 2.50	631,400
	2003	478,920	\$ 2.45	1,173,354
	2004	491,380	\$ 1.85	909,053
	2005	464,750	\$ 1.80	836,550
	2006	470,640	\$ 3.30	1,553,112
	2007	541,500	\$ 3.95	2,138,925
	Totals		2,130,960	
Weighted Avg. Price			\$ 2.41	
After Management Allowance of 5%			\$ 2.29	
<b>SOYBEANS</b>	2001	187,780	\$ 4.40	826,232
	2002	141,300	\$ 5.45	770,085
	2003	162,640	\$ 7.20	1,171,008
	2004	207,740	\$ 5.15	1,069,861
	2005	201,600	\$ 5.55	1,118,880
	2006	217,140	\$ 6.25	1,357,125
	2007	194,110	\$ 10.10	1,960,511
	Totals		930,420	
Weighted Avg. Price			\$ 5.90	
After Management Allowance of 5%			\$ 5.60	
<b>WHEAT</b>	2001	60,300	\$ 2.50	150,750
	2002	50,220	\$ 3.20	160,704
	2003	68,000	\$ 3.20	217,600
	2004	55,180	\$ 3.15	173,817
	2005	58,930	\$ 3.20	188,576
	2006	65,280	\$ 3.30	215,424
	2007	45,990	\$ 5.50	252,945
	Totals		297,610	
Weighted Avg. Price			\$ 3.21	
After Management Allowance of 5%			\$ 3.05	
<b>MIXED HAY</b>	2001	4,275	\$ 87.50	374,063
	2002	3,750	\$ 96.00	360,000
	2003	3,400	\$ 98.75	335,750
	2004	3,232	\$ 102.50	331,280
	2005	3,630	\$ 87.00	315,810
	2006	3,421	\$ 126.25	431,901
	2007	2,931	\$ 160.71	471,041
	Totals		18,078	
Weighted Avg. Price			\$ 101.39	
After Management Allowance of 15%			\$ 86.18	
<b>GRASS HAY</b>	2001	4,275	\$ 58.75	251,156
	2002	3,750	\$ 71.00	266,250
	2003	3,400	\$ 68.75	233,750
	2004	3,232	\$ 73.67	238,101
	2005	3,630	\$ 71.25	258,638
	2006	3,421	\$ 87.83	300,466
	2007	2,931	\$ 116.00	339,996
	Totals		17,433	
Weighted Avg. Price			\$ 74.41	
After Management Allowance of 5%			\$ 70.69	

## Non-Land Production Costs

### Determination of the 5 Year Average for Use in Computing Crop Budgets Tax year 2009

Source: Ohio Crop Enterprise Budgets

ITEM		UNITS	2002	2003	2004	2005	2006	2007	2008	5 yr. Avg.	
SEED	CORN	1000k	\$4.40	\$1.10	\$1.10	\$1.10	\$1.13	\$1.16	\$2.05	\$1.12	
	SOYBEANS	1000s	\$0.40	\$0.10	\$0.10	\$0.12	\$0.21	\$0.21	\$0.23	\$0.15	
	WHEAT	1000s	\$0.04	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.02	\$0.01	
	HAY	100lb	\$450.00	\$150.00	\$150.00	\$175.00	\$175.00	\$175.00	\$175.00	\$165.00	
FERTILIZER	N Corn		\$0.24	\$0.24	\$0.24	\$0.26	\$0.34	\$0.29	\$0.49	\$0.27	
	N Wheat/Hay		\$0.24	\$0.24	\$0.24	\$0.26	\$0.34	\$0.36	\$0.74	\$0.29	
	P2O5		\$0.24	\$0.24	\$0.24	\$0.30	\$0.31	\$0.31	\$0.87	\$0.28	
	K2O		\$0.13	\$0.13	\$0.13	\$0.18	\$0.21	\$0.20	\$0.48	\$0.17	
	LIME		\$15.00	\$42.00	\$12.00	\$22.00	\$22.00	\$22.00	\$23.50	\$18.60	
ESTABLISHMENT	(OVER 5 YRS.)		\$19.00	\$19.00	\$19.00	\$19.00	\$19.00	\$49.00	\$44.41	\$19.00	
CHEMICALS	CORN		\$20.00	\$22.00	\$22.00	\$24.00	\$24.42	\$24.42	\$26.86	\$23.37	
	SOYBEANS		\$20.00	\$26.00	\$26.00	\$39.00	\$21.10	\$21.10	\$21.10	\$23.06	
	WHEAT		\$7.00	\$7.00	\$7.00	\$7.00	\$6.86	\$6.86	\$7.55	\$6.97	
FUEL, OIL, GREASE	CORN	-117	\$7.00	\$7.00	\$7.00	\$9.00	\$10.58	\$9.61	\$48.87	\$8.64	
		-150	\$7.00	\$7.00	\$7.00	\$9.00	\$10.58	\$9.61	\$48.87	\$8.64	
		-181	\$7.00	\$7.00	\$7.00	\$9.00	\$10.58	\$9.61	\$48.87	\$8.64	
	SOYBEANS	-36	\$5.00	\$5.00	\$5.00	\$7.00	\$7.67	\$6.97	\$43.63	\$6.33	
		-46	\$5.00	\$5.00	\$5.00	\$7.00	\$7.67	\$6.97	\$43.63	\$6.33	
		-56	\$5.00	\$5.00	\$5.00	\$7.00	\$7.67	\$6.97	\$43.63	\$6.33	
	WHEAT	-52	\$5.00	\$5.00	\$5.00	\$6.00	\$8.20	\$7.46	\$44.54	\$6.33	
		-67	\$5.00	\$5.00	\$5.00	\$6.00	\$8.20	\$7.46	\$44.54	\$6.33	
		-82	\$5.00	\$5.00	\$5.00	\$6.00	\$8.20	\$7.46	\$44.54	\$6.33	
	HAY	-2.50	\$6.00	\$7.00	\$7.00	\$11.00	\$12.61	\$11.46	\$47.47	\$9.81	
		-3.75	\$6.00	\$7.00	\$7.00	\$11.00	\$12.61	\$11.46	\$47.47	\$9.81	
		-5.00	\$6.00	\$7.00	\$7.00	\$11.00	\$12.61	\$11.46	\$47.47	\$9.81	
	REPAIRS	CORN	-117	\$14.00	\$40.00	\$10.00	\$12.00	\$10.72	\$10.66	\$45.23	\$11.48
			-150	\$14.00	\$40.00	\$10.00	\$12.00	\$10.72	\$10.66	\$45.23	\$11.48
			-181	\$14.00	\$40.00	\$10.00	\$12.00	\$10.72	\$10.66	\$45.23	\$11.48
SOYBEANS		-36	\$12.00	\$13.00	\$13.00	\$11.00	\$7.80	\$7.80	\$10.59	\$10.88	
		-46	\$12.00	\$13.00	\$13.00	\$11.00	\$7.80	\$7.80	\$10.59	\$10.88	
		-56	\$12.00	\$13.00	\$13.00	\$11.00	\$7.80	\$7.80	\$10.59	\$10.88	
WHEAT		-52	\$12.00	\$11.00	\$11.00	\$11.00	\$8.74	\$8.71	\$27.47	\$10.74	
		-67	\$12.00	\$11.00	\$11.00	\$11.00	\$8.74	\$8.71	\$27.47	\$10.74	
		-82	\$12.00	\$11.00	\$11.00	\$11.00	\$8.74	\$8.71	\$27.47	\$10.74	
HAY		-2.50	\$20.00	\$13.00	\$13.00	\$7.00	\$16.13	\$16.13	\$18.30	\$15.31	
		-3.75	\$20.00	\$13.00	\$13.00	\$7.00	\$16.13	\$16.13	\$18.30	\$15.31	
		-5.00	\$20.00	\$13.00	\$13.00	\$7.00	\$16.13	\$16.13	\$18.30	\$15.31	

## Non-Land Production Costs

### Determination of the 5 Year Average for Use in Computing Crop Budgets

Tax year 2008

Source: Ohio Crop Enterprise Budgets

ITEM		UNITS	2002	2003	2004	2005	2006	2007	2008	5 yr. Avg.	
MISCELLANEOUS	CORN	-117	\$12.00	\$12.00	\$12.00	\$6.00	\$6.00	\$6.00	\$6.00	\$8.40	
		-150	\$13.00	\$13.00	\$13.00	\$7.00	\$7.00	\$7.00	\$7.00	\$9.40	
		-181	\$14.00	\$14.00	\$14.00	\$8.00	\$8.00	\$8.00	\$8.00	\$10.40	
	SOYBEANS	-36	\$12.00	\$12.00	\$12.00	\$7.00	\$7.00	\$7.00	\$7.00	\$9.00	
		-46	\$13.00	\$13.00	\$13.00	\$7.00	\$7.00	\$7.00	\$7.00	\$9.40	
		-56	\$14.00	\$14.00	\$14.00	\$7.00	\$7.00	\$7.00	\$7.00	\$9.80	
	WHEAT	-52	\$12.00	\$12.00	\$12.00	\$6.00	\$6.00	\$6.00	\$6.00	\$8.40	
		-67	\$13.00	\$13.00	\$13.00	\$6.00	\$6.00	\$6.00	\$6.00	\$8.80	
		-82	\$14.00	\$14.00	\$14.00	\$6.00	\$6.00	\$6.00	\$6.00	\$9.20	
	HAY	-2.50	\$14.00	\$14.00	\$14.00	\$4.00	\$4.00	\$4.00	\$4.00	\$8.00	
		-3.75	\$15.00	\$15.00	\$15.00	\$5.00	\$5.00	\$5.00	\$5.00	\$9.00	
		-5.00	\$16.00	\$16.00	\$16.00	\$6.00	\$6.00	\$6.00	\$6.00	\$10.00	
	MISCELLANEOUS: DRYING COST-(FUEL & ELECTRIC)	CORN		\$0.18	\$0.18	\$0.18	\$0.13	\$0.15	\$0.16	\$0.11	\$0.16
	TRUCKING COST: FUEL ONLY	CORN		\$0.03	\$0.04	\$0.04	\$0.04	\$0.06	\$0.06	\$0.09	\$0.05
		SOYBEANS		\$0.03	\$0.03	\$0.03	\$0.04	\$0.06	\$0.06	\$0.09	\$0.04
WHEAT			\$0.03	\$0.03	\$0.03	\$0.03	\$0.06	\$0.06	\$0.09	\$0.04	
INTEREST: ON SUBTOTALLED COST			9.00%	9.00%	9.00%	6.50%	8.00%	8.50%	9.00%	8.70%	
LABOR CHARGE	CORN		\$28.80	\$32.40	\$32.40	\$36.00	\$36.00	\$36.00	\$48.60	\$34.56	
	SOYBEANS		\$20.80	\$23.40	\$23.40	\$20.00	\$20.00	\$20.00	\$27.00	\$21.52	
	WHEAT		\$16.00	\$18.00	\$18.00	\$20.00	\$20.00	\$20.00	\$27.00	\$19.20	
	HAY		\$40.00	\$45.00	\$45.00	\$30.00	\$30.00	\$30.00	\$40.50	\$37.10	
MACHINERY & EQUIPMENT CHARGE	CORN		\$56.07	\$59.00	\$59.00	\$55.00	\$52.85	\$54.35	\$65.07	\$56.68	
	SOYBEANS		\$52.26	\$54.00	\$54.00	\$47.00	\$44.60	\$46.56	\$53.86	\$50.74	
	WHEAT		\$51.36	\$52.00	\$52.00	\$48.00	\$48.51	\$50.01	\$56.74	\$50.78	
	HAY		\$30.00	\$31.00	\$31.00	\$32.00	\$29.31	\$29.31	\$22.83	\$30.12	

2009 CORN BUDGET conservation tillage								
CORN				INPUTS		5 YR. AVG. COST	5 YR. AVERAGE COST	
ITEM		UNITS	BASE 117 BUSHEL	@ ADD. 33 BUSHEL			BASE 117 BUSHEL	@ ADD. BUSHEL
SEED:		KERNELS (1000's)	28	0.13		\$1.12	\$31.36	\$0.15
FERTILIZER:								
	N*	LB.	128	18		\$0.27	\$34.56	\$0.15
	P2O5	LB.	43.3	12.2		\$0.28	\$12.12	\$0.10
	K2O	LB.	31.6	8.9		\$0.17	\$5.37	\$0.05
	LIME	TON	0.25	0		\$18.60	\$4.65	\$0.00
CHEMICALS:						\$23.37	\$23.37	\$0.00
FUEL, OIL, GREASE						\$8.64	\$8.64	\$0.00
REPAIRS:						\$11.48	\$11.48	\$0.00
MISCELLANEOUS:						\$8.40	\$8.40	\$0.03
DRYING: FUEL & ELECTRIC ONLY				\$0.16		\$18.72	\$18.72	\$0.16
TRUCKING: FUEL ONLY						\$0.05	\$5.85	\$0.05
		SUBTOTAL					\$164.53	\$0.68
INTEREST: ON SUBTOTALLED COST			8.7%/12 X 7 MOS	0.05	int x subtotal		\$8.35	\$0.03
LABOR CHARGE:						\$34.56	\$34.56	\$0.00
MACHINERY & EQUIPMENT CHARGE:						\$56.68	\$56.68	\$0.00
		TOTALS					\$264.12	\$0.72

2009 SOYBEAN BUDGET NO TILLAGE PRACTICES							
ITEM	UNITS	INPUTS		5 YR. AVG. COST	5 YR. AVERAGE COST		
		BASE 36	@ ADD. 10		BASE 36	@ ADD.	
		<u>BUSHEL</u>	<u>BUSHEL</u>		<u>BUSHEL</u>	<u>BUSHEL</u>	
SEED:	seeds (1000s)	180.0	0	\$0.15	\$27.00	\$0.00	
FERTILIZER:							
	N LB.	0	0	\$0.27	\$0.00	\$0.00	
	P2O5 LB.	28.8	8	\$0.28	\$8.06	\$0.22	
	K2O LB.	50.4	14	\$0.17	\$8.57	\$0.24	
	LIME TON	0.25	0	\$18.60	\$4.65	\$0.00	
CHEMICALS:				\$23.06	\$23.06	\$0.00	
FUEL, OIL, GREASE				\$6.33	\$6.33	\$0.00	
REPAIRS:				\$10.88	\$10.88	\$0.00	
MISCELLANEOUS:				\$9.00	\$9.00	\$0.04	
TRUCKING: FUEL ONLY				\$0.05	\$1.80	\$0.05	
	SUBTOTAL				\$99.35	\$0.55	
		8.7%/12 X 5 MOS					
INTEREST: ON SUBTOTALLED COST		0.0363	int x subtotal		\$3.60	\$0.02	
LABOR CHARGE:				\$21.52	\$21.52	\$0.00	
MACHINERY & EQUIPMENT CHARGE:				\$50.74	\$50.74	\$0.00	
	TOTALS				\$175.21	\$0.57	

2009 WHEAT BUDGET							
Wheat							
				INPUTS	5 YR. AVG. COST	5 YR. AVERAGE COST	
ITEM	UNITS	BASE 52 BUSHELS	@ ADD. 15 BUSHEL			BASE 52 BUSHELS	@ ADD. BUSHEL
SEED:	seeds (1000s)	1,400	0		\$0.01	\$16.80	\$0.00
FERTILIZER:							
	N LB.	43.5	26.3		\$0.29	\$12.62	\$0.51
	P2O5 LB.	32.8	9.4		\$0.28	\$9.18	\$0.18
	K2O LB.	39.2	5.6		\$0.17	\$6.66	\$0.06
	LIME TON	0.25	0		\$18.60	\$4.65	\$0.00
CHEMICALS:					\$6.97	\$6.97	\$0.00
FUEL, OIL, GREASE					\$6.33	\$6.33	\$0.00
REPAIRS:					\$10.74	\$10.74	\$0.00
MISCELLANEOUS:					\$8.40	\$8.40	\$0.03
TRUCKING: FUEL ONLY					\$0.04	\$1.80	\$0.04
	SUBTOTAL					\$84.15	\$0.82
		8.7%/12 X 8 MOS					
INTEREST: ON SUBTOTALLED COST		0.0580	int x subtotal			\$4.88	\$0.05
LABOR CHARGE:					\$19.20	\$19.20	\$0.00
MACHINERY & EQUIPMENT CHARGE:					\$50.78	\$50.78	\$0.00
	TOTALS					\$159.01	\$0.86

2009 HAY BUDGET							
ITEM	UNITS	INPUTS		5 YR. AVG. COST	5 YR. AVERAGE COST		
		BASE	@ ADD.		BASE COST	@ ADD. COST	
		2.5 TON	1.25 TON				2.5 TON
SEED:	1(160.00/100)*10 5	10			\$3.20	\$0.00	
	PRORATED OVER 5 YRS.						
FERTILIZER:							
	N LB.	0	65	\$0.27	\$0.00	\$14.04	
	P2O5 LB.	25	15	\$0.28	\$7.00	\$3.36	
	K2O LB.	60	25	\$0.17	\$10.20	\$3.40	
	LIME TON	0.25	0	\$18.60	\$4.65	\$0.00	
ESTABLISHMENT:	avg \$/5 yrs.			\$19.00	\$3.80	\$0.00	
FUEL, OIL, GREASE				\$9.81	\$9.81	\$0.20	
REPAIRS:				\$15.31	\$15.31	\$0.00	
MISCELLANEOUS:				\$8.00	\$8.00	\$0.80	
	SUBTOTAL				\$61.97	\$21.80	
		8.7%/12 X 6 MOS					
INTEREST: ON SUBTOTALLED COST		0.0435	int x subtotal		\$2.70	\$0.95	
LABOR CHARGE:				\$37.10	\$37.10	\$0.00	
MACHINERY & EQUIPMENT CHARGE:				\$30.12	\$30.12	\$0.00	
	TOTALS				\$131.89	\$22.75	

1/2/2009

**RATES USED IN CAPITALIZATION RATE  
2003-2009**

<b>TAX YEAR</b>	<b>INTEREST RATE</b>	<b>EQUITY RATE</b>
2003	<del>6.40</del>	6.25
2004	7.00	6.00
2005	7.10	7.25
2006	<del>7.70</del>	9.50
2007	7.70	<del>10.25</del>
2008	6.95	9.25
2009	6.55	<del>5.25</del>
	7.06	7.65

\* interest rate is based on a 15 year adjustable multi flex loan with the rate coming from [www.e-farmcredit.com](http://www.e-farmcredit.com) / today's rates

\*\* equity rate is prime plus two per cent at [www.bankrate.com](http://www.bankrate.com) from Wall Street Journal survey

**ACTUAL CAPITALIZATION RATES USED IN CALCULATION  
2002-2008**

<b>TAX YEAR</b>	<b>CAPITALIZATION RATE</b>
2003	9.2%
2004	9.0%
2005	8.6%
2006	8.5%
2007	8.4%
2008	8.3%
2009	7.9%

<http://www.phila-ai.com/phila-ai/tools/ellwood.cfm>

# Yield Changes for Crops--2009

Ohio Agricultural Statistics Service

2007 Ohio Dept. of Agriculture Annual Report and Statistics--Table 5

<u>Year</u>	<u>Corn</u>	<u>Soybeans</u>	<u>Wheat</u>	<u>Oats</u>	<u>Hay</u>
1984	118	36.5	44	63	2.81
1985	127	41.5	62	85	3.17
1986	128	40.5	46	76	2.95
1987	120	37	58	70	3.05
1988	85	27	50	45	2.18
1989	118	31.5	51	63	2.8
1990	121	39	59	70	3.3
1991	96	36	49	60	2.42
1992	143	40	53	71	3.25
1993	110	38	52	60	2.78
1994	139	44	58	56	3.43
1995	121	38	61	69	3.23
1996	111	35	39	57	2.83
1997	134	44	63	78	3.08
1998	141	44	64	65	3.01
1999	126	36	70	70	2.42
2000	147	42	72	76	3.35
2001	138	41	67	73	2.88
2002	89	32	62	62	2.58
2003	156	38.5	68	66	2.94
2004	158	47	62	63	2.72
2005	143	45	71	60	3.03
2006	159	47	68	75	2.83
2007	150	47	63	62	2.55
1984	118	36.5	44	63	2.81
avg. 1998-2007	140.7	42.0	66.7	67.2	2.83
% change 1984 vs. 1998-2007 increase	1.192373 19.24%	1.150685 15.07%	1.515909 51.59%	1.066667 6.67%	1.007117 0.71%

\*\*for use in TY 2009 CAUV tables

## 2009 CAUV SAMPLE CALCULATION

**SOIL:** Millgrove, Silt Loam  
**SLOPE:** 0-2  
**EROSION:** Slight  
**DRAINAGE:** Very poorly  
**PROD. INDEX:** 100

	<u>CORN</u>	<u>BEANS</u>	<u>WHEAT</u>	<u>HAY</u>
<b>Current PI DAT yield</b>	144	52	64	6
<b>% increased yield</b>	1.192373	1.150685	1.515909	1.007117
<b>YIELD / ACRE</b>	172	60	97	6.0
<b>X PRICE / UNIT</b>	\$2.29	\$5.60	\$3.05	\$86.18
<b>= GROSS INCOME / ACRE</b>	\$393.88	\$336.00	\$295.85	\$517.08
<b>YIELD / ACRE</b>	172	60	97	6.0
<b>BASE YIELD</b>	117	36	52	2.5
<b>= YIELD ABOVE BASE</b>	55	24	45	3.5
<b>X ADDED UNIT COST</b>	\$0.72	\$0.57	\$0.86	\$22.75
<b>ADDED UNIT COST / ACRE</b>	\$39.60	\$13.68	\$38.70	\$79.63
<b>BASE YIELD COST</b>	\$264.12	\$175.21	\$159.01	\$131.89
<b>= TOTAL NON-LAND PROD. COST</b>	\$303.72	\$188.89	\$197.71	\$211.52
<b>NET RETURN / ACRE</b>	\$90.16	\$147.11	\$98.14	\$305.57
<b>X CROPPING PATTERN</b>	0.35	0.45	0.15	0.05
<b>= ROTATIONAL NET RETURN / ACRE</b>	\$ 31.56	\$ 66.20	\$ 14.72	\$ 15.28
<b>TOTAL ROTATIONAL NET RETURN</b>	\$ 127.75			
<b>BASE CAP RATE</b>	0.079			
<b>CAUV LAND VALUE</b>	\$1,617.15	SAY \$1,620.00		

## 2006 CAUV SAMPLE CALCULATION

**SOIL:** Millgrove, Silt Loam  
**SLOPE:** 0-2  
**EROSION:** Slight  
**DRAINAGE:** Very Poorly  
**PROD. INDEX:** 100

	<u>CORN</u>	<u>BEANS</u>	<u>WHEAT</u>	<u>HAY</u>
<b>Current PI DAT yield</b>	144	52	64	6
<b>% increased yield</b>	1.119492	1.089041	1.427273	1.033425
<b>YIELD / ACRE</b>	161	57	91	6.2
<b>X PRICE / UNIT</b>	\$1.99	\$4.84	\$2.49	\$75.54
<b>= GROSS INCOME / ACRE</b>	\$320.39	\$275.88	\$226.59	\$468.35
<b>YIELD / ACRE</b>	161	57	91	6.2
<b>BASE YIELD</b>	100	30	50	2
<b>= YIELD ABOVE BASE</b>	61	27	41	4.2
<b>X ADDED UNIT COST</b>	\$0.92	\$0.49	\$0.87	\$24.83
<b>ADDED UNIT COST / ACRE</b>	\$56.12	\$13.23	\$35.67	\$104.29
<b>BASE YIELD COST</b>	\$232.83	\$167.50	\$151.98	\$138.26
<b>= TOTAL NON-LAND PROD. COST</b>	\$288.95	\$180.73	\$187.65	\$242.55
<b>NET RETURN / ACRE</b>	\$31.44	\$95.15	\$38.94	\$225.80
<b>X CROPPING PATTERN</b>	0.35	0.45	0.15	0.05
<b>= ROTATIONAL NET RETURN / ACRE</b>	\$ 11.00	\$ 42.82	\$ 5.84	\$ 11.29
<b>TOTAL ROTATIONAL NET RETURN</b>	\$ 70.95			
<b>BASE CAP RATE</b>	0.085			
<b>X MANAGEMENT FACTOR</b>	0.95			
<b>= ADJUSTED CAPITALIZATION RATE</b>	0.08075			
<b>CAUV LAND VALUE</b>	\$ 878.67	SAY	\$ 880.00	

## 2009 CAUV SAMPLE CALCULATION

**SOIL:** Miami Silt Loam  
**SLOPE:** 2-6  
**EROSION:** Slight  
**DRAINAGE:** Well  
**PROD. INDEX:** 76

	<u>CORN</u>	<u>BEANS</u>	<u>WHEAT</u>	<u>HAY</u>
<b>PI DAT yield/acre</b>	108	38	50	4.6
<b>% increased yield</b>	1.192373	1.150685	1.515909	1.007117
<b>adjusted yield/acre</b>	129	44	76	4.6
<b>X PRICE / UNIT</b>	\$2.29	\$5.60	\$3.05	\$86.18
<b>= GROSS INCOME / ACRE</b>	\$295.41	\$246.40	\$231.80	\$396.43
<b>YIELD / ACRE</b>	129	44	76	4.6
<b>BASE YIELD</b>	117	36	52	2.5
<b>= YIELD ABOVE BASE</b>	12	8	24	2.1
<b>X ADDED UNIT COST</b>	\$0.72	\$0.57	\$0.86	\$22.75
<b>ADDED UNIT COST / ACRE</b>	\$8.64	\$4.56	\$20.64	\$47.78
<b>BASE YIELD COST</b>	\$264.12	\$175.21	\$159.01	\$131.89
<b>= TOTAL NON-LAND PROD. COST</b>	\$272.76	\$179.77	\$179.65	\$179.67
<b>NET RETURN / ACRE</b>	\$22.65	\$66.63	\$52.15	\$216.76
<b>X CROPPING PATTERN</b>	0.35	0.37	0.15	0.13
<b>= ROTATIONAL NET RETURN / ACRE</b>	\$7.93	\$24.65	\$7.82	\$28.18
<b>TOTAL ROTATIONAL NET RETURN</b>	\$68.58			
<b>BASE CAP RATE</b>	0.079			
<b>CAUV LAND VALUE</b>	\$868.13	SAY	\$ 870.00 *	

\* This soil has been manually changed to \$820.

## 2006 CAUV SAMPLE CALCULATION

**SOIL:** Miami, Silt Loam  
**SLOPE:** 2-6  
**EROSION:** slight  
**DRAINAGE:** Well  
**PROD. INDEX:** 76

	<u>CORN</u>	<u>BEANS</u>	<u>WHEAT</u>	<u>HAY</u>
<b>Current PI DAT yield</b>	108	38	50	4.6
<b>% increased yield</b>	1.119492	1.089041	1.427273	1.0334252
<b>YIELD / ACRE</b>	121	41	71	4.8
<b>X PRICE / UNIT</b>	\$1.99	\$4.84	\$2.49	\$75.54
<b>= GROSS INCOME / ACRE</b>	\$240.79	\$198.44	\$176.79	\$362.59
<b>YIELD / ACRE</b>	121	41	71	4.8
<b>BASE YIELD</b>	100	30	50	2
<b>= YIELD ABOVE BASE</b>	21	11	21	2.8
<b>X ADDED UNIT COST</b>	\$0.92	\$0.49	\$0.87	\$24.83
<b>ADDED UNIT COST / ACRE</b>	\$19.32	\$5.39	\$18.27	\$69.52
<b>BASE YIELD COST</b>	\$232.83	\$167.50	\$151.98	\$138.26
<b>= TOTAL NON-LAND PROD. COST</b>	\$252.15	\$172.89	\$170.25	\$207.78
<b>NET RETURN / ACRE</b>	(\$11.36)	\$25.55	\$6.54	\$154.81
<b>X CROPPING PATTERN</b>	0.35	0.37	0.15	0.13
<b>= ROTATIONAL NET RETURN / ACRE</b>	(\$3.98)	\$9.45	\$0.98	\$20.13
<b>TOTAL ROTATIONAL NET RETURN</b>	\$26.58			
<b>BASE CAP RATE</b>	0.085			
<b>X MANAGEMENT FACTOR</b>	1			
<b>= ADJUSTED CAPITALIZATION RATE</b>	0.085			
<b>CAUV LAND VALUE</b>	\$312.75	SAY	\$310.00	

## CAUV Summary Values

6/19/2009  
TY 2006 final

productivity index	no. of units	net return/acre			cropland value/acre		
		low	high	avg.	low	high	avg.
40-49	603	0	33	4	100	320	108
50-59	740	0	69	13	100	420	133
60-69	1094	0	69	9	100	340	125
70-79	803	0	42	20	100	490	241
80-89	200	10	57	37	130	710	465
90-99	36	44	72	54	540	890	675
100+	6	71	71	71	880	880	880
<b>all regions</b>	<b>3482</b>	<b>0</b>	<b>72</b>	<b>14</b>	<b>100</b>	<b>890</b>	<b>177</b>

TY 2009 final

productivity index	no. of units	net return/acre			cropland value/acre		
		low	high	avg.	low	high	avg.
40-49	600	0	78	33	170	200	176
50-59	749	0	98	53	170	330	200
60-69	1117	0	93	42	180	930	435
70-79	798	19	89	60	240	1100	746
80-89	206	57	109	84	720	1390	1059
90-99	35	97	127	108	1230	1610	1368
100+	6	128	128	128	1620	1620	1620
<b>all regions</b>	<b>3511</b>	<b>0</b>	<b>128</b>	<b>50</b>	<b>170</b>	<b>1620</b>	<b>459</b>

## CAUV Summary Values

6/19/2009

TY 2008 final

productivity index	no. of units	net return/acre			cropland value/acre		
		low	high	avg.	low	high	avg.
40-49	600	0	48	15	100	100	100
50-59	749	0	87	29	100	100	100
60-69	1117	0	87	21	100	490	188
70-79	798		61	36	100	710	431
80-89	206	29	78	56	370	990	708
90-99	35	67	95	76	850	1200	973
100+	6	95	95	95	1200	1200	1200
<b>all regions</b>	<b>3511</b>	<b>0</b>	<b>95</b>	<b>28</b>	<b>100</b>	<b>1200</b>	<b>249</b>

TY 2009 final

productivity index	no. of units	net return/acre			cropland value/acre		
		low	high	avg.	low	high	avg.
40-49	600	0	78	33	170	200	176
50-59	749	0	98	53	170	330	200
60-69	1117	0	93	42	180	930	435
70-79	798	19	89	60	240	1100	746
80-89	206	57	109	84	720	1390	1059
90-99	35	97	127	108	1230	1610	1368
100+	6	128	128	128	1620	1620	1620
<b>all regions</b>	<b>3511</b>	<b>0</b>	<b>128</b>	<b>50</b>	<b>170</b>	<b>1620</b>	<b>459</b>

## Average CAUV Values By Year

Productivity Index	Average CAUV Values By Year																		
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0-49	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	108	100	100	176
50-59	101	100	100	100	101	100	100	111	114	107	104	102	101	114	106	134	100	100	200
60-69	106	107	153	174	150	114	163	230	233	200	181	125	113	104	101	125	123	188	435
70-79	209	235	363	383	320	257	373	448	452	417	394	285	244	157	124	241	283	431	746
80-89	412	460	629	637	539	487	632	694	699	666	640	516	467	342	293	465	521	708	1059
90-99	614	696	900	896	740	689	850	894	908	869	842	713	663	533	492	675	747	973	1368
100+	690	790	1000	1010	870	820	990	1040	1060	1030	1000	870	820	690	650	880	970	1200	1620
<b>Totals</b>	146	154	206	216	189	160	209	258	262	242	231	180	163	135	123	177	181	249	459
<b>No. of Soils</b>	2719	2854	2894	3023	3050	3050	3083	3246	3281	3371	3279	3307	3313	3313	3358	3482	3510	3511	3511

## Average CAUV Values By Reappraisal/Update Year

Productivity Index	Average CAUV Values By Reappraisal/Update Year					
	1994	1997	2000	2003	2006	2009
0-49	100	100	100	100	108	176
50-59	100	100	107	101	134	200
60-69	174	163	200	113	125	435
70-79	383	373	417	244	241	746
80-89	637	632	666	467	465	1059
90-99	896	850	869	663	675	1368
100+	1010	990	1030	820	880	1620
<b>Totals</b>	216	209	242	163	177	459
<b>No. of Soils</b>	3023	3083	3371	3313	3482	3511

## Comparison of 2009 Inputs with 2006 and 2008 Inputs for CAUV

### Crop Prices

	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>Change from 2006</u>	<u>Change from 2008</u>
Corn	\$1.99	\$1.96	\$2.02	\$2.29	\$0.30	\$0.27
Soybeans	\$4.84	\$4.89	\$5.19	\$5.60	\$0.76	\$0.41
Wheat	\$2.49	\$2.64	\$2.89	\$3.05	\$0.56	\$0.16
Hay(mixed)	\$75.54	\$76.66	\$79.80	\$86.18	\$10.64	\$6.38
Hay(grass)	\$59.51	\$61.95	\$64.77	\$70.69	\$11.18	\$5.92

### Non-land Production Costs

<u>Base Cost</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>Change from 2006</u>	<u>Change from 2008</u>
Corn	\$232.83	\$235.70	\$242.39	\$264.12	\$31.29	\$21.73
Soybeans	\$167.50	\$168.14	\$174.44	\$175.21	\$7.71	\$0.77
Wheat	\$151.98	\$153.67	\$156.68	\$159.01	\$7.03	\$2.33
Hay	\$138.26	\$134.50	\$133.80	\$131.89	(\$6.37)	(\$1.91)

### Additional Unit Cost

	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>Change from 2006</u>	<u>Change from 2008</u>
Corn	\$0.92	\$0.91	\$0.90	\$0.72	(\$0.20)	(\$0.18)
Soybeans	\$0.49	\$0.49	\$0.50	\$0.57	\$0.08	\$0.07
Wheat	\$0.87	\$0.81	\$0.84	\$0.86	(\$0.01)	\$0.02
Hay	\$24.83	\$23.98	\$24.23	\$22.75	(\$2.08)	(\$1.48)

### Capitalization Rate

	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>Change from 2006</u>	<u>Change from 2008</u>
Mortgage/Equity Ratio	60/40	60/40	60/40	60/40		
Years	15	15	15	15		
Interest Rate	7.73	7.49	7.29	7.06		
Equity Rate	8.3	8.35	8.15	7.65		
Tax Additur	1.4	1.4	1.4	1.4		
Capitalization Rate	8.5	8.4	8.3	7.9	(0.60)	(\$0.40)