Ohio | Department of Taxation

Tax Equalization Division
P.O. Box 530
Columbus, Ohio 43216-0530
(614) 466-5744
tax.ohio.gov

August 14, 2017
FINAL VALUES - 2017

2017 CURRENT AGRICULTURAL USE VALUE OF LAND TABLES EXPLANATION OF THE CALCULATION OF VALUES FOR TAX YEAR 2017

Changes to Current Agricultural Use Value Program

Formula Changes

Am. Sub. H.B. 49, of the 132nd General Assembly, prescribes the factors that must be considered in computing the Current Agricultural Use Value (CAUV) of land effective for tax year 2017. The lower values are phased-in using a two-step process over each county's next two revaluations, beginning with the counties undergoing reappraisal or update in 2017. The final values are the sum of the new formula values for 2017 and half the positive difference between the new formula values and the values issued for 2016 for each soil type, pursuant to R.C. 5715.01(A)(3).

Conservation Land

Under Am. Sub. H.B. 49 of the 132nd General Assembly, the lowest CAUV value of all soil types is applied to farmland used for conservation practices or enrolled in a federal land retirement or conservation program under an agreement with an agency of the federal government (R.C. 5713.31). The land must be enrolled as of the first day of January of the applicable year as detailed on the initial or renewal application. If the farmland ceases to be used for those purposes sooner than 36 months after the initial certification, the County Auditor must recoup an amount equal to the extra tax savings for the most recent three years that the land was valued at the lowest-valued soil type (R.C. 5713.34).

Under continuing law, farmland in a federal land retirement or conservation program is eligible for CAUV. Additionally, land used for conservation practices is eligible if it comprises 25% or less of the landowner's total CAUV land. As defined by R.C. 5713.30(E), conservation practices are farm management practices used to abate soil erosion as required in the management of the farming operation, including the installation, construction, development, planting, or use of grass waterways, terraces, diversions, filter strips, field borders, windbreaks, riparian buffers, wetlands, ponds, and cover crops for that purposes.

The valuation changes become effective September 29, 2017. The Department of Taxation will issue separate instructions to implement the conservation changes for 2017 and subsequent tax years.

Explanation of the Calculation

The annual current agricultural use values of land are calculated by the capitalization of 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 3,500 map units, which are the soils with slopes of 25 percent or less. The information used for a capitalized net income approach is as follows:

YIELD INFORMATION
CROPPING PATTERN
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 major field crops (corn, soybeans and wheat) were last published in 1984. In order to reflect more accurate yields, those yields of record have been updated annually since 2006. The yields are updated by a factor based on ten years of statewide yield information published by the Ohio Department of Agriculture. For 2017, yield data from calendar years 2007-2016 were averaged and divided by the 1984 yield for each crop (Exhibit A, page 6). This factor is applied to the 1984 crop yield of record for each soil. The table below shows the average yields used to develop the factor for each of the crops.

		TY 2014	TY 2015	TY 2016	TY 2017
Crop	**1984 Base**	**2004-2013**	**2005-2014**	**2006-2015**	**2007-2016**
Corn	118.0 bu	151.9 bu	155.2 bu	156.2 bu	156.2 bu
Soybeans	36.5 bu	45.0 bu	46.7 bu	47.2 bu	47.9 bu
Wheat	44.0 bu	66.0 bu	67.1 bu	66.7 bu	67.9 bu

B. CROPPING PATTERNS

The cropping pattern for each map unit is assigned a rotation based on the most recent five-year average of crop acres harvested in Ohio: 40% corn, 54% beans, and 6% wheat. This rotation is based on data from 2012-2016 and closely reflects current agricultural production in Ohio. The acres harvested in each year are shown in Exhibit B (page 7).

There are two exceptions as follows:

1.) Soil map units with a productivity index of 55 or less are assumed to be most profitably used as pasture; in 2017, a minimum value of $350 is used for these soils. In 2012, the minimum value was increased from $300 to $350 per acre.

2.) A pattern of 50% corn and 50% soybeans is used for organic soils.

C. CROP PRICES

The crop prices used for the field crops are five-year weighted average prices. Crop price data is collected for seven years with the highest and lowest prices eliminated, and the average calculated using the remaining five years' data. The prices are weighted based on the statewide production for each year. For this calculation, the seven-year period is 2010 through 2016. The annual production and price per unit for each of these crops for the 2010 through 2016 period are shown in Exhibit C (page 8).

The table shows average weighted prices for this period as well as prices for the three previous years. Each weighted price is reduced by 5% to allow for management.

		TY 2014	TY 2015	TY 2016	TY 2017
Crop	**Unit**	**2006-2012**	**2008-2014**	**2009-2015**	**2010-2016**
Corn	Bushel	$4.48	$4.55	$4.49	**$4.51**
Soybeans	Bushel	$10.13	$11.09	$10.91	**$10.83**
Wheat	Bushel	$5.16	$5.67	$5.53	**$5.53**

D. NON-LAND PRODUCTION COSTS

Data on crop production costs are used to estimate average non-land production costs. The data are taken from the Ohio Crop Enterprise Budgets prepared by The Ohio State University Department of Agricultural, Environmental, and Development Economics for 2011-2017, inclusive. Again, data are collected for the seven-year period and the highest and lowest costs for each category are eliminated from the array. Five-year average costs per unit of specific non-land production cost items are computed from the remaining data as shown in Exhibit D (pages 9-10).

The budgets are 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 (Exhibits D-1 through Exhibit D-3, pages 11-13). The five-year average non-land production costs for tax year 2017 are summarized in the following table and compared to the costs used for tax years 2014 and 2016:

NON-LAND PRODUCTION COSTS				
Crop Base Cost	**Base Yld/2017**	**TY 2014**	**TY 2016**	**TY 2017**
Corn	127 bu	$437.85	$524.47	$538.78
Soybeans	37 bu	$275.21	$336.33	$347.10
Wheat	56 bu	$255.48	$323.52	$336.21
Additional Cost per Unit				
Corn	1 bu	$ 1.18	$ 1.38	$ 1.45
Soybeans	1 bu	$ 1.27	$ 1.07	$ 1.05
Wheat	1 bu	$ 1.80	$ 1.64	$ 1.62

E. CAPITALIZATION RATE

Five-year averaging is used to derive the Farm Credit Service interest rate of 5.55% assuming an 80% loan for a 25-year term, payable annually (Exhibit E, page 14). The interest rate of 7.73% for the 20 percent equity portion is based on the 25-year average of the "total rate of return on farm equity" published by USDA (1991-2015, inclusive). (R.C. 5715.01)

The capitalization rate for typical Ohio farmland is computed by the mortgage-equity method. The statewide average effective tax rate after application of the reduction factors levied on agricultural property is 49.77 mills for tax year 2016 (R.C. 319.301). The 9.4 percent non-business credit rollback authorized by R.C. 319.302 reduces this rate further to 45.11 mills. As a percent of market value the effective tax rate to be used in this year's capitalization formula is 1.6%, (.35 x 45.11)/1000.

80% loan x annual debt service of 0.074914*		0.0599
20% equity x equity yield rate of .0773	+	0.0155
Subtotal		0.0754
Less: equity buildup for 25 years		
% loan x 100% mortgage paid off x sinking fund factor**		
(0.80) (1.00) (0.014228)	−	(0.0114)
Subtotal		0.0640
Tax Additur Adjustment	+	0.0160
Capitalization Rate		0.0800 or **8.0%**

*Mortgage constant assumes 25-year loan, 5.55% interest rate.
**Sinking fund factor assumes 25-year term, 7.73% equity rate.

The capitalization rate, including R.E. taxes, is **8.0%** for typical Ohio farmland.

F. CROPLAND VALUES

The current agricultural use cropland value equals the rotational net return per acre of the soil map unit divided by the capitalization rate. However, the minimum value for cropland is $350 per acre for soils with 25 percent slope or less regardless of this calculated amount. In tax year 2012, the minimum value was increased from $300 to $350 per acre.

G. WOODLAND VALUE

1. The woodland value, with slopes of 25% or less, equals the cropland value less the costs to convert the woodland to cropland. The conversion costs used in the formula are as follows:
   a. Clearing - $1,000 per acre for all soils

   b. Drainage
      a.) Excessively drained, well drained, moderately well drained, (E, W, MW) - No Conversion Cost

      b.) Somewhat poorly drained, poorly drained, very poorly drained, saturated (SWP, P, VP) - $800 for Tile Drainage

      c.) For the following soil series, a $400 adjustment for surface drainage was used: Blanchester, Bono, Clermont, Condit, Conneaut, Darien, Fries, Ginat, Ilion, Latty, Lorain, McGuffey, Mill, Miner, Montgomery, Muskego, Paulding, Peoga, Piopolis, Purdy, Roselms, Sheffield, Toledo, Trumbull, Wabash, Wabasha, Warners, and Wayland.

2. The minimum value for woodland with slopes of 25% or less is $230.

H. PASTURELAND VALUE

Where soil map units listed in these tables or comparable soils are used for permanent pasture, the land should be valued as cropland.

I. MINIMUM VALUES

Slopes of 25% or less:	Cropland & pasture	$350
	Woodland	$230
Slopes greater than 25%:	Woodland & pasture	$230

Exhibit A - Average Crop Yields by Year in Ohio

USDA, National Agricultural Statistics Service
Crop Production 2016 Summary, January 2017

Year	Corn	Soybeans	Wheat
1984	118	36.5	44
1985	127	41.5	62
1986	128	40.5	46
1987	120	37	58
1988	85	27	50
1989	118	31.5	51
1990	121	39	59
1991	96	36	49
1992	143	40	53
1993	110	38	52
1994	139	44	58
1995	121	38	61
1996	111	35	39
1997	134	44	63
1998	141	44	64
1999	126	36	70
2000	147	42	72
2001	138	41	67
2002	89	32	62
2003	156	38.5	68
2004	158	47	62
2005	143	45	71
2006	159	47	68
2007	150	47	61
2008	135	36	68
2009	174	49	72
2010	163	48	61
2011	158	47.5	58
2012	120	45	68
2013	174	49.5	70
2014	176	52.5	74
2015	153	50	67
2016	159	54.5	80
Average 2007-2016	156.2	47.9	67.9
1984 Base	118	36.5	44
Average/1984 Base	1.323729	1.312329	1.543182
% increase	32.37%	31.23%	54.32%

1/12/2017

USDA/National Agricultural Statistics Service

Exhibit B - Acres Harvested, 2012-2016
TY 2017 Crop Rotation

Year	Corn	% of Total	Soybeans	% of Total	Wheat	% of Total	Corn, Beans & Wheat Totals
2012	3,650,000	**42.0%**	4,590,000	**52.8%**	450,000	**5.2%**	8,690,000
2013	3,730,000	**42.1%**	4,490,000	**50.7%**	640,000	**7.2%**	8,860,000
2014	3,470,000	**39.9%**	4,690,000	**53.9%**	545,000	**6.3%**	8,705,000
2015	3,260,000	**38.4%**	4,740,000	**55.9%**	480,000	**5.7%**	8,480,000
2016	3,300,000	**37.9%**	4,840,000	**55.6%**	560,000	**6.4%**	8,700,000
Five Year Average	3,482,000	**40%**	4,670,000	**54%**	535,000	**6%**	8,687,000

USDA, National Agricultural Statistics Service
Crop Production, 2016 Summary, January 2017
1/12/2017

Exhibit C, FIVE YEAR AVERAGE CROP PRICES, TAX YEAR 2017

USDA, National Agricultural Statistics Service
Crop Values, 2016 Summary, February 2017
Crop Production, 2016 Summary, January 2017

	Year	Production (1,000 bu)		Price		Value (1,000 dollars)
CORN	2010	533,010	$	5.45		2,904,905
	2011	508,760	$	6.44		3,276,414
	2012	438,000	$	~~7.09~~		3,105,420
	2013	649,020	$	4.41		2,862,178
	2014	610,720	$	3.78		2,308,522
	2015	498,780	$	3.89		1,940,254
	2016	524,700	$	~~3.60~~		1,888,920
Totals		2,800,290			$	13,292,273
Weighted Avg. Price			$	4.75		
After Management Allowance of 5%			**$**	**4.51**		
SOYBEANS	2010	220,320	$	11.50		2,533,680
	2011	217,920	$	13.00		2,832,960
	2012	206,550	$	~~14.60~~		3,015,630
	2013	222,255	$	13.00		2,889,315
	2014	246,225	$	10.30		2,536,118
	2015	237,000	$	~~9.16~~		2,170,920
	2016	263,780	$	9.65		2,545,477
Totals		1,170,500			$	13,337,550
Weighted Avg. Price			$	11.39		
After Management Allowance of 5%			**$**	**10.83**		
WHEAT	2010	45,750	$	5.21		238,358
	2011	49,300	$	6.73		331,789
	2012	30,600	$	~~7.94~~		242,964
	2013	44,800	$	6.54		292,992
	2014	40,330	$	5.60		225,848
	2015	32,160	$	4.57		146,971
	2016	44,800	$	~~4.20~~		188,160
Totals		212,340			$	1,235,958
Weighted Avg. Price			$	5.82		
After Management Allowance of 5%			**$**	**5.53**		

Exhibit D, Production Costs, Tax Year 2017
Determination of Five Year Average Costs for the Projected Crop Budgets

ITEM		Units	2011	2012	2013	2014	2015	2016	2017	5 yr. Avg.
VARIABLE COSTS										
Seed	CORN	1000k	~~$2.88~~	$3.13	$3.28	~~$3.44~~	$3.44	$3.44	$3.44	$3.35
	SOYBEANS	1000s	~~$0.33~~	$0.36	$0.41	$0.41	~~$0.43~~	$0.43	$0.37	$0.40
	WHEAT	1000s	~~$0.02~~	~~$0.03~~	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03
Fertilizer	N Corn		$0.50	$0.53	~~$0.56~~	$0.46	$0.46	$0.37	~~$0.34~~	$0.46
	N Wheat		$0.63	~~$0.71~~	$0.71	$0.64	$0.57	$0.52	~~$0.36~~	$0.61
	P2O5, Corn/Soybeans		~~$0.70~~	$0.66	$0.63	$0.60	$0.57	$0.46	~~$0.44~~	$0.58
	P2O5 Wheat		~~$0.70~~	$0.66	$0.63	$0.43	$0.53	$0.53	~~$0.43~~	$0.56
	K2O, Corn/Soybeans		$0.50	~~$0.53~~	$0.48	$0.38	$0.40	$0.28	~~$0.26~~	$0.41
	K2O Wheat		$0.50	~~$0.53~~	$0.48	$0.35	$0.34	$0.33	~~$0.24~~	$0.40
	LIME		~~$25.00~~	~~$25.00~~	$25.00	$25.00	$25.00	$25.00	$25.00	$25.00
Chemicals	CORN		~~$35.00~~	$44.28	$50.98	$55.93	$56.08	$56.08	~~$60.42~~	$52.67
	SOYBEANS		~~$30.00~~	$33.55	$31.40	$32.92	$33.84	$33.84	~~$45.70~~	$33.11
	WHEAT		$13.00	~~$21.34~~	$13.00	$13.00	$13.00	~~$9.50~~	$9.50	$12.30
Fuel, Oil, Grease	CORN	131	$19.77	~~$22.59~~	$19.33	$20.14	$13.52	~~$10.07~~	$12.66	$17.08
		164	$19.77	~~$22.59~~	$19.33	$20.14	$13.52	~~$10.07~~	$12.66	$17.08
		197	$19.77	~~$22.59~~	$19.33	$20.14	$13.52	~~$10.07~~	$12.66	$17.08
	SOYBEANS	40	$12.27	~~$14.02~~	$12.27	$11.42	$7.67	~~$5.71~~	$7.18	$10.16
		50	$12.27	~~$14.02~~	$12.27	$11.42	$7.67	~~$5.71~~	$7.18	$10.16
		60	$12.27	~~$14.02~~	$12.27	$11.42	$7.67	~~$5.71~~	$7.18	$10.16
	WHEAT	58	$10.37	~~$16.64~~	$16.64	$15.76	$14.63	$10.13	~~$9.90~~	$13.51
		73	$10.37	~~$16.64~~	$16.64	$15.76	$14.63	$10.13	~~$9.90~~	$13.51
		88	$10.37	~~$16.64~~	$16.64	$15.76	$14.63	$10.13	~~$9.90~~	$13.51
Repairs	CORN	131	~~$21.18~~	$21.18	$22.66	~~$26.78~~	$26.78	$26.78	$26.78	$24.84
		164	~~$21.18~~	$21.18	$22.66	~~$26.78~~	$26.78	$26.78	$26.78	$24.84
		197	~~$21.18~~	$21.18	$22.66	~~$26.78~~	$26.78	$26.78	$26.78	$24.84
	SOYBEANS	40	~~$14.47~~	$14.47	$14.47	~~$20.61~~	$20.61	$20.61	$20.61	$18.15
		50	~~$14.47~~	$14.47	$14.47	~~$20.61~~	$20.61	$20.61	$20.61	$18.15
		60	~~$14.47~~	$14.47	$14.47	~~$20.61~~	$20.61	$20.61	$20.61	$18.15
	WHEAT	58	~~$10.85~~	$14.39	$14.39	~~$20.32~~	$20.32	$20.32	$20.32	$17.95
		73	~~$10.85~~	$14.39	$14.39	~~$20.32~~	$20.32	$20.32	$20.32	$17.95
		88	~~$10.85~~	$14.39	$14.39	~~$20.32~~	$20.32	$20.32	$20.32	$17.95
Crop Insurance	CORN	131	$19.50	$25.00	~~$29.35~~	$20.00	$16.30	$15.00	~~$13.00~~	$19.16
		164	$19.00	$25.00	~~$29.35~~	$21.00	$17.00	$16.00	~~$14.00~~	$19.60
		197	$20.00	$24.00	~~$29.35~~	$21.00	$17.80	~~$15.00~~	$16.00	$19.76
	SOYBEANS	40	~~$8.00~~	$16.00	~~$24.00~~	$14.00	$9.50	$9.00	$12.00	$12.10
		50	~~$8.00~~	$19.00	~~$24.00~~	$15.00	$8.50	$8.50	$12.00	$12.60
		60	~~$8.00~~	$19.00	~~$24.00~~	$15.00	$10.00	$8.50	$13.00	$13.10
	WHEAT	58	~~$5.50~~	~~$14.00~~	$14.00	$14.00	$14.00	$10.00	$10.00	$12.40
		73	~~$5.50~~	~~$14.00~~	$14.00	$14.00	$14.00	$10.00	$10.00	$12.40
		88	~~$6.00~~	~~$14.00~~	$14.00	$14.00	$14.00	$10.00	$10.00	$12.40

Exhibit D, Production Costs, Tax Year 2017

ITEM		Units	2011	2012	2013	2014	2015	2016	2017	5 yr. Avg.
Variable Miscellaneous	CORN	131	$8.00	$8.00	~~$12.00~~	$12.00	~~$5.00~~	$5.00	$5.00	$7.60
		164	$9.00	$9.00	~~$12.00~~	$12.00	~~$5.00~~	$5.00	$5.00	$8.00
		197	$10.00	$10.00	~~$12.00~~	$12.00	$12.00	~~$5.00~~	$5.00	$9.80
	SOYBEANS	40	$9.00	$9.00	~~$10.00~~	$10.00	$4.50	~~$3.50~~	$3.50	$7.20
		50	$9.00	$9.00	~~$10.00~~	$10.00	$4.50	~~$3.50~~	$3.50	$7.20
		60	$9.00	$9.00	~~$10.00~~	$10.00	$4.50	~~$3.50~~	$3.50	$7.20
	WHEAT	58	~~$6.00~~	$6.00	$6.00	$6.00	$6.00	~~$1.50~~	$3.20	$5.44
		73	~~$6.00~~	$6.00	$6.00	$6.00	$6.00	~~$1.50~~	$3.20	$5.44
		88	~~$6.00~~	$6.00	$6.00	$6.00	$6.00	~~$1.50~~	$3.20	$5.44
Drying: Fuel & Electric	CORN		~~$0.11~~	$0.11	~~$0.21~~	$0.21	$0.16	$0.11	$0.11	$0.14
Trucking: Fuel Only	CORN		$0.02	~~$0.03~~	$0.02	$0.02	$0.02	~~$0.01~~	$0.02	$0.02
	SOYBEANS		$0.02	~~$0.03~~	$0.02	$0.02	$0.02	~~$0.01~~	$0.02	$0.02
	WHEAT		~~$0.02~~	~~$0.02~~	$0.02	$0.02	$0.02	$0.02	$0.02	$0.02
Interest - variable costs			~~6.00%~~	6.00%	~~4.00%~~	4.00%	5.00%	4.50%	5.00%	4.90%
FIXED COSTS										
Labor Charge	CORN		~~$40.50~~	$40.50	~~$45.00~~	$45.00	$45.00	$45.00	$45.00	$44.10
	SOYBEANS		~~$27.00~~	$27.00	~~$30.00~~	$30.00	$30.00	$30.00	$30.00	$29.40
	WHEAT		~~$27.00~~	$27.00	~~$22.50~~	$22.50	$22.50	$22.50	$22.50	$23.40
Machinery & Equipment	CORN		~~$92.09~~	$107.46	$115.92	$123.57	~~$130.45~~	$130.45	$130.45	$121.57
	SOYBEANS		~~$71.83~~	$85.10	$85.10	~~$107.89~~	$107.89	$107.89	$107.89	$98.77
	WHEAT		~~$68.61~~	$99.08	$99.08	~~$125.86~~	$125.86	$125.86	$125.86	$115.15
Fixed Miscellaneous*	CORN	131	$0.00	$0.00	$0.00	$0.00	$24.00	$24.00	$22.00	$23.33
		164	$0.00	$0.00	$0.00	$0.00	$24.00	$24.00	$22.00	$23.33
		197	$0.00	$0.00	$0.00	$0.00	$24.00	$24.00	$22.00	$23.33
	SOYBEANS	40	$0.00	$0.00	$0.00	$0.00	$16.50	$15.60	$14.50	$15.53
		50	$0.00	$0.00	$0.00	$0.00	$16.50	$15.60	$14.50	$15.53
		60	$0.00	$0.00	$0.00	$0.00	$16.50	$15.60	$14.50	$15.53
	WHEAT	58	$0.00	$0.00	$0.00	$0.00	$0.00	$14.00	$12.60	$13.30
		73	$0.00	$0.00	$0.00	$0.00	$0.00	$14.00	$12.60	$13.30
		88	$0.00	$0.00	$0.00	$0.00	$0.00	$14.00	$12.60	$13.30

***In 2015, Ohio State University revised budgets to show fixed and variable miscellaneous costs. A straight average is used for this budget item.**

Source: Updated with Crop Enterprise Budgets 2017, OSU Extension, Dept. of Agricultural, Environmental, and Development Economics.

5/19/2017

2017 CORN BUDGET
Conservation Tillage

VARIABLE COSTS	Inputs - 5 Yr. Average UNITS		BASE 127 BUSHEL	@ ADD. BUSHEL	5 YR. AVG. COST Exhibit D	Costs per Acre BASE 127 BUSHEL	Costs per Acre @ ADD. BUSHEL
SEED	KERNELS (1000's)		28	0.12	$3.35	$92.46	$0.41
FERTILIZER							
	N	LB.	125.9	1.1	$0.46	$57.91	$0.51
	P2O5	LB.	47.0	0.37	$0.58	$27.26	$0.21
	K2O	LB.	34.3	0.27	$0.41	$14.06	$0.11
	LIME	TON	0.25	0	$25.00	$6.25	$0.00
CHEMICALS					$52.67	$52.67	$0.00
FUEL, OIL, GREASE					$17.08	$17.08	$0.00
REPAIRS					$24.84	$24.84	$0.00
CROP INSURANCE					$19.60	$19.60	$0.00
VARIABLE MISCELLANEOUS					$7.60	$7.60	$0.01
DRYING: FUEL & ELECTRIC ONLY					$0.14	$17.78	$0.14
TRUCKING: FUEL ONLY					$0.02	$2.54	$0.02
SUBTOTAL						**$340.06**	**$1.41**
INTEREST: on Subtotal	4.9%/12 X 7 MOS	2.9%	int x subtotal			$9.72	$0.04
FIXED COSTS							
LABOR CHARGE					$44.10	$44.10	$0.00
MACHINERY & EQUIPMENT CHARGE					$121.57	$121.57	$0.00
MISCELLANEOUS					$23.33	$23.33	$0.00
TOTAL COSTS						**$538.78**	**$1.45**

Source: The Ohio State University College of Food, Agricultural & Environmental Sciences, Corn Production Budget 2017, 5/15/2017

DTE, 5/19/2017

2017 SOYBEAN BUDGET
No-Tillage Practices

VARIABLE COSTS	Inputs - 5 Yr. Average UNITS	BASE 37 BUSHEL	@ ADD. BUSHEL	5 YR. AVG. COST Exhibit D	Costs per Acre BASE 37 BUSHEL	Costs per Acre @ ADD. BUSHEL
SEED	seeds (1000s)	178.0	0	$0.40	$71.20	$0.00
FERTILIZER						
N	LB.	0	0	$0.00	$0.00	$0.00
P2O5	LB.	30	0.77	$0.58	$17.40	$0.45
K2O	LB.	53	1.35	$0.41	$21.73	$0.55
LIME	TON	0.25	0	$25.00	$6.25	$0.00
CHEMICALS				$33.11	$33.11	$0.00
FUEL, OIL, GREASE				$10.16	$10.16	$0.00
REPAIRS				$18.15	$18.15	$0.00
CROP INSURANCE				$12.60	$12.60	$0.00
VARIABLE MISCELLANEOUS				$7.20	$7.20	$0.00
TRUCKING: FUEL ONLY				$0.02	$0.74	$0.02
SUBTOTAL					**$198.54**	**$1.02**
INTEREST: ON SUBTOTAL COST	4.9%/12 X 6 MOS = 2.5%	int x subtotal			$4.86	$0.02
FIXED COSTS						
LABOR CHARGE				$29.40	$29.40	$0.00
MACHINERY & EQUIPMENT CHARGE				$98.77	$98.77	$0.00
MISCELLANEOUS				$15.53	$15.53	$0.00
TOTAL COSTS					**$347.10**	**$1.05**

Source: The Ohio State University College of Food, Agricultural & Environmental Sciences, Soybean Production Budget 2017, Updated 05/15/2017

DTE, 5/19/2017

2017 WHEAT BUDGET
Conservation Till

VARIABLE COSTS			Inputs - 5 Yr. Average		5 YR. AVG.	Costs per Acre	
ITEM		UNITS	BASE 56 BUSHELS	@ ADD. BUSHEL	COST Exhibit D	BASE 56 BUSHELS	@ ADD. BUSHEL
SEED		seeds (1000s)	1,400	0	$0.03	$42.00	$0.00
FERTILIZER							
	N	LB.	51	1.73	$0.61	$31.11	$1.06
	P2O5	LB.	36	0.62	$0.56	$20.16	$0.35
	K2O	LB.	41	0.36	$0.40	$16.40	$0.14
	LIME	TON	0.25	0	$25.00	$6.25	$0.00
CHEMICALS					$12.30	$12.30	$0.00
FUEL, OIL, GREASE					$13.51	$13.51	$0.00
REPAIRS					$17.95	$17.95	$0.00
CROP INSURANCE					$12.40	$12.40	$0.00
VARIABLE MISCELLANEOUS					$5.44	$5.44	$0.00
TRUCKING: FUEL ONLY					$0.02	$1.12	$0.02
SUBTOTAL (Variable Costs)						**$178.64**	**$1.57**
INTEREST: ON SUBTOTALED COST			4.8%/12 X 8 MOS 3.2%	int x subtotal		$5.72	$0.05
FIXED COSTS							
LABOR CHARGE					$23.40	$23.40	$0.00
MACHINERY & EQUIPMENT CHARGE					$115.15	$115.15	$0.00
MISCELLANEOUS					$13.30	$13.30	$0.00
TOTAL COSTS						**$336.21**	**$1.62**

OSU Crop Enterprise Budge, 10/31/2016
5/19/2017

8/3/2017

INTEREST RATES USED IN CAPITALIZATION RATE
2011-2017

INTEREST RATE*	
Year	
2011	~~6.70~~
2012	5.15
2013	~~4.95~~
2014	6.20
2015	5.60
2016	5.15
2017	5.65
Average	5.55

EQUITY RATE**	
Year	
2015	-0.36
2014	8.45
2013	8.70
2012	17.04
2011	11.04
2010	12.46
2009	-0.71
2008	4.30
2007	4.60
2006	13.30
2005	18.18
2004	17.32
2003	8.17
2002	-0.57
2001	6.13
2000	8.74
1999	8.12
1998	6.12
1997	7.36
1996	7.59
1995	4.73
1994	6.08
1993	7.68
1992	6.55
1991	2.35
Average	**7.73**

*** Fixed multi-flex rate for a 25-year term on a loan $75,000 and over, Farm Credit Services.**
****Equity rate is the USDA rate of return on farm equity averaged for most recent 25 years.**
For 2016, the equity rate was 5.3%

CAPITALIZATION RATES USED IN CALCULATION
2011-2017

TAX YEAR	CAPITALIZATION RATE
2011	7.6%
2012	7.5%
2013	6.7%
2014	6.2%
2015	6.6%
2016	6.3%
2017	**8.0%**

2014 CAUV SAMPLE CALCULATION

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

	CORN	BEANS	WHEAT
PI DAT yield/acre (1984)	144	52	64
% increased yield	1.287288	1.232877	1.5
adjusted yield/acre	185	64	96
X Crop Price/Unit	$4.48	$10.13	$5.16
= GROSS INCOME / ACRE	$828.80	$648.32	$495.36
YIELD / ACRE	185	64	96
BASE YIELD	120	36	52
= YIELD ABOVE BASE	65	28	44
X ADDED UNIT COST	$1.18	$1.27	$1.80
ADDED UNIT COST / ACRE	$76.70	$35.56	$79.20
BASE YIELD COST	$437.85	$275.21	$255.48
= TOTAL NON-LAND PROD. COST	$514.55	$310.77	$334.68
NET RETURN / ACRE	$314.25	$337.55	$160.68
X CROPPING PATTERN	0.386	0.52	0.094
= ROTATIONAL NET RETURN / ACRE	$121.30	$175.53	$15.10
TOTAL ROTATIONAL NET RETURN	$311.93		
BASE CAP RATE	0.062		
CAUV LAND VALUE	$5,031.14	SAY	$5,030

8/15/2013

2017 CAUV SAMPLE CALCULATION

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

	CORN	BEANS	WHEAT
PI DAT yield/acre (1984)	144	52	64
% increased yield	1.323729	1.312329	1.543182
adjusted yield/acre	191	68	99
X Crop Price/Unit	$4.51	$10.83	$5.53
= GROSS INCOME / ACRE	$861.41	$736.44	$547.47
YIELD / ACRE	191	68	99
BASE YIELD	127	37	56
= YIELD ABOVE BASE	64	31	43
X ADDED UNIT COST	$1.45	$1.05	$1.62
ADDED UNIT COST / ACRE	$92.80	$32.55	$69.66
BASE YIELD COST	$538.78	$347.10	$336.21
= TOTAL NON-LAND PROD. COSTS	$631.58	$379.65	$405.87
NET RETURN / ACRE	$229.83	$356.79	$141.60
X CROPPING PATTERN	0.4	0.54	0.06
= ROTATIONAL NET RETURN / ACRE	$91.93	$192.67	$8.50
TOTAL ROTATIONAL NET RETURN	$293.09		
BASE CAP RATE	0.08		
UNADJUSTED VALUE	$3,663.68	SAY	**$3,660**
2016 VALUE	$4,749.82		**$4,750**
ADJUSTED CAUV VALUE			**$4,205**

8/3/2017

2014 CAUV SAMPLE CALCULATION

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

	CORN	BEANS	WHEAT
PI DAT yield/acre (1984)	108	38	50
% increased yield	1.287288	1.232877	1.5
adjusted yield/acre	139	47	75
X Crop Price/Unit	$4.48	$10.13	$5.16
= GROSS INCOME / ACRE	$622.72	$476.11	$387.00
YIELD / ACRE	139	47	75
BASE YIELD	120	36	52
= YIELD ABOVE BASE	19	11	23
X ADDED UNIT COST	$1.18	$1.27	$1.80
ADDED UNIT COST / ACRE	$22.42	$13.97	$41.40
BASE YIELD COST	$437.85	$275.21	$255.48
= TOTAL NON-LAND PROD. COST	$460.27	$289.18	$296.88
NET RETURN / ACRE	$162.45	$186.93	$90.12
X CROPPING PATTERN	0.386	0.52	0.094
= ROTATIONAL NET RETURN / ACRE	$62.71	$97.20	$8.47
TOTAL ROTATIONAL NET RETURN	$168.38		
BASE CAP RATE	0.062		
CAUV LAND VALUE	$2,715.82	SAY	$2,720

8/15/2013

2017 CAUV SAMPLE CALCULATION

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

	CORN	BEANS	WHEAT
PI DAT yield/acre (1984)	108	38	50
% increased yield	1.323729	1.312329	1.543182
adjusted yield/acre	143	50	77
X Crop Price/Unit	$4.51	$10.83	$5.53
= GROSS INCOME / ACRE	$644.93	$541.50	$425.81
YIELD / ACRE	143	50	77
BASE YIELD	127	37	56
= YIELD ABOVE BASE	16	13	21
X ADDED UNIT COST	$1.45	$1.05	$1.62
ADDED UNIT COST / ACRE	$23.20	$13.65	$34.02
BASE YIELD COST	$538.78	$347.10	$336.21
= TOTAL NON-LAND PROD. COSTS	$561.98	$360.75	$370.23
NET RETURN / ACRE	$82.95	$180.75	$55.58
X CROPPING PATTERN	0.4	0.54	0.06
= ROTATIONAL NET RETURN / ACRE	$33.18	$97.61	$3.33
TOTAL ROTATIONAL NET RETURN	$134.12		
BASE CAP RATE	0.08		
UNADJUSTED VALUE	$1,676.50	SAY	**$1,680**
2016 VALUE	$2,219.05		**$2,220**
ADJUSTED CAUV VALUE			**$1,950**

8/3/2017

CAUV Summary Values

8/3/2017

TY 2017 Final Values (Adjusted)

Productivity Index	No. of Units	Net Return/Acre			Cropland Value/Acre		
		Low	High	Average	Low	High	Average
0-49	601	0	40	0	350	350	350
50-59	749	0	90	17	350	1,280	430
60-69	1,114	0	154	74	350	2,190	1,061
70-79	798	65	220	138	925	3,125	1,969
80-89	211	143	265	205	2,035	3,760	2,909
90-99	35	234	295	253	3,320	4,190	3,602
100+	6	296	296	296	4,205	4,205	4,205
All Regions	3,514	$0	$296	$74	$350	$4,205	**$1,153**

TY 2014 Final - 2/28/2014

Productivity Index	No. of Units	Net Return/Acre			Cropland Value/Acre		
		Low	High	Average	Low	High	Average
0-49	601	0	87	1	350	350	350
50-59	749	0	129	46	350	2,080	700
60-69	1,114	0	181	110	350	2,930	1,778
70-79	798	105	241	169	1,690	3,890	2,728
80-89	211	176	283	230	2,840	4,570	3,718
90-99	35	256	312	274	4,130	5,030	4,428
100+	6	312	312	312	5,030	5,030	5,030
All Regions	3,514	$0	$312	$100	$350	$5,030	**$1,668**

CAUV Summary Values

8/3/2017

TY 2017 Final Values (Adjusted)

Productivity Index	No. of Units	Net Return/Acre			Cropland Value/Acre		
		Low	High	Average	Low	High	Average
0-49	601	0	40	0	350	350	350
50-59	749	0	90	17	350	1,280	430
60-69	1,114	0	154	74	350	2,190	1,061
70-79	798	65	220	138	925	3,125	1,969
80-89	211	143	265	205	2,035	3,760	2,909
90-99	35	234	295	253	3,320	4,190	3,602
100+	6	296	296	296	4,205	4,205	4,205
All Regions	3,514	$0	$296	$74	$350	$4,205	**$1,153**

TY 2016 Final - 6/02/2016

Productivity Index	No. of Units	Net Return/Acre			Cropland Value/Acre		
		Low	High	Average	Low	High	Average
0-49	601	0	45	0	350	350	350
50-59	749	0	93	19	350	1,480	466
60-69	1,114	0	159	77	350	2,530	1,235
70-79	798	70	223	142	1,110	3,540	2,255
80-89	211	146	268	208	2,320	4,250	3,302
90-99	35	237	298	256	3,760	4,730	4,074
100+	6	299	299	299	4,750	4,750	4,750
All Regions	3,514	$0	$299	$76	$350	$4,750	**$1,310**

Average CAUV Values by Year, 2001-2017

Productivity Index	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
0-49	100	100	100	100	100	108	100	100	176	200	300	350	350	350	350	350	350
50-59	104	102	101	114	106	134	100	100	200	214	328	362	516	700	518	466	430
60-69	181	125	113	104	101	125	123	188	435	436	632	610	1218	1778	1371	1235	1061
70-79	394	285	244	157	124	241	283	431	746	845	1126	1147	1958	2728	2347	2255	1969
80-89	640	516	467	342	293	465	521	708	1059	1278	1641	1717	2743	3718	3354	3302	2909
90-99	842	713	663	533	492	675	747	973	1368	1601	2017	2128	3310	4428	4104	4074	3602
100+	1000	870	820	690	650	880	970	1200	1620	1900	2380	2490	3780	5030	4770	4750	4205
Total	231	180	163	135	123	177	181	249	459	505	700	719	1205	1668	1388	1310	1153
No. of Soils	3279	3307	3313	3313	3358	3482	3510	3511	3511	3514	3514	3514	3514	3514	3514	3514	3514

Average CAUV Values by Reappraisal/UpdateYear

Productivity Index	2002	2005	2008	2011	2014	2017
0-49	100	100	100	300	350	350
50-59	102	106	100	328	700	430
60-69	125	101	188	632	1778	1061
70-79	285	124	431	1126	2728	1969
80-89	516	293	708	1641	3718	2909
90-99	713	492	973	2017	4428	3602
100+	870	650	1200	2380	5030	4205
Total	180	123	249	700	1668	1153
No. of Soils	3307	3358	3511	3514	3514	3514

Comparison of Inputs, Tax Years 2014-2017

Crop Prices	2014	2015	2016	2017	Difference 2014-17	Difference 2016-17
Corn	$4.48	$4.55	$4.49	$4.51	**$0.03**	$0.02
Soybeans	$10.13	$11.09	$10.91	$10.83	**$0.70**	($0.08)
Wheat	$5.16	$5.67	$5.53	$5.53	**$0.37**	$0.00
Non-land Production Costs						
Base Cost						
Corn	$437.85	$516.99	$524.47	$538.78	**$100.93**	$14.31
Soybeans	$275.21	$325.42	$336.33	$347.10	**$71.89**	$10.77
Wheat	$255.48	$296.98	$323.52	$336.21	**$80.73**	$12.69
Additional Unit Cost						
Corn	$1.18	$1.36	$1.38	$1.45	**$0.27**	$0.07
Soybeans	$1.27	$1.24	$1.07	$1.05	**($0.22)**	($0.02)
Wheat	$1.80	$1.77	$1.64	$1.62	**($0.18)**	($0.02)
Capitalization Rate						
Mortgage/Equity Ratio	60/40	80/20	80/20	80/20		
Years	15	25	25	25		
Interest Rate	5.89	6.15	5.76	7.73		
Equity Rate	5.25	5.25	5.25	5.55		
Tax Additur	1.5	1.6	1.6	1.6		
Capitalization Rate	6.2	6.6	6.3	8.0	1.80	1.70