

## 2007 Purdue Crop Cost & Return Guide

(The numbers in this publication are best considered as general guidelines when beginning the process of generating one's own specific crop budgets for 2007.)

**Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils**

	Crop Budgets for Three Yield Levels <sup>1</sup>														
	Low Productivity Soil					Average Productivity Soil					High Productivity Soil				
	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans
Expected yield per acre <sup>2</sup>	118.9	126.5	39.6	56.4	23.4	147.1	156.5	49.0	69.8	28.9	181.0	192.5	60.3	85.9	35.6
Harvest price <sup>3</sup>	\$3.71	\$3.71	\$7.65	\$4.05	\$7.65	\$3.71	\$3.71	\$7.65	\$4.05	\$7.65	\$3.71	\$3.71	\$7.65	\$4.05	\$7.65
Market Revenue	\$441	\$469	\$303	\$228	\$179	\$546	\$581	\$375	\$283	\$221	\$671	\$714	\$461	\$348	\$272
Less variable costs <sup>4</sup>															
Fertilizer <sup>5</sup>	\$68	\$63	\$28	\$44	\$18	\$85	\$79	\$34	\$58	\$21	\$106	\$98	\$40	\$75	\$25
Seed <sup>6</sup>	39	39	39	26	45	43	43	39	26	45	45	45	39	26	45
Chemicals <sup>7</sup>	49	30	12	N/A	10	49	30	12	N/A	10	49	30	12	N/A	10
Dryer Fuel	22	18	N/A	N/A	3	27	22	N/A	N/A	3	34	27	N/A	N/A	4
Machinery Fuel @ \$2.20	16	16	7	10	7	16	16	7	10	7	16	16	7	10	7
Machinery Repairs <sup>8</sup>	10	10	6	10	9	10	10	6	10	9	10	10	6	10	9
Hauling <sup>9</sup>	10	11	3	5	2	12	13	4	6	2	15	16	5	7	3
Interest <sup>10</sup>	11	9	6	5	5	12	11	6	6	6	14	12	6	7	6
Insurance/misc.	15	15	12	3	4	15	15	12	3	4	16	16	12	3	4
Total variable cost	\$240	\$211	\$113	\$103	\$103	\$269	\$239	\$120	\$119	\$107	\$305	\$270	\$127	\$138	\$113
Contribution margin <sup>11</sup>															
(Revenue - variable costs)	\$201	\$258	\$190	\$125	\$76	\$277	\$342	\$255	\$164	\$114	\$366	\$444	\$334	\$210	\$159

<sup>1</sup>Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity soils. Historically, the high yield has been based on Brookston soil, which is one of the most productive soils in Indiana. The high rotation corn yield shown here is likely 5 to 10 bushels per acre higher than one would expect on average for the top one-third of corn yields in Indiana.

<sup>2</sup>These yields assume average weather conditions and timely plant/harvest date, except soybean double crop yield, which is based on July 1 plant date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 94% assumes a chisel plow tillage system; drill soybeans 31.3%; and wheat 49.2% on low productivity soil and 44.6% on average and high productivity soils. Double crop soybeans (South-central Indiana) are 59% of rotation soybeans.

<sup>3</sup>Harvest corn price is December 2007 CBOT futures price less \$0.25 basis. Harvest soybean price is November 2007 CBOT futures price less \$0.30 basis. Harvest wheat price is July 2007 CBOT futures price less \$0.75 basis. The prices shown here were estimated using closing prices on February 8, 2007. These prices will change.

<sup>4</sup>Seed, fertilizer, chemical, and fuel prices are based on January 2007 quotes.

<sup>5</sup>Fertilizer based on tri-state fertilizer recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O-lime by crop and soil: continuous corn, 130-44-52-391, 169-54-60-506, 215-67-69-644; rotation corn, 111-47-54-332, 143-58-62-430, 180-71-72-540; rotation beans, 0-32-75-0, 0-39-89-0, 0-48-104-0; wheat, 51-36-41-154, 75-44-46-224, 102-54-52-308; double crop beans, 0-19-53-0, 0-23-61-0, 0-29-70-0. Fertilizer prices per lb.: NH<sub>3</sub> @ \$0.28; urea @ \$0.40; P<sub>2</sub>O<sub>5</sub> @ \$0.38; K<sub>2</sub>O @ \$0.21; lime @ \$18/ton. 5-10% more nitrogen might be needed on poorly drained soils. All soil tests for phosphorus and potassium are in the maintenance range, and the pH is in the recommended range.

<sup>6</sup>Corn assumes non-GMO seed. Depending on variety and seeding rate, GMO corn would add \$15 or more per acre. Soybean seed prices include Round-Up Ready® varieties.

<sup>7</sup>Corn rootworm insecticide @\$18.90 per acre is included for continuous corn and should be added to rotation corn in northern Indiana.

<sup>8</sup>Repairs are based on approximately five-year-old machinery. For older machinery, per acre repairs and downtime cost will be higher and indirect machinery costs will be lower.

<sup>9</sup>Hauling charge represents moving grain from field to storage. Based on Machinery Cost Estimates: Harvesting, University of Illinois, Farm Business Management Handbook, FBM 0203, July 2006.

<sup>10</sup>Interest is based on 8.75% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs and all the insurance/misc.

<sup>11</sup>Contribution margin is the return to the unpaid operator labor/management, machinery services, and land resources.

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**Table 2. Estimated per Acre Indirect Charges for Low, Average, and High Productivity Indiana Soils**

Farm Acres Rotation <sup>1</sup>	Low Productivity Soil		Average Productivity Soil		High Productivity Soil	
	2700 c-c	3000 c-b	2700 c-c	3000 c-b	2700 c-c	3000 c-b
Crop contribution margin <sup>2</sup>	\$201	\$224	\$277	\$299	\$366	\$389
Government payment <sup>3</sup>	\$17	\$17	\$20	\$20	\$25	\$25
Total contribution margin	\$218	\$241	\$297	\$319	\$391	\$414
Annual overhead costs:						
Machinery replacement <sup>4</sup>	\$43	\$43	\$43	\$43	\$43	\$43
Drying/handling	\$14	\$9	\$14	\$9	\$14	\$9
Family and hired labor <sup>5</sup>	\$34	\$30	\$34	\$30	\$34	\$30
Land <sup>6</sup>	\$115	\$115	\$142	\$142	\$175	\$175
Earnings or (losses)	\$13	\$44	\$65	\$95	\$126	\$157

<sup>1</sup>Rotations are as follows: c-c = 2,700 acres continuous corn; c-b = 1,500 acres rotation corn - 1,500 acres soybeans.

<sup>2</sup>Crop's contribution margin is per acre contribution margin from Table 1 times number of acres.

<sup>3</sup>Government payment includes only the direct payment. The per bushel direct payment rate is \$0.28 for corn and \$0.44 for soybeans. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Base acres for the farm are assumed half corn and half soybeans. Federal regulations pertaining to payment limits may limit this payment to a smaller amount than is shown here.

<sup>4</sup>The same basic machinery set, which is timely for each rotation, is used. Corn production utilizes a chisel plow tillage system and soybeans utilize no-till. Average annual replacement costs were calculated using the Purdue Machinery Cost Calculator for a timely machinery set. Seven-year trading policy assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower.

<sup>5</sup>Labor expenses include a family living withdrawal of \$40,826 (\$58,285 of family living expenses less \$27,810 in net nonfarm income plus \$10,351 in income and self-employment taxes. Values are reported in *Farm Income & Production Costs for 2005*, University of Illinois Extension, AE-4566, April 2006). A full-time employee with total compensation of \$35,800. Employee compensation based on Wages and Benefits for Farm Employees, Iowa State University, University Extension FM 1862, July 2006. The balance is used for part-time hired labor.

<sup>6</sup>Based on cash rent per bushel reported in Indiana Farmland Values Continue to Increase, *Purdue Agricultural Economics Report*, August, 2006. Cash rent for low-yield soil estimated to be \$115 per acre, average-yield soil estimated to be \$142 per acre, and high-yield soil estimated to be \$175 per acre. The sharp rise in crop prices since the time of the survey may result in a wide variation in cash rents and thus the estimated land charge.

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