



# Organic Crop Production Enterprise Budgets

An enterprise budget is an estimate of the costs and returns to produce a product (enterprise). For example, a conventional Iowa corn and soybean producer would be interested in developing both a corn and soybean enterprise budget. Organic growers may wish to develop budgets for three to six different products, depending upon the number of crops within their rotation. These budgets reflect a four-year rotation using these crops: corn, soybeans, oats with alfalfa, and a second year of alfalfa. Changing the rotation to include a second year of corn after soybeans, for example, would affect the corn budget described here.

Why use enterprise budgets? In economic terms, enterprise budgets help to allocate land, labor, and capital, which are limited, to the most appropriate use. The person who controls the resources defines their most appropriate use, for goals that include maximizing profits, minimizing soil loss, or others.

The estimated costs and returns illustrated here are based on a long-term study located at an Iowa State University research farm in southwestern Iowa. The data was modified to more accurately reflect average Iowa results based on feedback from organic farmers who reviewed the budgets.

## Budget Format

Enterprise budget formats vary. Some are complex. Others are quite simple. The budgets included in this publication are divided into five sections:

**Receipts.** The first section illustrates the total receipts the enterprise provides on a set unit(s). Records should be kept on both a sales unit (per bushel or per ton) and land unit (per acre) basis. [Sales prices are those listed by the USDA Agricultural Marketing](#)

[Service](#) (AMS) ([www.ams.usda.gov/market-news/organic](http://www.ams.usda.gov/market-news/organic)) using yields based on those received by a wide range of organic producers over the last five to six years. Note the alfalfa price for the establishment year is lower than the second year, due to lower-quality straw residue in the fall hay cutting in year one.

**Preharvest.** The second section includes the costs of planting and growing the product (preharvest costs). For example, once the seed is planted or a field operation is completed, the cost has occurred and needs to be covered from some source. Additionally, there is a time delay between preharvest expenses and the time the product is sold. These expenses may have to be covered from borrowing, savings, or some other source. Therefore, interest on preharvest costs should be included as a production expense.

Preharvest costs for the oat and alfalfa budgets are referred to as establishment costs and are divided equally between the two crops (years). Dividing establishment costs allocates the first-year costs of field preparation and seeds over the life of the establishment, which in this case is two years. The allocation process is similar to that conducted for [Estimated Costs of Crop Production in Iowa](#) (FM1712, <https://store.extension.iastate.edu/Product/1793>) and [Estimated Costs of Pasture and Hay Production](#) (AG96, <https://store.extension.iastate.edu/Product/789>).

Note that machinery has both a variable and fixed component. The machinery cost estimates for field operations were also taken from FM1712. Field operations listed are those typically conducted by organic producers. Seed costs are estimates of average prices paid. Fertility can be supplemented with various products ranging from liquid swine manure to

bedded compost from dairy, poultry, or other livestock production systems.

The costs of the products vary substantially based on availability, distance from farm, and fertility content.

This corn budget assumes dry chicken manure is readily available from a nearby source and provides enough nitrogen for the rotation used. The application of the manure is included in the listing of field operations and the purchase price for the manure is listed under fertilizer.

The amount of phosphorus (P) and potassium (K) needed for the entire four-year rotation will depend upon crop yields (removal rates) as well as the fertility content and application rate of the manure.

Miscellaneous expenses vary and include cost items related to the general production practices for the crop that are either infrequent (not annual) or don't quite fit into the other cost categories. For organic crops, miscellaneous expenses may include costs related to organic certification.

**Harvest.** The third section is the harvest component. Handling and hauling costs are included with the harvesting activity, and machinery has a variable and fixed component. Again, the machinery cost estimates were taken from FM1712.

**Labor and Land.** The fourth section relates to labor and land ownership costs. Labor is considered a fixed cost in these budgets because most labor is provided by the operator, family, or permanent hired labor. The hours per acre are those typically provided for

fieldwork for each crop. The soybean budget includes one hour of hand-weeding in addition to the one hour per acre for pre-harvest and harvest machinery. No labor was added for traveling to and from the field, repairs, or other activities related to production. These activities would add approximately 1.5 hours per acre to the fieldwork times listed in the budgets.

The land use is charged a cash rent equivalent of \$219.00 per acre. This charge reflects ownership costs and a return to the land asset regardless of whether the land is actually owned or rented. Depending upon the debt level and interest rate, principal and interest payments for purchased land could be higher than the cash rent equivalent listed.

**Summary of Returns.** The last section is the summary of returns. The total costs are variable costs and ownership costs combined. The return over variable costs is the total of receipts minus total variable costs. The return over all costs is total receipts minus combined variable and ownership costs. Return to management is the economic return over total costs. This is the amount left over to cover family living expenses, savings, future investments, etc.

## Limitations

The illustrated budgets are to be used as an indication of what a particular crop could average over time and location. Individual farm results will vary from these numbers based on soil types, location to markets, availability to manure sources, and managerial ability, among other considerations.

The budgets include receipts as well as costs through harvest and handling. Marketing costs have been excluded. Note that prices listed from AMS are FOB from the farm, indicating the buyer of the crop will pay for transportation from the farm to their selected destination. Prices represent typical prices reported throughout the year by AMS but are not indicative of a weighted season average price received. Alfalfa prices reflect prices received by farmers at Iowa hay auctions for premium alfalfa. Transportation costs to market are not included. Oat straw is estimated to be 70% of first year alfalfa price, to reflect differences in feed value. Additionally, first year alfalfa price is estimated to be 85% of the premium price received in the second year—again because of feed value differences.

[Estimated Costs of Crop Production in Iowa](#) (FM 1712), [Estimated Costs of Pasture and Hay Production](#) (AG 96), [Using Manure Nutrients for Crop Production](#) (PMR 1003), and [A General Guide for Crop Nutrient and Limestone Recommendations in Iowa](#) (PM 1688) are available for download from the [ISU Extension Store](http://store.extension.iastate.edu) at <http://store.extension.iastate.edu>.



## Organic Corn Budget (2018)

RECEIPTS	QUANTITY	\$/UNIT	TOTAL	YOUR ESTIMATE
Organic corn sales	153 bushels	\$9.80	\$1,499.40	
<b>TOTAL RECEIPTS</b>	<b>153 bushels</b>	<b>\$9.80</b>	<b>\$1,499.40</b>	
PREHARVEST	QUANTITY	FIXED COST	VARIABLE COST	YOUR ESTIMATE
Plow (moldboard)		\$9.20	\$9.80	\$
Tandem disk		\$4.70	\$3.50	\$
Apply chicken manure		\$2.00	\$1.60	\$
Field cultivate		\$2.70	\$2.80	\$
Plant		\$5.90	\$4.90	\$
Rotary hoe (2x)		\$3.80	\$2.20	\$
Row cultivate (2x)		\$5.40	\$4.80	\$
<b>TOTAL MACHINERY COSTS</b>		<b>\$33.70</b>	<b>\$29.60</b>	<b>\$</b>
Seed (price per 1,000 seeds)	32,200	\$2.25	\$72.45	\$
Fertilization (dry chicken manure)	3,105	\$0.022	\$68.31	\$
Crop insurance			\$11.00	\$
Misc. expenses			\$10.00	\$
Interest on preharvest variable cost (8 months @ 5.15%)			\$7.40	\$
HARVEST	QUANTITY	FIXED COST	VARIABLE COST	YOUR ESTIMATE
Combine		\$13.30	\$6.90	\$
Haul		\$6.73	\$5.97	\$
Dry		\$8.25	\$31.35	\$
Handle		\$2.75	\$3.06	\$
<b>TOTAL HARVEST COSTS</b>		<b>\$30.44</b>	<b>\$43.47</b>	<b>\$</b>
<b>Labor (hours per acre)</b>	1.41	\$14.00	\$19.74	\$
<b>Land (cash rent equivalent)</b>		\$219.00		\$
<b>Total costs</b>		<b>\$302.88</b>	<b>\$242.23</b>	<b>\$</b>
<b>Total costs per bushel</b>		<b>\$1.98</b>	<b>\$1.58</b>	<b>\$</b>
<b>Returns over variable cost</b>			<b>\$1,257.17</b>	<b>\$</b>
<b>Returns over total cost</b>			<b>\$954.30</b>	<b>\$</b>
<b>Return to land, labor, and management</b>			<b>\$1,193.04</b>	<b>\$</b>
<b>Return to land and management</b>			<b>\$1,173.30</b>	<b>\$</b>
<b>Return to management</b>			<b>\$954.30</b>	<b>\$</b>

## Organic Soybean Budget (2018)

RECEIPTS	QUANTITY	\$/UNIT	TOTAL	YOUR ESTIMATE
Organic soybean sales (cleaned)	36 bushels	\$19.90	\$716.40	\$
Organic soybean sales (screened)	4 bushels	\$18.10	\$72.40	\$
<b>TOTAL RECEIPTS</b>	<b>40 bushels</b>		<b>\$788.80</b>	<b>\$</b>
PREHARVEST	QUANTITY	FIXED COST	VARIABLE COST	YOUR ESTIMATE
Fall - disk stalks		\$4.70	\$3.50	\$
Fall - plant rye		\$4.60	\$4.10	\$
Disk rye (2x)		\$9.40	\$7.00	\$
Field cultivate		\$2.70	\$2.80	\$
Plant		\$5.90	\$4.90	\$
Rotary hoe (2x)		\$3.80	\$2.20	\$
Row cultivate (2x)		\$5.40	\$4.80	\$
<b>TOTAL MACHINERY COSTS</b>		<b>\$36.50</b>	<b>\$29.30</b>	<b>\$</b>
Soybean seed (price per bushel)	1.0	\$37.00	\$37.00	\$
Rye seed (price per bushel)	1.25	\$19.00	\$23.75	\$
Crop insurance			\$8.90	\$
Misc. expenses			\$10.00	\$
Interest on preharvest variable cost (8 months @ 5.15%)			\$4.21	\$
HARVEST	QUANTITY	FIXED COST	VARIABLE COST	YOUR ESTIMATE
Combine		\$8.50	\$4.20	\$
Haul		\$1.76	\$1.56	\$
Handle		\$0.72	\$0.80	\$
<b>TOTAL HARVEST COSTS</b>		<b>\$10.98</b>	<b>\$6.56</b>	<b>\$</b>
<b>Labor (hours per acre)</b>	2.12	\$14.00	\$29.68	\$
<b>Land (cash rent equivalent)</b>		\$219.00		\$
<b>Total costs</b>		<b>\$296.16</b>	<b>\$119.72</b>	<b>\$</b>
<b>Total costs per bushel</b>		<b>\$7.40</b>	<b>\$2.99</b>	<b>\$</b>
<b>Returns over variable cost</b>			<b>\$669.08</b>	<b>\$</b>
<b>Returns over total cost</b>			<b>\$372.92</b>	<b>\$</b>
<b>Return to land, labor, and management</b>			<b>\$621.60</b>	<b>\$</b>
<b>Return to land and management</b>			<b>\$591.92</b>	<b>\$</b>
<b>Return to management</b>			<b>\$372.92</b>	<b>\$</b>

## Organic Oat-Alfalfa Budget (2018)

RECEIPTS	QUANTITY	\$/UNIT	TOTAL	YOUR ESTIMATE
Organic oat sales	80 bushels	\$4.30	\$344.00	\$
Straw sales	1.0 ton	\$105.00	\$105.00	\$
Organic alfalfa sales	1.0 ton	\$150.00	\$150.00	\$
<b>TOTAL RECEIPTS</b>	<b>40 bushels</b>		<b>\$599.00</b>	\$
<b>PREHARVEST</b>	<b>QUANTITY</b>	<b>FIXED COST</b>	<b>VARIABLE COST</b>	<b>YOUR ESTIMATE</b>
Field cultivate		\$2.70	\$2.80	\$
Harrow		\$2.10	\$1.50	\$
Drill oats		\$4.60	\$4.10	\$
Cultipack		\$2.70	\$2.40	\$
<b>TOTAL MACHINERY COSTS</b>		<b>\$12.10</b>	<b>\$10.80</b>	\$
Oat seed (unit price per bushel)	2.5	\$10.00	\$25.00	\$
Alfalfa mix (unit price per pound)	16.0	\$4.85	\$77.60	\$
Crop insurance			\$0.00	\$
Miscellaneous expenses			\$10.00	\$
Interest on preharvest variable cost (8 months @ 5.15%)			\$3.58	\$
<b>One half of establishment costs</b>		<b>\$6.05</b>	<b>\$63.49</b>	
<b>HARVEST</b>	<b>QUANTITY</b>	<b>FIXED COST</b>	<b>VARIABLE COST</b>	<b>YOUR ESTIMATE</b>
Combine		\$7.60	\$3.20	\$
Haul oats		\$3.52	\$3.12	\$
Handle oats		\$1.44	\$1.60	\$
Baled oat straw (large round)		\$8.20	\$5.30	\$
Haul oat straw		\$1.93	\$3.07	\$
Mowed alfalfa mix		\$5.50	\$4.40	\$
Raked alfalfa mix		\$ 3.20	\$2.00	\$
Baled alfalfa mix (large round)		\$8.20	\$5.30	\$
Haul alfalfa mix		\$1.93	\$3.70	\$
<b>TOTAL HARVEST COSTS</b>		<b>\$41.52</b>	<b>\$31.06</b>	\$
<b>Labor (hours per acre)</b>	1.18	\$14.00	\$16.52	\$
<b>Land (cash rent equivalent)</b>		\$219.00		\$
<b>Total costs</b>		<b>\$283.09</b>	<b>\$94.55</b>	\$
<b>Returns over variable cost</b>			<b>\$504.45</b>	\$
<b>Returns over total cost</b>			<b>\$221.36</b>	\$
<b>Return to land, labor, and management</b>			<b>\$456.88</b>	\$
<b>Return to land and management</b>			<b>\$440.36</b>	\$
<b>Return to management</b>			<b>\$221.36</b>	\$

## Organic Alfalfa Budget (2018)

RECEIPTS	QUANTITY	\$/UNIT	TOTAL	YOUR ESTIMATE
Organic alfalfa sales	4.5 tons	\$175.00	\$787.50	
<b>TOTAL RECEIPTS</b>	<b>4.5 tons</b>	<b>\$175.00</b>	<b>\$787.50</b>	
PREHARVEST	QUANTITY	FIXED COST	VARIABLE COST	YOUR ESTIMATE
One half of establishment costs		\$6.05	\$63.49	\$
Crop insurance			\$0.00	\$
Miscellaneous expenses			\$10.00	\$
Interest on preharvest variable costs (6 months @ 5.15%)			\$2.12	\$
HARVEST	QUANTITY	FIXED COST	VARIABLE COST	YOUR ESTIMATE
Mowed (3x)		\$16.50	\$13.20	\$
Raked (3x)		\$9.60	\$6.00	\$
Baled (3x) large round		\$24.60	\$15.90	\$
Hauled (3x)		\$8.69	\$13.82	\$
<b>TOTAL HARVEST COSTS</b>		<b>\$59.39</b>	<b>\$48.92</b>	<b>\$</b>
<b>Labor (hours per acre)</b>	1.14	\$14.00	\$15.96	\$
<b>Land (cash rent equivalent)</b>		\$219.00		\$
<b>Total costs</b>		<b>\$300.40</b>	<b>\$124.54</b>	<b>\$</b>
<b>Returns over variable cost</b>			<b>\$662.96</b>	<b>\$</b>
<b>Returns over total cost</b>			<b>\$362.96</b>	<b>\$</b>
<b>Return to land, labor, and management</b>			<b>\$597.53</b>	<b>\$</b>
<b>Return to land and management</b>			<b>\$581.57</b>	<b>\$</b>
<b>Return to management</b>			<b>\$362.57</b>	<b>\$</b>



## Estimated Organic Crop Production Costs in Iowa, 2010-2018\*

	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>CORN</b>									
Machinery	\$122.27	\$153.44	\$148.69	\$148.69	\$157.46	\$146.63	\$131.77	\$124.05	\$137.20
Seed, chemicals, etc.	151.57	179.40	201.25	192.17	172.04	179.86	164.22	136.05	140.76
Labor	15.51	16.36	16.50	17.27	18.33	18.33	18.33	18.33	19.74
Land	195.00	215.00	258.00	276.00	287.00	273.00	266.00	230.00	219.00
Total cost per acre	518.95	599.03	665.97	676.70	672.64	649.24	609.81	535.19	545.10
Assumed yield	153 bu	153 bu	153 bu	153 bu	153 bu	153 bu	153 bu	153 bu	153 bu
Total cost per bushel	\$3.39	\$3.92	\$4.35	\$4.42	\$4.40	\$4.24	\$3.99	\$3.50	\$3.56
Return to management	\$276.65	\$1,068.67	\$1,552.53	\$1,205.20	\$1,163.36	\$1,033.76	\$767.19	\$780.61	\$954.30
<b>SOYBEANS</b>									
Machinery	\$71.10	\$82.80	\$89.88	\$89.88	\$96.04	\$89.58	\$85.52	\$81.22	\$83.34
Seed, chemicals, etc.	50.00	44.88	45.13	56.75	62.70	61.80	59.90	58.80	60.75
Labor	23.32	24.59	24.80	25.97	27.56	27.56	27.56	27.56	29.68
Land	195.00	215.00	258.00	276.00	287.00	273.00	266.00	230.00	219.00
Total cost per acre	363.32	390.20	444.50	476.48	500.69	474.51	460.31	417.89	415.88
Assumed yield	40 bu	40 bu	40 bu	40 bu	40 bu	40 bu	40 bu	40 bu	40 bu
Total cost per bushel	\$9.08	\$9.75	\$11.11	\$11.91	\$12.52	\$11.86	\$11.51	\$10.45	\$10.40
Return to management	\$422.28	\$437.80	\$637.50	\$655.52	\$654.71	\$506.49	\$346.29	\$346.91	\$372.92
<b>OATS-ALFALFA</b>									
One half of est. costs	\$62.77	\$58.63	\$58.60	\$61.32	\$67.93	\$72.58	\$74.01	\$73.61	\$69.54
Harvest machinery	64.50	83.90	92.56	92.56	95.38	88.98	85.12	70.92	72.58
Labor	12.98	13.69	13.81	14.46	15.34	15.34	15.34	15.34	16.52
Land	195.00	215.00	258.00	276.00	287.00	273.00	266.00	230.00	219.00
Total cost per acre	335.25	371.22	422.97	444.34	465.65	449.90	440.47	389.87	377.64
Assumed yield	80 bu	80 bu	80 bu	80 bu	80 bu	80 bu	80 bu	80 bu	80 bu
Return to management	\$127.76	\$309.79	\$394.03	\$383.67	\$223.36	\$153.11	\$64.53	\$154.13	\$221.36
<b>ALFALFA HAY, ANNUAL PRODUCTION, LARGE ROUND BALES</b>									
One half of established costs	\$62.77	\$58.63	\$58.60	\$61.32	\$67.93	\$72.58	\$74.01	\$73.61	\$69.54
Harvest machinery	80.25	119.70	130.88	130.88	134.70	125.67	119.43	105.63	108.30
Labor	12.54	13.22	13.34	13.97	14.82	14.82	14.82	14.82	15.96
Land	195.00	215.00	258.00	276.00	287.00	273.00	266.00	230.00	219.00
Total cost per acre	361.73	417.42	471.59	492.89	516.25	498.00	486.27	436.20	424.93
Assumed yield	4.5 ton	4.5 ton	4.5 ton	4.5 ton	4.5 ton	4.5 ton	4.5 ton	4.5 ton	4.5 ton
Total cost per ton	\$80.38	\$92.76	\$104.80	\$109.53	\$114.72	\$110.67	\$108.06	\$96.93	\$94.43
Return to management	\$290.78	\$392.59	\$720.91	\$564.62	\$293.76	\$154.51	\$98.73	\$306.30	\$362.57

\*Input costs come from annual updates of [Estimated Costs of Crop Production](#), FM 1712, Ames: Iowa State University Extension and Outreach.

Updated by Craig Chase, program manager, ISU Extension and Outreach Farm, Food and Enterprise Development Program; Kathleen Delate, Iowa State professor of agronomy and horticulture; and Olivia Hanlon, undergraduate research assistant. Last revision by Craig Chase, Alice Topaloff, and Kathleen Delate, FM 1876, 2016.

Iowa State University Extension and Outreach does not discriminate on the basis of age, disability, ethnicity, gender identity, genetic information, marital status, national origin, pregnancy, race, color, religion, sex, sexual orientation, socioeconomic status, or status as a U.S. veteran, or other protected classes. (Not all prohibited bases apply to all programs.) Inquiries regarding non-discrimination policies may be directed to the Diversity Advisor, 2150 Beardshear Hall, 515 Morrill Road, Ames, Iowa 50011, 515-294-1482, [extdiversity@iastate.edu](mailto:extdiversity@iastate.edu). All other inquiries may be directed to 800-262-3804.