

## **Economics of Producing Industrial Hemp in New York State: Costs and Returns, 2019 Budgets**

*Farm business owners can use 2019 budgets to make decisions regarding industrial hemp's place in their cropping systems.*

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For a detailed reporting of this work, please see the team's website <[nwnyteam.cce.cornell.edu](http://nwnyteam.cce.cornell.edu)>, click on "Business", click on "Economic Analysis".

### **Acknowledgements**

Work to date has benefitted from

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### **Summary**

- Variable costs of production estimates for 2019 are \$390, \$321, and \$296 per acre for industrial hemp for fiber only, seed (grain) only, and dual purpose fiber and seed (grain), respectively.
- Total costs of production estimates for 2019 are \$546, \$486, and \$491 per acre for industrial hemp for fiber only, seed (grain) only, and dual purpose fiber and seed (grain), respectively.
- Returns above total costs estimates for 2019 are \$248, \$624, and \$867 per acre for industrial hemp for fiber only, seed (grain) only, and dual purpose fiber and seed (grain), respectively.

### **Industrial Hemp Production Budgets, New York, 2019**

Enterprise budgets comprise: value of production, revenue; costs of production (variable and fixed inputs); and returns, for example, return above variable costs, and return above total costs. Estimates of individual variable, and fixed costs differ by system, while total costs of producing industrial hemp are \$546, \$486, and \$491 per acre for industrial hemp for fiber only, seed (grain) only, and dual purpose fiber and seed (grain), respectively (Table 1). Seeds & Plants costs vary due to differences in seeding rates by scenario with the dual purpose fiber and seed (grain) scenario having the lowest seeding rate (about 20 lbs. per acre) followed by seed (grain) production only (40 lbs. per acre) followed by fiber only (80 lbs. per acre). Costs for Sprays & Other Crop Inputs are highest for the scenarios with seed production due in part to the costs associated with cleaning and drying the grain. Labor and machinery costs (variable and fixed) vary among scenarios due to differences in harvesting tasks, including equipment required.

Table 1. Value of production, variable, fixed and total costs, and returns, dollars per acre, by industrial hemp production scenario, conventional tillage system, New York, 2019 budgets.

<b>Budget Items</b>	<b>Hemp Fiber Production &amp; Harvest</b>	<b>Hemp Seed (Grain) Production &amp; Harvest</b>	<b>Hemp Fiber &amp; Seed (Grain) Production &amp; Harvest</b>
		--- \$ per Acre ---	
<b>Value of Production</b>			
Fiber	794.00		248.00
Seed (Grain)		1,110.00	1,110.00
<b>Total Value</b>	794.00	1,110.00	1,358.00
<b>Costs of Production</b>			
<b>Variable Inputs</b>			
Fertilizers & Lime	81.60	81.60	81.60
Seeds & Plants	209.43	104.72	48.48
Sprays & Other Crop Inputs	17.67	62.35	39.61
Labor	37.41	15.23	46.05
Repair & Maintenance			
Tractors	3.60	18.73	20.66
Equipment	13.63	13.24	23.35
Fuel & Lube	17.17	17.41	28.76
Interest on Operating Capital	9.51	7.83	7.21
<b>Variable Costs Total</b>	390.04	321.12	295.72
<b>Fixed Inputs</b>			
Tractors	23.16	40.18	52.84
Equipment	30.67	22.40	40.88
Land Charge	101.88	101.88	101.88
Value of Operator & Family Management			
<b>Fixed Costs Total</b>	155.71	164.46	195.59
<b>Total Costs</b>	545.74	485.58	491.31
<b>Returns</b>			
<b>Returns above Variable Costs</b>	403.96	788.88	1,062.28
<b>Returns above Total Costs</b>	248.26	624.42	866.69

Notes:

- Reported totals may not equal the sum of individual items due to rounding.
- Expected value of hemp fiber production: \$0.10 per pound; expected value of hemp seed (grain) production: \$1.10 per pound
- Expected yield, hemp fiber production, fiber production and harvest only scenario: 3.97 tons per acre; expected yield, hemp fiber production, dual purpose fiber and seed (grain) production and harvest scenario: 1.24 tons per acre; expected yield, hemp seed (grain) production: 1,000 pounds per acre
- Revenues, costs and returns reflect expected 2019 price levels.
- Fertilizers & Lime costs reflect Cornell University agronomists' recommendations regarding N and Purdue University regarding phosphorus and potash.
- Seeds & Plants costs vary by scenario with respect to seeding rates, but are constant with respect to seed price per pound.
- Sprays & Other Crop Inputs include crop professional fees, machinery hire rent & lease, and others. Estimates reflect no spray inputs, since no pesticides are registered for use on industrial hemp in the United States.
- Labor costs reflect labor from hired and, or family and, or owner/operator sources.
- Machinery related variable and fixed costs per Lazarus. 2018. <[z.umn.edu/machdata](http://z.umn.edu/machdata)>
- This analysis excludes a charge for management inputs.
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