

# Production Costs Update for Organic Gala and Honeycrisp Apples

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Annual Meetings

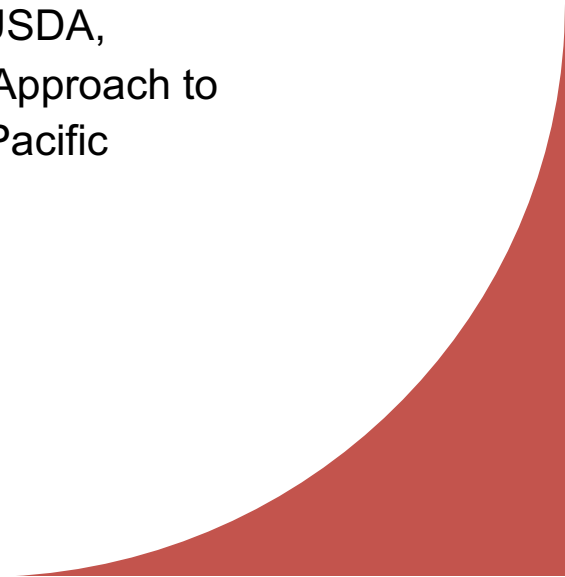
December 6, 2023



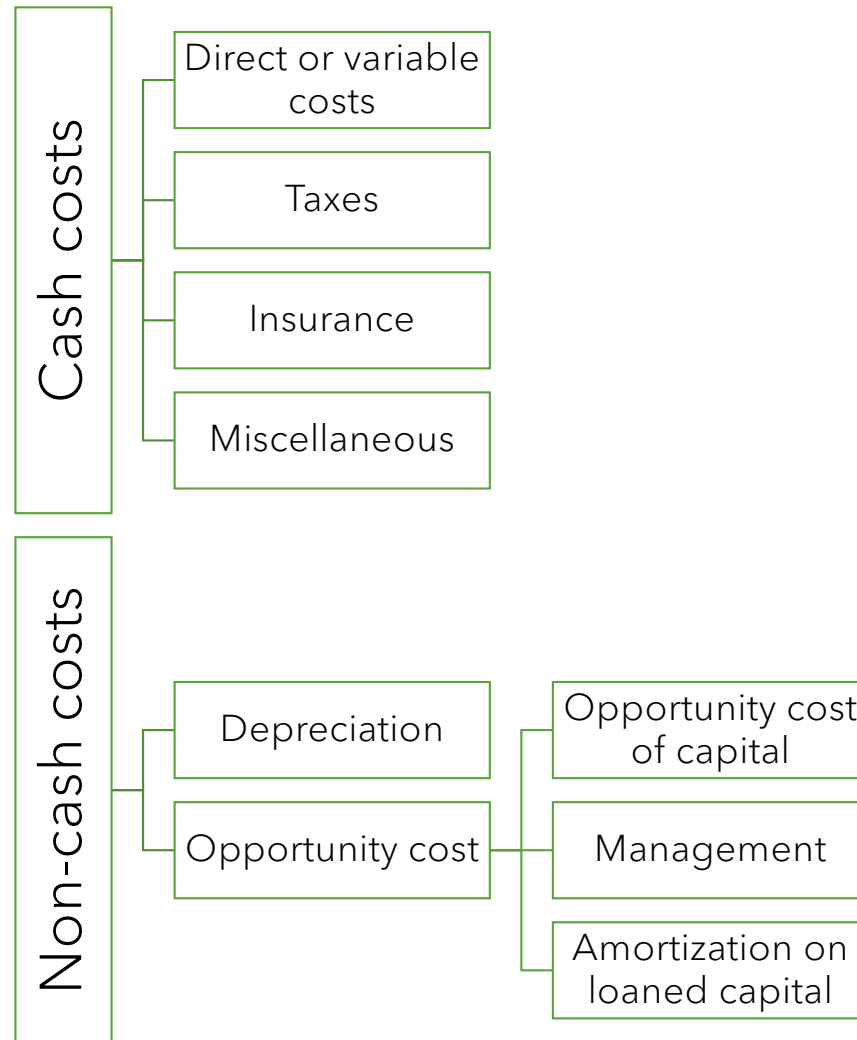
# Acknowledgement

The authors acknowledge the information provided by a group of anonymous organic Gala apple growers and packinghouse owners-operators, pesticide consultants, and WSU Extension educators.

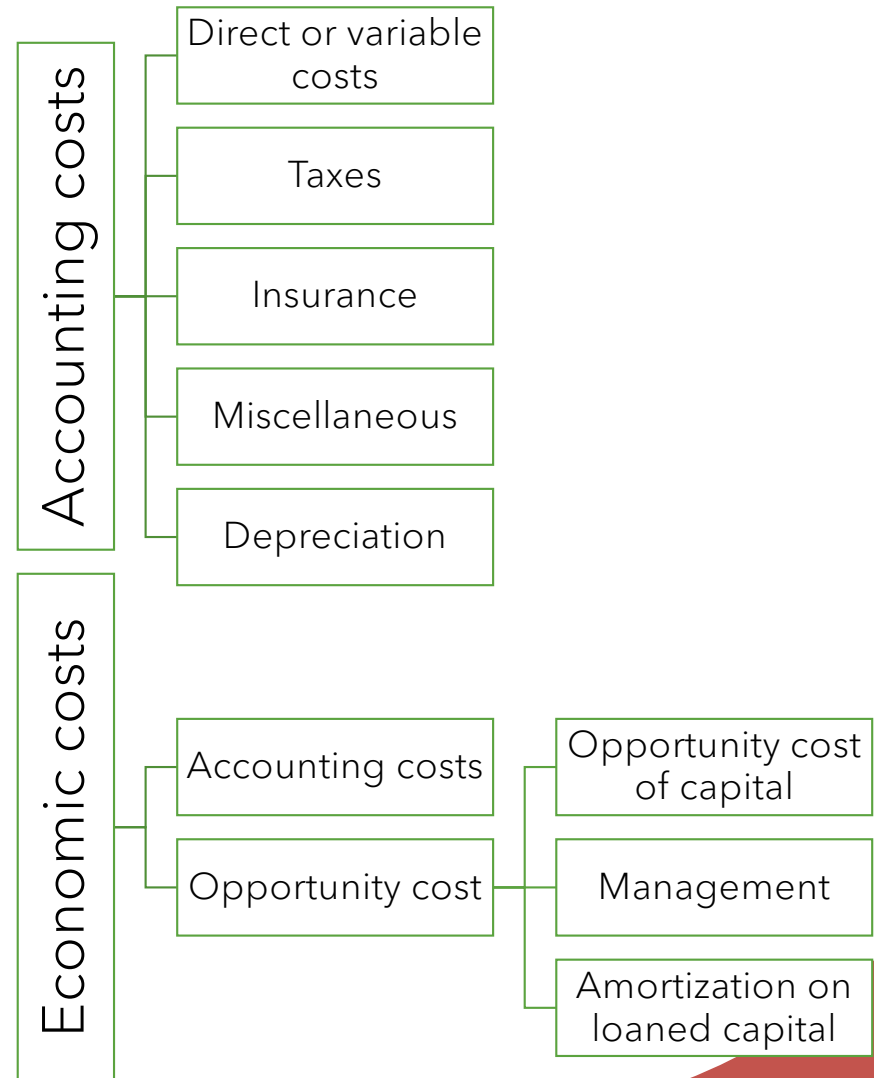
Funding: U.S. Department of Agriculture, National Institute of Food and Agriculture, Organic Agriculture Research and Extension Initiative (USDA, NIFA, OREI). Award number 2021-51300-34913: A Systems-Based Approach to Enhance Quality, Safety, and Shelf-Life of Organic Tree Fruit in the Pacific Northwest



# Production costs



**Net returns = Total returns -  
Total costs**



# Production Costs

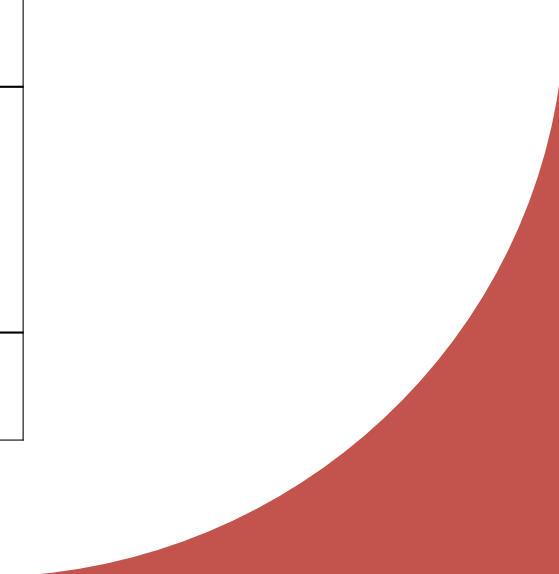
- Profits are not always  $> 0$   
Yield and price variability
- Short-term economic situation  
Variable costs and cash costs
- Long-term economic situation  
Cash and non-cash costs



Photo credit: Good Fruit Grower.

# WSU Apple Enterprise Budgets

Year	Enterprise budget
2009	Conventional Gala
2010	Organic Gala
2012	Conventional Honeycrisp Conventional Red Delicious
2014	Conventional Gala Conventional Red Delicious Organic Gala Organic Red Delicious
2019	Conventional Gala Conventional Fuji Conventional Granny Conventional Honeycrisp Conventional Cripps Pink
2022	Organic Gala Organic Honeycrisp



# How to find WSU Apple Enterprise Budgets

← → ↻ google.com/search?q=WSU+Crop+enterprise+budgets&oq=WSU+crop+enterprise+budgets&aqs=chrome.0.69i59j69i60.913

Apps MyDashboard Microsoft Office H... Blackboard Learn My Meetings - Zoom Cengage Contact Support Kennydal

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About 109,000 results (0.50 seconds)

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[ses.wsu.edu > enterprise\\_budgets](https://ses.wsu.edu/enterprise_budgets) ▼

The purposes of these **budgets** are to estimate the costs and returns from producing these **crops** for research and policy purposes and to provide producers and their credit providers with a tool to use in **enterprise** selection and financing.

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Washington **Enterprise Budgets** for Crop Commodities ... Alfalfa, 1996 Alfalfa Seed **Enterprise Budget**, Walla Walla County, Washington (EB1375), Gary, Willett ...

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## Crop Enterprise Budgets

Washington State University has a history of developing and publishing enterprise budgets for many of the major crops grown throughout Washington State. The purposes of these budgets are to estimate the costs and returns from producing these crops for research and policy purposes and to provide producers and their credit providers with a tool to use in enterprise selection and financing.

### Washington Enterprise Budgets for Crop Commodities

Search:

Commodity	Title	Author	Date	Link
Alfalfa	2012 Irrigated Alfalfa Hay Budget Under Center Pivot in the Columbia Basin (FS133E)	Norberg, Neibergs	2014	pdf excel
Alfalfa	Organic Alfalfa Management Guide (Feb 2009) (EB2039E)	Fuerst, Koenig, Kugler, Painter, Stannard, Goldberger	2009	pdf
Alfalfa	Spreadsheet for Dryland Organic Alfalfa Production	Painter	2009	pdf excel
Alfalfa	2009 Costs of Producing Alfalfa Hay	Hinman,	2009	pdf

### Financial Analysis & Record Keeping


Careful record keeping and some basic financial analysis can take some of the guesswork and stress out of being a business manager:

- Motivation - Why get excited about financial analysis?
- Analyzing your farm's financial performance - Cash flow statements
- Investment analysis - Different evaluation methods
- Amortization of loans - Making them cash flow

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### Washington Enterprise Budgets for Crop Commodities

Commodity	Title	Author	Date	Link
Apples	2015 Cost Estimates of Establishing and Producing Specialty Cider Apples in	Galinato, Miles	2017	pdf excel
Apples	Feasibility of Different Harvest Methods for Cider Apples: Case Study for Western Washington (TB32)	Galinato, Miles, Alexander	2016	pdf
Apples	TB32 Appendix A. Hand Harvested Cider Apples (spreadsheet)	Galinato, Miles, Alexander	2016	excel
Apples	TB32 Appendix B. Mechanically Harvested Cider Apples (spreadsheet)	Galinato, Miles, Alexander	2016	excel

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# 2022 WSU Enterprise Budgets - Organic Gala and Organic Honeycrisp

## 2022 COST ESTIMATES OF PRODUCING AND PACKING ORGANIC GALA APPLES IN WASHINGTON



## 2022 COST ESTIMATES OF PRODUCING AND PACKING ORGANIC HONEYCRISP APPLES IN WASHINGTON



### Preface

The results presented in this WSU publication serve as a general guide for evaluating the feasibility of producing organic Gala apples in Washington in 2022. The primary use of this publication is in identifying inputs, costs, and yields considered typical of well-managed organic Gala apple orchards. This publication is not intended to be a definitive guide to production practices, but it is intended to be helpful in estimating the physical and financial requirements of comparable plantings. Specific budget assumptions were adopted for this study, but these assumptions may not represent the conditions in all production and marketing situations since production costs and returns vary across orchard operations, depending on the following factors:

- Capital, labor, and natural resources
- Crop yields
- Type and size of machinery, irrigation, and frost control systems
- Input prices
- Cultural practices
- Organic Gala prices
- Orchard size
- Management skills
- Biotic and abiotic orchard variables

Cost estimations in the enterprise budget also vary depending on its intended use. To avoid drawing unwarranted conclusions for any particular orchard, readers must closely examine the assumptions made in this guide and then adjust the costs, returns, or both as appropriate for their own orchard operation.

### Organic Gala Production in Washington State

### Preface

The results presented in this WSU publication serve as a general guide for evaluating the feasibility of producing organic Honeycrisp apples in Washington in 2022. The primary use of this publication is in identifying inputs, costs, and yields considered typical of well-managed organic Honeycrisp apple orchards. This publication is not intended to be a definitive guide to production practices, but it is intended to be helpful in estimating the physical and financial requirements of comparable plantings. Specific budget assumptions were adopted for this study, but these assumptions may not represent the conditions in all production and marketing situations since production costs and returns vary across orchard operations, depending on the following factors:

- Capital, labor, and natural resources
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- Cultural practices
- Organic Honeycrisp prices
- Orchard size
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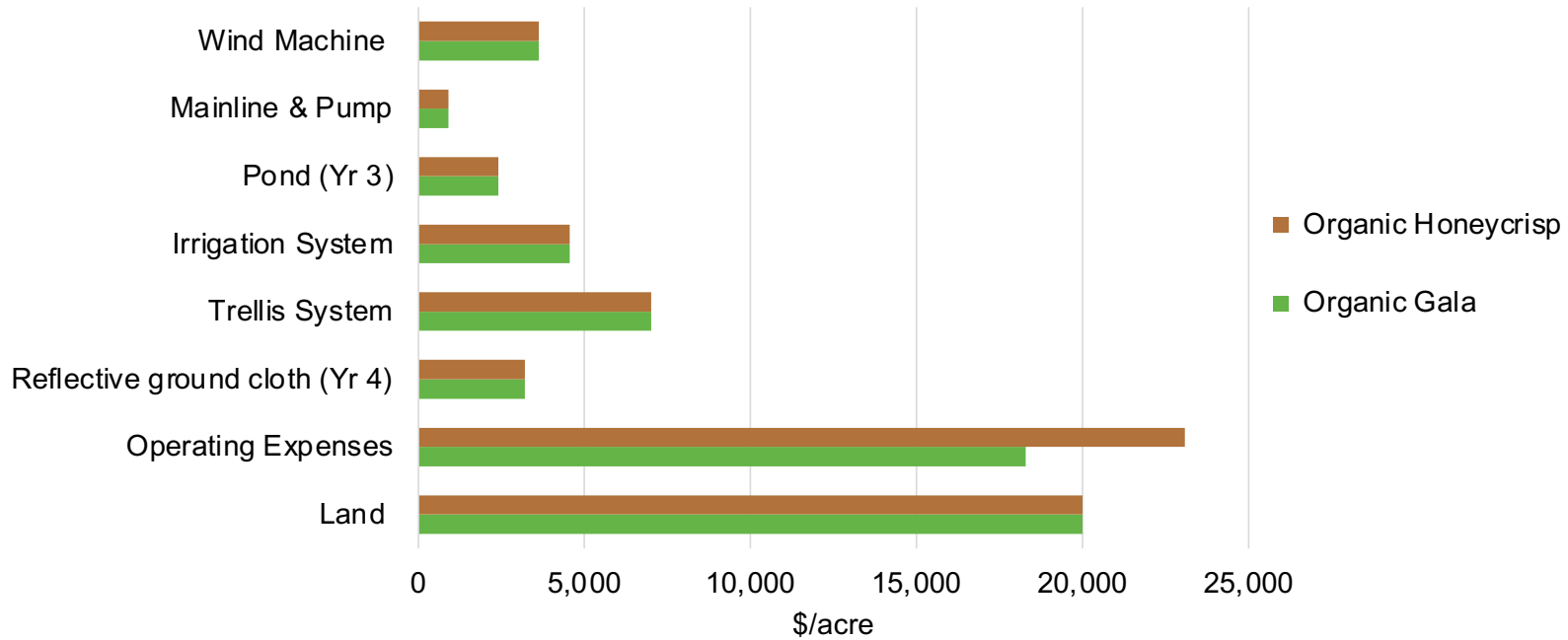
Cost estimations in the enterprise budget also vary depending on its intended use. To avoid drawing unwarranted conclusions for any particular orchard, readers must closely examine the assumptions made in this guide and then adjust the costs, returns, or both as appropriate for their own orchard operation.

### Organic Honeycrisp Production in Washington State

# WSU Budgets - Assumptions

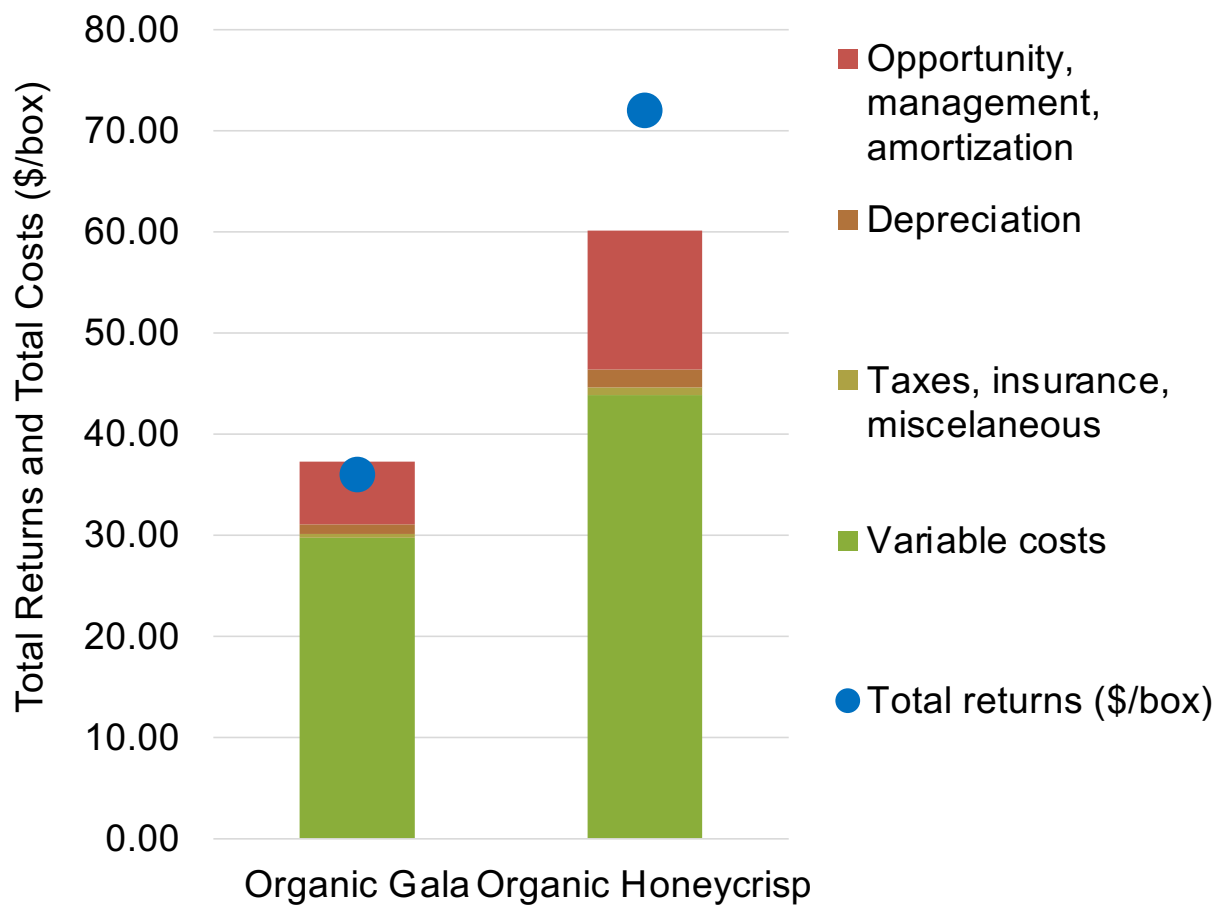
	Organic Gala	Organic Honeycrisp
Farm size (acre)	300	300
Productive block size (acre)	55	33
Gross yield full production (bin/acre)	80	65
Bin size (lb/bin)	950	690
Packout (box/bin)	19	13
FOB price (\$/40-lb box)	36	72
In-row spacing (feet)	4	3
Bet. row spacing (feet)	10	10
Root stock	Geneva series	Geneva series
Life of planting (years)	20	15
Tree density (trees/acre)	1,089	1,452
Trellis system	Spindle trellis system	
Block architecture	Randomly trained w/18" radius from tree center	

# Capital Requirements



	Organic Gala	Organic Honeycrisp
Total Requirements (\$/acre)	59,958	64,761

# Total Costs and Returns - Summary



Why in \$/box?

	Organic Gala	Organic Honeycrisp
Productive block size (acre)	55	33
Gross yield full production (bin/acre)	80	65
<b>Bin size (lb/bin)</b>	<b>950</b>	<b>690</b>
Packout (box/bin)	19	13
FOB price (\$/40-lb box)	36	72

## Cost categories:

1. Variable
2. Cash
3. Cash + Depreciation (Accounting cost)
4. Total Cost (Economic cost)

Organic Gala (\$/acre)	
Variable	36,180
Cash	36,650
Cash + depreciation (Accounting costs)	37,773
Total (Economic costs)	45,389

Organic Honeycrisp (\$/acre)	
Variable	27,824
Cash	28,294
Cash + depreciation (Accounting costs)	29,416
Total (Economic costs)	38,114

## Total Costs and Returns

	Total production (bins/acre)	Packout (%)	Packout (box/bin)	FOB Price (\$/box)
Organic Gala	80	80	19	36
Organic Honeycrisp	65	75	13	72

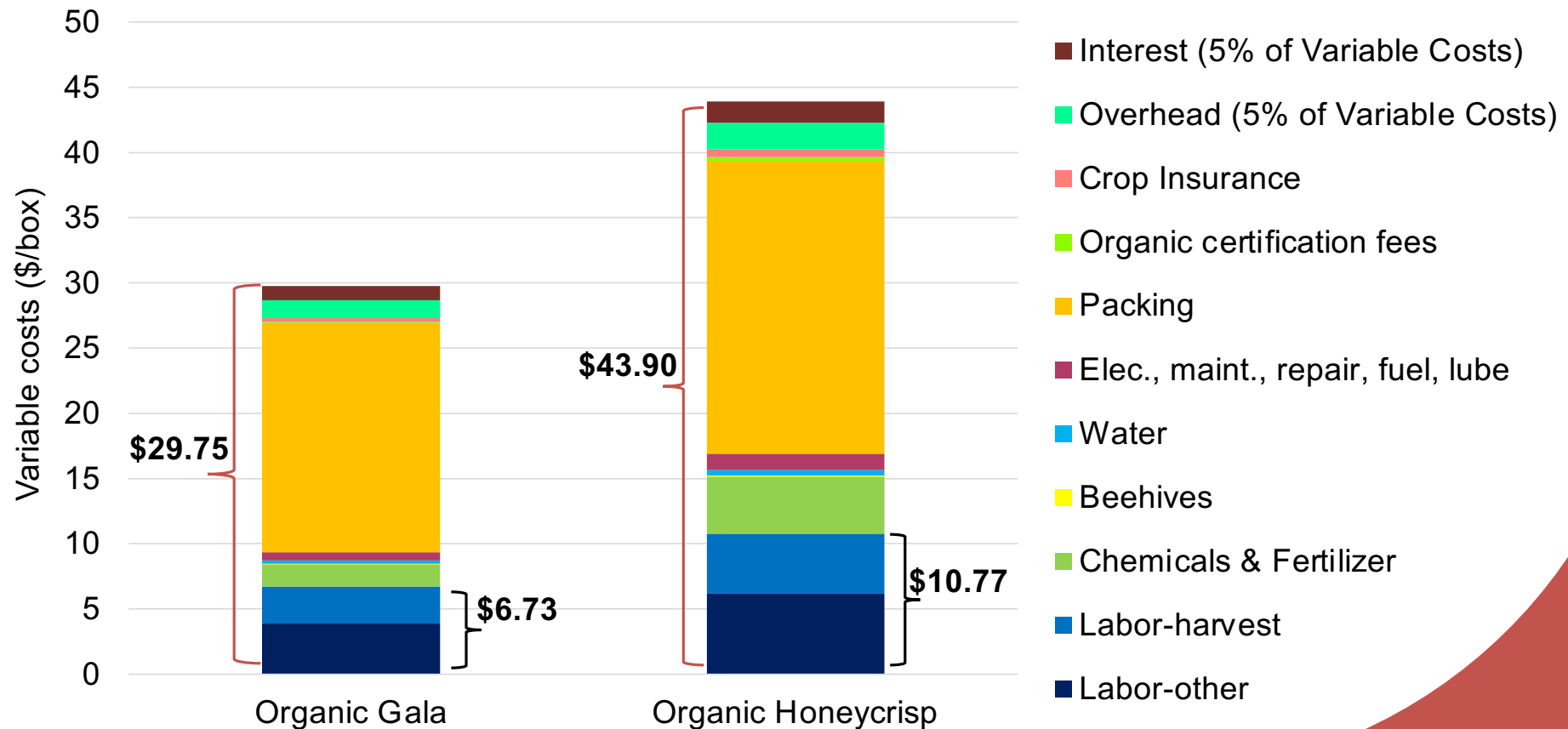
Total returns (\$/acre)	Total costs (Economic costs) (\$/acre)	<b>ECONOMIC PROFITS (\$/acre)</b>
43,776	45,389	<b>-1,613</b>
45,630	38,114	<b>7,516</b>

	Total production (bins/acre)	Packout (%)	Packout (box/bin)	FOB Price (\$/box)
Organic Gala	80	80	19	36
Organic Honeycrisp	65	75	13	72

Total returns (\$/acre)	Costs (Accounting costs) (\$/acre)	<b>ACCOUNTING PROFITS (\$/acre)</b>
43,776	37,773	<b>6,003</b>
45,630	29,416	<b>16,214</b>

# Variable Costs

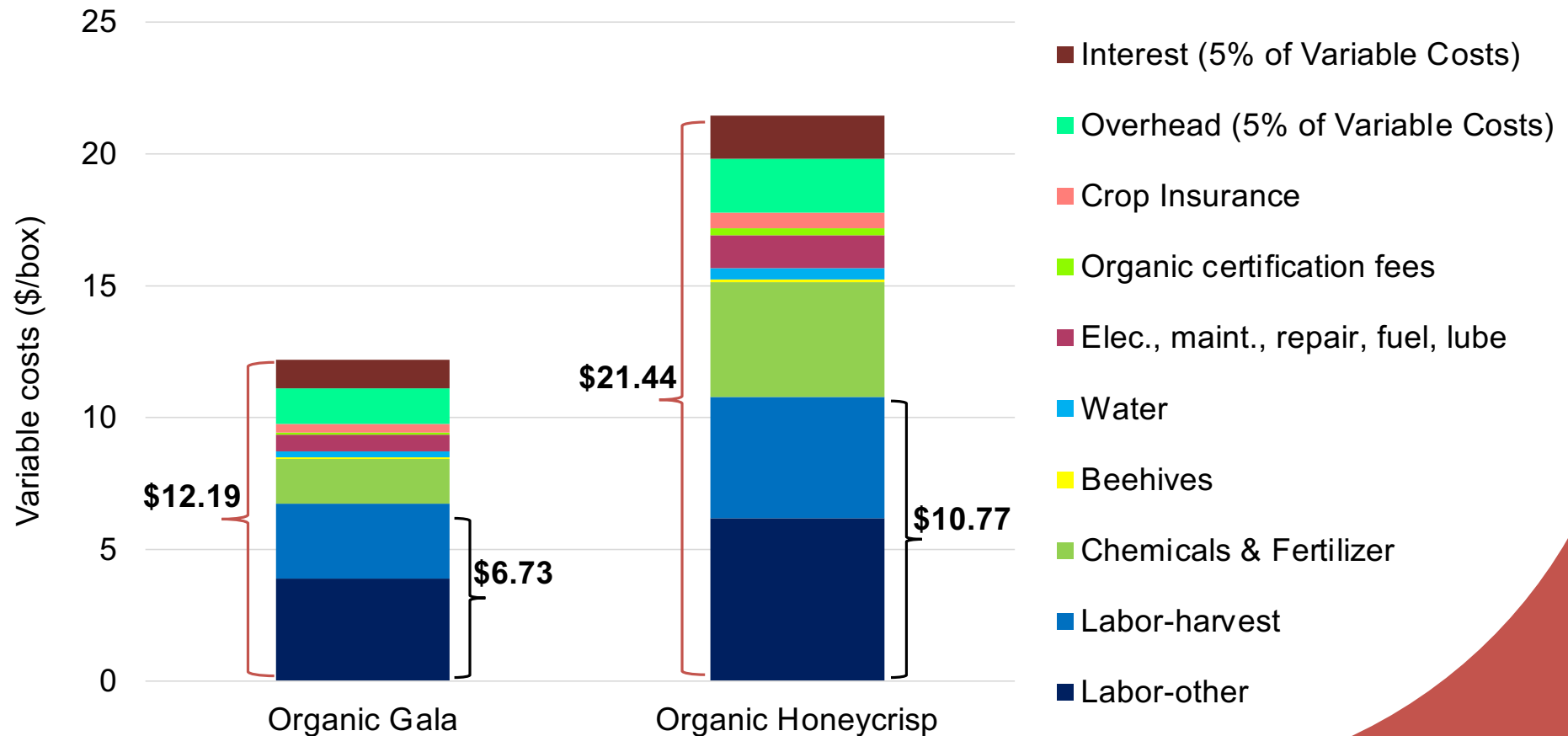
How do labor costs compare to total variable costs (packing costs included)?





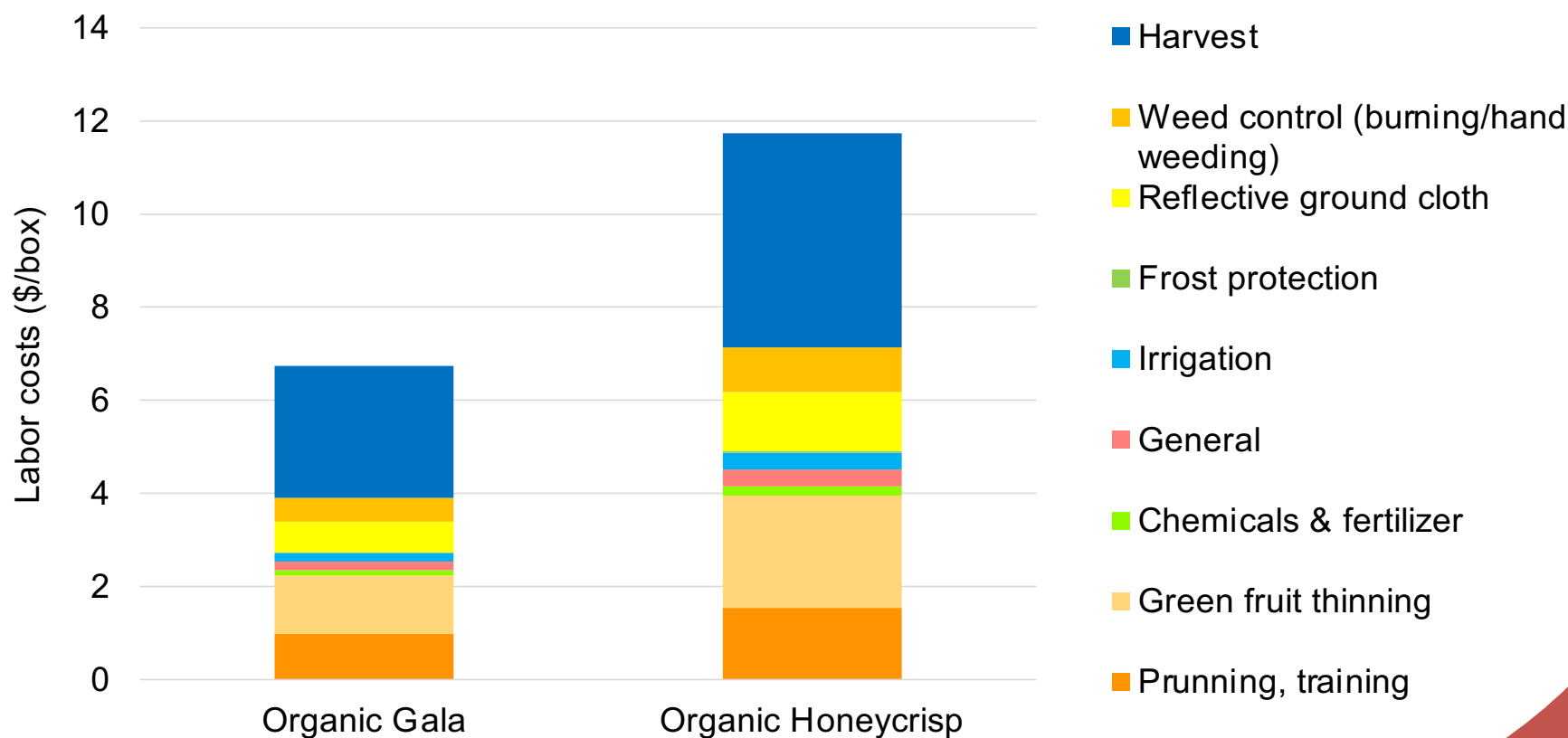
# Variable Costs

How do labor costs compare to total variable costs (packing costs excluded)?



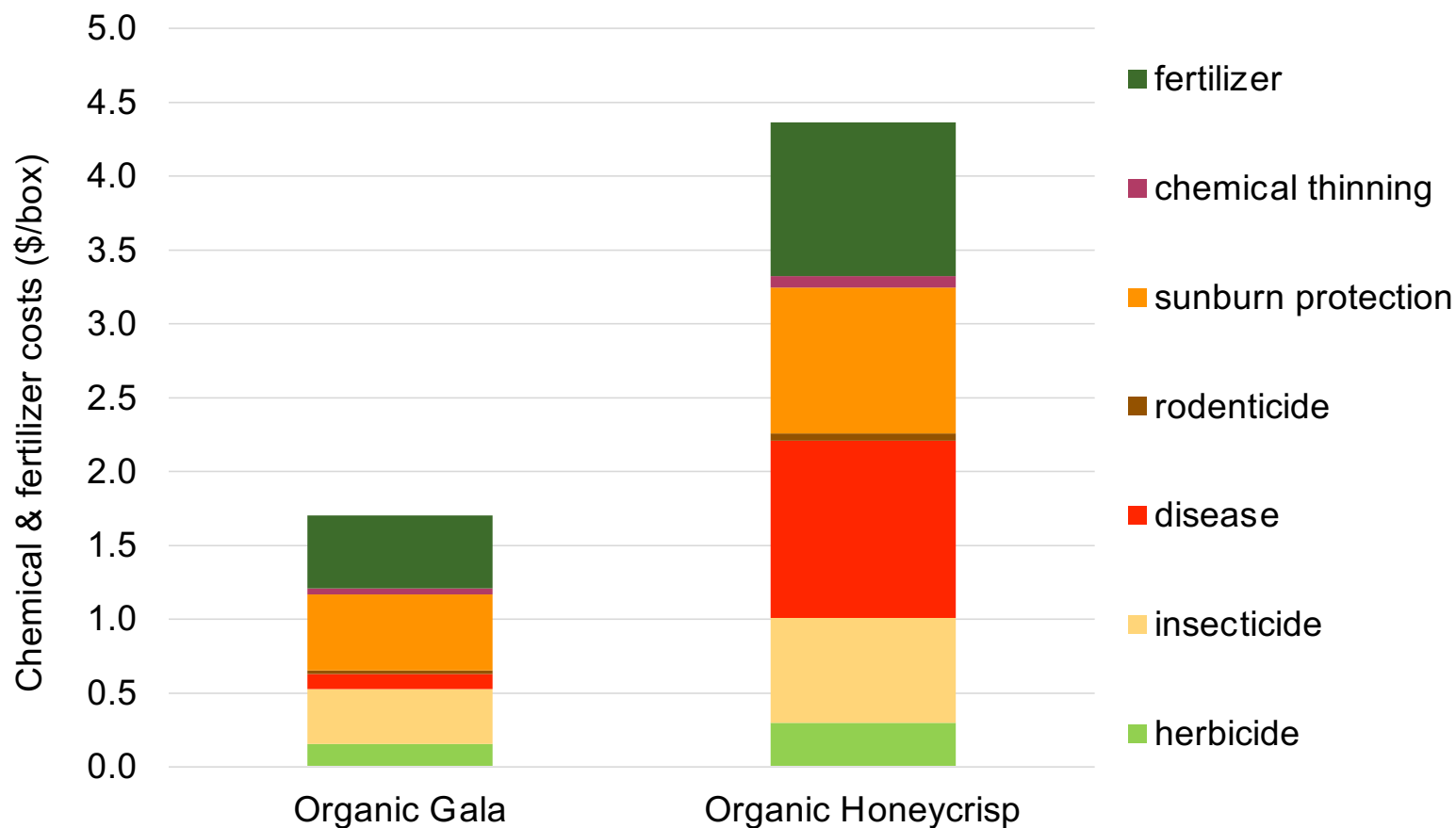
# Labor Costs (in the field only)

How are labor costs distributed across various field activities?



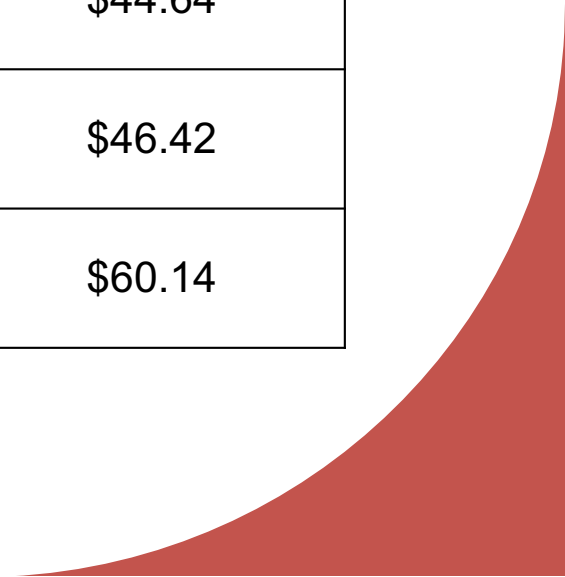
# Chemicals and Fertilizer

How are chemical costs distributed across different types?

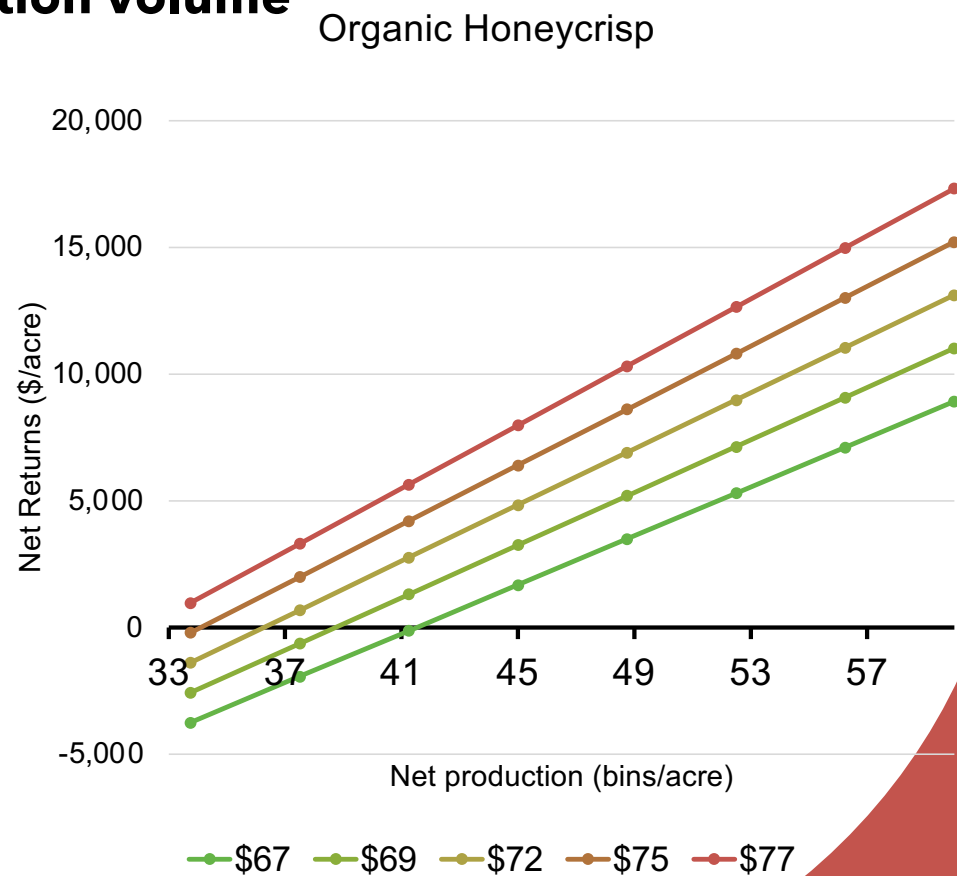
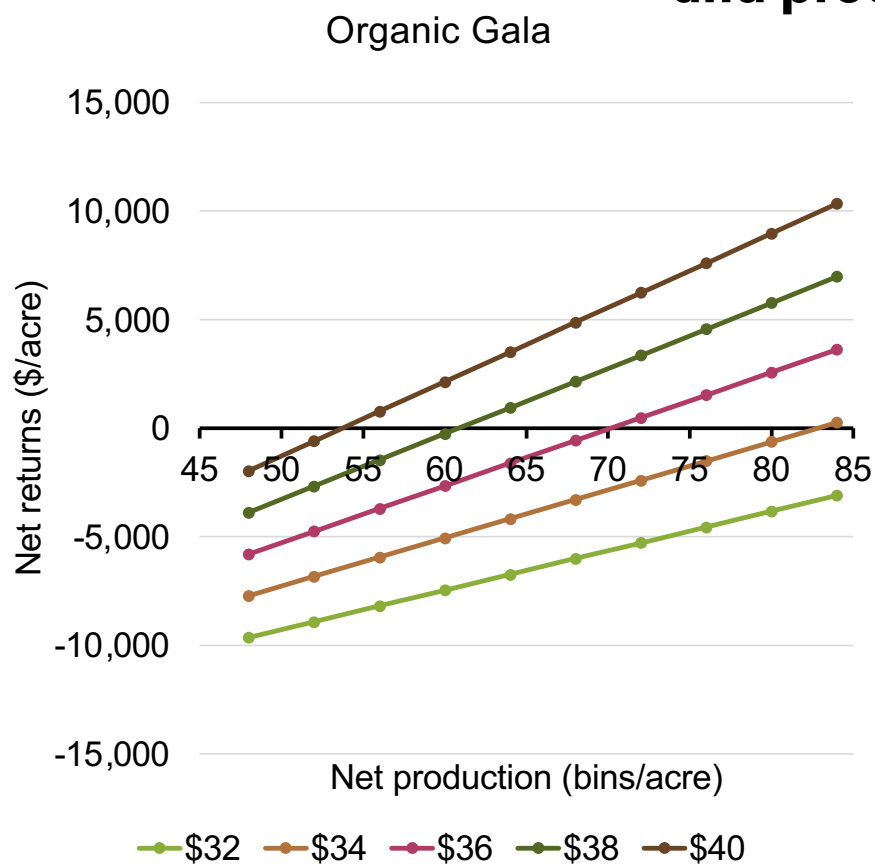


## Break-even Prices (\$/box)

Cost category	Organic Gala	Organic Honeycrisp
Variable	\$29.75	\$43.90
Cash	\$30.14	\$44.64
Cash + depreciation (Accounting costs)	\$31.06	\$46.42
Total (Economic costs)	\$37.33	\$60.14



## Sensitivity Analyses: Net returns at different FOB price (\$/box) and production volume



## Grower receives the residual price of the supply chain.

	Price (\$/lb)	% of the price
Consumer price per pound at the retail market (Example: Organic Gala apple)	2.99	100
Retailer	2.06	69
Packinghouse + Marketer	0.44	15
Grower	0.49	16

2022 Food dollar: Marketing bill (nominal)



Source: <https://www.ers.usda.gov/data-products/food-dollar-series/documentation>

## Concluding Remarks

- Profits will not be  $> 0$  every year
  - Price fluctuation
  - Yield fluctuation
- Labor is the largest cost in the field.
- Break-even prices (\$/box):

Cost category	Organic Gala	Organic Honeycrisp
Variable – Shutdown price	\$29.75	\$43.90
Cash + depreciation (Accounting costs)	\$31.06	\$46.42
Total (Economic costs)	\$37.33	\$60.14

## **Contacts:**

R. Karina Gallardo

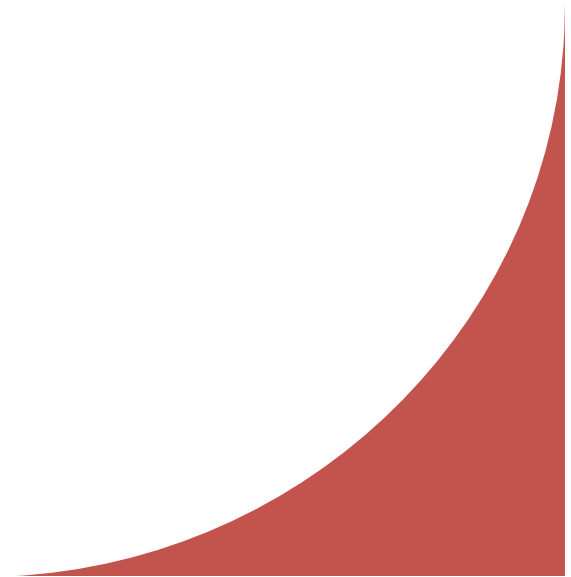
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## **Webpage:**

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