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MICHIGAN PEACH COST OF PRODUCTION 2024

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EXECUTIVE SUMMARY

While down from 2011, Michigan peach acreage is currently holding steady at about 2,250 bearing acres, with processing peach varieties making up about 25% of the total. Peaches continue to be an important part of growers' crop portfolios, helping to spread the cost of tree fruit assets over a greater number of productive acres, and providing work for laborers to fill in summer gaps.

As of 2024, the costs of establishing peach orchards are estimated to be $9,167 per acre for processor peach orchards and $10,107 for fresh peach orchards (though more if high density approaches are taken). The ongoing costs of production, including operating costs, harvest costs, land control and an allocation for establishment costs, total $5,355 per acre for processor peach production and $7,587 per acre for fresh production. Operating costs are similar for fresh and processor peach production, but harvest costs are substantially higher for fresh.

About 75% of the total costs of production are variable, making Michigan peach production susceptible to input and labor cost shocks. For example, labor makes up 40% of fresh peach and 45% of processor peach production costs. A 10% increase in labor prices would therefore result in a 4% or 4.5% increase in total costs, respectively.

For fresh peach production, we focused on two categories. The first is farm-packed peaches, sold wholesale directly to retailers or farm market businesses. The profits for this category at current yields and prices are strong but rely on substantial labor resources and marketing acumen. The second category is peaches for sale to packers. Revenues at current prices for this category do cover economic costs and provide some level of profits, though not as strong as for direct marketing. Working with packers provides numerous benefits, however, including generating income for fruit produced beyond what farms can market themselves. Many farms have a mix of these two categories, so we provide related cost and profit analysis in the main report.

Processor peach production revenues are, at current yields and prices, sufficient to cover operating, harvest and ongoing overhead costs such as crop insurance and food safety expenses. However, processor peach revenues are not currently generating profits when allocations are made for the economic costs of establishment and land control (rent or land payments).

The budgets we developed for Michigan peach production are averages based on focus groups and numerous growers' input. Adjustments to the budgets should be tailored to a specific farm's circumstances. To facilitate this, tables are broken down into cost categories, and sensitivity analyses are included based on the different yields and prices that a grower might experience.

Cover photo by Derek Plotkowski, MSU Extension

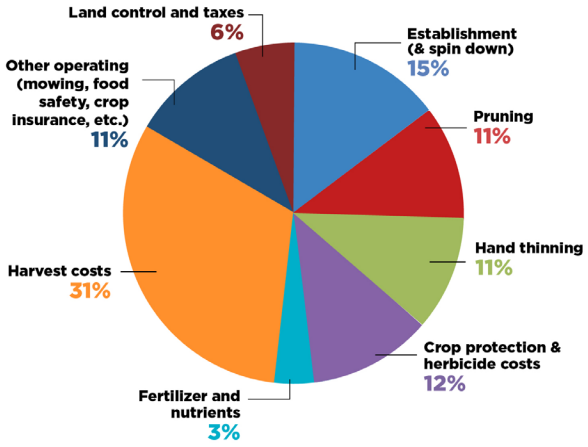


Figure 1. Costs of fresh peach production in Michigan, as a percentage by category

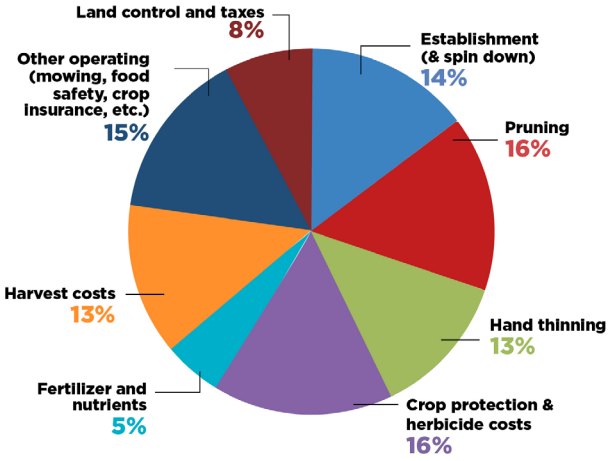


Figure 2. Costs of processor peach production in Michigan, as a percentage by category

INTRODUCTION

According to the 2022 Agricultural Census for Michigan, there are about 2,900 acres of peaches planted in Michigan, about 2,250 of which are bearing acres (NASS 2024(a)). Overall acreage numbers have dropped from the 4,000 acres that existed a decade and a half ago, and similarly processor peaches ("cling" varieties) have dropped from about 1,420 acres ten years ago to 720 acres in 2022 (NASS, 2024(b); NASS, 2020). Currently, 75% of bearing acreage is made up of fresh peaches, and the other 25% is processor-oriented production. However, the recently released Michigan Fruit Inventory shows 260 acres were planted from 2020 to 2022, with growers intending to plant 230 more acres and take out only 100 acres (NASS 2024(b)). At such a replacement rate, these current reports suggest that Michigan peach acreage is likely to hold steady for the near future.

Most peach orchards are found along the coast of Lake Michigan, with a heavy concentration in the southwest part of the state and a smaller acreage in the southeast region. However, a substantial number of fresh peaches are grown in southeast Michigan, with growers often selling direct to consumers. Processor peach production (often referred to as 'cling' peaches in reference to the pits) is concentrated in west central Michigan, with some growers in southwest Michigan also producing cling varieties.

Peaches are often raised on some of a farm's best fruit sites, as cold air drainage is important to prevent early freeze-outs in the spring. Peach tree roots like sandy, well-drained soil, and there are few rootstock options to help them withstand heavier soils. As a result, peaches sometimes compete with cherry tree and wine grape sites. A good peach site is often likely to stay a peach site, being replanted after cover cropping for a couple of years.

The density of peach orchards (the number of trees per acre) is getting higher on average, though not as intensely so as for apples. A common orchard density now is 9 feet between trees and 18 feet between rows. Previously, 12 feet by 20 feet was more common. This study uses an assumption for fresh peach density of 9 feet by 18 feet (270 trees per acre) and processor peach density of 12 feet by 16 feet.

Most trees are free standing and pruned with the open center methods. There are, however, a significant number of trees planted into higher density training systems, some of which are trellised. These include the palmette system and the UFO system, which can obtain yields at nearly double the average. Higher density orchards do require more investment up front, and increased amounts of summer pruning are needed to help keep trees in their space.

Peaches are self-pollinated and therefore do not need to have varieties staggered throughout the orchard, as apples and sweet cherries do. Obtaining high quality trees from nurseries continues to be an issue for many growers, but there are numerous fresh cultivars available for peach production. Red Haven remains a well-known variety name, but there are many other flavorful varieties that will ripen at different times during the season. Early ripening varieties, however, tend to have greater challenges with split pits. For processing varieties, there are fewer options, but Venture has been a strong performer for growers.

Peach tree orchards have a relatively short life compared to other tree fruit. Growers consider the lifespan to be anywhere from as little as 10 years to as much as 20 years. Note that an extremely hard winter can reduce an orchard's life substantially, as peaches are not as cold tolerant as many other types of tree fruit.

Peaches are very labor intensive. In addition to pruning and hand-harvesting tasks, there is a need to thin the fruit early in the summer, in order to produce peaches of marketable size. While some mechanical and chemical options are available, they are currently in the testing phase. For now, most acreage is hand-thinned, which is an expensive process requiring many laborers at once. However, thinning and other peach cultural tasks do provide tasks to help keep crews busy in between other production such as cherries and apples.

Harvest starts in mid-July and continues as late as mid-September. Fresh harvest entails three to five pickings per block to allow peaches to properly ripen. Markets for fresh peaches include farm-packed wholesale (sold to neighboring farm market businesses and local retailers) and packinghouses that sell to regional supermarkets. This study assumes that a grower engaged in direct-to-consumer marketing would essentially purchase peaches from themselves, at the farm-packed for direct wholesale/bulk price level. With processor peaches, there are generally only two or three pickings per year. Processing markets are more limited, with one prominent buyer taking much of Michigan's processing peaches.

The most recent Michigan peach enterprise budget was developed around 2000 but was not developed into an Extension publication at that time. The last published study was conducted in 1985 (E-1016). This study is intended to update both of those documents by creating enterprise budgets attuned to current costs and cultural practices.

Methods/information sources

For this study, a three-part data gathering approach was taken. First, key informants including MSU Extension educators were interviewed to gather background information and past enterprise budget work. We then conducted individual interviews with a sample of growers having detailed records. Growers were interviewed across peach regions in Michigan, including the west-central, Southwest and Southeast areas of the lower peninsula. Finally, in early winter 2025, focus groups were held. A focus group for fresh peach growers was held in Southwest Michigan, with an online option for other growers to join. A second focus group for processor peach growers was held in west-central Michigan. During both focus groups, we gathered information and developed consensus on what average prices were, determined what should be included as cost categories and discussed the different aspects of production.

Peach bloom starting in Southeast Michigan.
Photo by Derek Plotkowski, MSU Extension

For analysis, we developed budgets for both fresh peaches and processor peaches. The spreadsheet that had been developed in 2000 and Extension Bulletin E-1016 provided starting places for cost categories and analysis. For fresh peaches, we separately looked at the costs and revenues of both selling to peach packers and farm-level packing for wholesale sales. Then we developed an overall budget and revenue picture for a farm with 50% of its peaches going to packers and 50% being farm-packed and sold wholesale, to develop a sense of the overall costs of fresh peach farming in Michigan. We developed a separate budget and tables for processor peach production, to appraise the differences in costs, orchard infrastructure and cultural practices found with processor peaches.

ASSUMPTIONS

During the study we gathered information about many variables related to production. Some of these variables fluctuate by the yield produced in a particular year, and some, such as orchard density and the varieties used for different blocks, differ from farm to farm. To make calculations we defined several assumptions.

First, for the "average" fresh peach producer, we assume that a farm delivers 50% of their product to a packer. The other 50% of product is assumed to be packed on their farm, for sale to farm market businesses and other local retailers (we referred to this category as "direct wholesale/bulk" for the rest of the report).

Some of our other assumptions, based on the data we gathered, are:

- Fresh peach yield for a mature planting is 300 bushels/acre.
    - Price received from packer: $24/bushel
    - Price from direct wholesale/bulk markets: $48/bushel
- Processing peach yield is 300 bushels per acre.
    - Price of 33 cents per pound for 2.5" and up
    - Price of 20 cents per pound for 2.375" to 2.499" peaches
    - Packout:
        - 75% makes the 2.5" category
        - 15% makes the 2.375" to 2.499" category
        - 10% of pounds delivered is sorted out as culls (no revenue)
- Fresh peach planting density is 270 trees per acre (9 feet by 18 feet)
- Processing peach planting density is 227 trees per acre (12 feet by 16 feet)
- Open center systems are used
- Land control cost/rental allocation is $400
- Credit line interest rate of 9% (for operating and harvest expenses), and
- Crop insurance cost allocation of $300 per acre.

Note that many growers sell some level of product directly to the consumer in their market stands, at farmer's markets, and using other direct-to-consumer markets. While higher prices are often realized at these venues, these transactions also require further steps, including labor to take peaches from ½ bushels or bins and put into smaller bags or quarts, staffing of markets, development of retail space and packaging costs. The analysis of these value-added activities is outside the scope of this study. That said, it is assumed that the price for our "direct wholesale/bulk" category would represent the cost of peaches for these direct-to-consumer enterprises. In other words, growers would conceptually sell peaches from their production enterprise (growing, harvesting) to their retail enterprise (direct-to-consumer marketing) for these activities at the "direct wholesale/bulk" price.

Equipment used: The equipment used for peaches is largely the same as with other tree fruit: a spray tractor with a cab, one or more two-wheel-drive forklift tractors, a forklift for loading, mowers and flail choppers (Table 1). Peach growers in our study also included a water tank in the budget. While only used infrequently, young plantings sometimes need to be watered during drought years because many peach growers do not have irrigated orchards. Growers also included a trailer for fresh peach harvest, used for holding and hauling ½ bushel baskets. In some cases, these trailers may be able to convert over for apple harvest. For fertilizer spreading, some growers use a three-point spreader on the back of a tractor while others use a pull type. More details on equipment costs, including cost per hour calculations, can be found in Table A19 in the Appendix.

Table 1. Equipment used for peach production in Michigan

Equipment Type	Purchase Price
85 HP 4WD tractor w/cab	$85,000
60 HP 2WD tractor / forklift	$60,000
Hedger	$26,000
Airblast sprayer	$47,000
Weed sprayer	$15,000
Fertilizer spreader	$ 8,000
Flail chopper	$10,000
Rotary mower	$ 8,000
Water tank	$ 12,000
Box shuttle/ fresh pack trailer	$12,000
Forklift	$86,000

Labor and housing: The prices stated in Table 2 for manual and skilled labor include housing costs and other benefits. Housing is a major benefit provided for many workers, and a substantial number of growers are working with the H2A program. The H2A program requires the funding of travel, transport, and in some cases food for workers, in addition to workers' mandated minimum wage (currently $18.15/hour). If growers work with a farm labor contractor (FLCs), the FLC incurs these costs and passes them on to the grower.

Table 2. Labor prices

LABOR COST		
Skill Level	**Notes**	**Total**
Owner/ Manager	All in wage placeholder	$40.00
Skilled, year-round	Includes benefits/ housing	$31.00
Manual, hourly	**Includes benefits, housing, & contractor costs**	$26.00

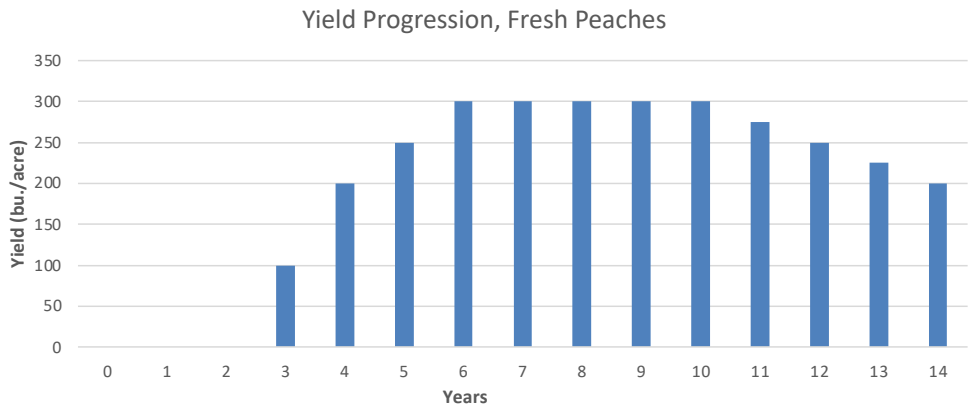
For many farms, growers and their families perform many of the production tasks. In these cases, the labor cost allocated to those tasks will represent revenue to the grower. For all farms, we have included an owner/ management wage of $40/hour for 5 hours per acre per year. This $200 represents time spent on planning, financing, marketing and overall business management per year.

Yields and life of field: We found a wide range of orchard life for peaches, from 10 years to 20 or slightly more. Some growers that use irrigation suggest that it elongates life and increases yield through development of a stronger tree and less strain on trees during dry periods.

Peach trees start producing enough fruit to harvest in Year 3 and achieve full production around Year 6. Fresh peaches have a shorter life overall –—— they have full production through about year 10, then yields start to decline and orchards are often taken out after Year 14 or so. While full yields vary quite a bit from year to year and orchard to orchard, we assume an average of 300 bushels per acre based on grower feedback.

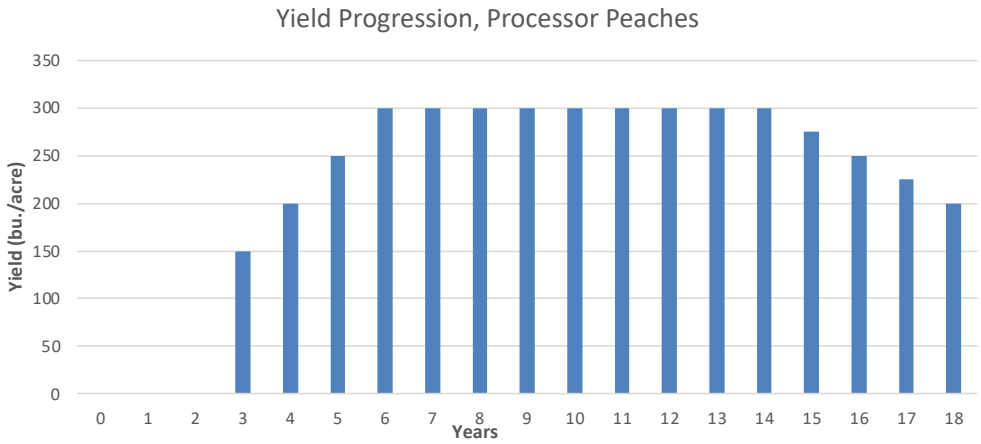
Ripening Michigan peach. Photo by Derek Plotkowski, MSU Extension

Figure 3. Average yields over the life of fresh peach orchard



Processor peaches usually keep their full production through Year 14, after which yields begin to drop off. Processor peach trees are often taken out after Year 18, although some growers keep them through Year 20. As with fresh peaches, we assume a 300 bushel per acre full production yield based on information gathered from growers.

Figure 4. Average yields over the life of a processor-peach orchard.



The last four years where yields begin to drop, as seen in Figures 3 and 4, are considered the "spin-down" years. We have allocated for spin-down costs in addition to establishment costs in our full production budget.

Peach tree ripe for harvest. Photo by Emily Lavely, MSU Extension

ORCHARD ESTABLISHMENT

Establishment costs vary by orchard design and density. Here we detail the costs of both fresh orchard and processor variety establishment.

Land preparation: Land preparation costs are similar for both fresh and processing varieties. Generally, orchards are being planted following other tree fruit, so the cost of land clearing is included. Growers often cover crop the land for a year or two with rye, sorghum, sudan grass or oilseed mixes. Here we assume an all-inclusive cost of $50/acre for cover crops including seed and planting.

Table 3. Land preparation costs

Pre-plant costs (Year 0)	Time	Labor Rate	Materials	Equipment Rate		Subtotal	TOTAL
	Hours/ Acre	$/Hour	or **Custom Cost** $/ Acre	$/Hour Variable (cash)	$/Hour, Fixed (non-cash)	$/Acre	**$/Acre**
Land Clearing			$600.00			$600.00	
Roots and Rocks -- all in cost			$350.00			$350.00	
Tillage -- various tasks, all in			$100.00			$100.00	
Cover crop -- all in			$50.00			$50.00	
					Total Pre-plant costs		**$1,100**

Planting: The planting process is similar to other tree fruit. Tractors with GPS can help to make very straight rows. However, measuring off the orchard is still needed and requires time for preparation, so that the trees get placed in the appropriate spot. For a planting crew, one person is needed to drive the tractor, one to sit on the planter, at least one to move trees from the holding box to the tractor and one person to firm the soil around the trees (Tables 4 and 5).

Obtaining quality tree/rootstock combinations from the nursery is a challenge for some growers, especially for smaller quantity purchases. However, growers can purchase trees at a reasonably consistent price, though not always the variety of choice. We found averages of $13 for fresh varieties and $11 for processing varieties.

Several techniques for repelling deer are used by growers: shiny flag materials, bags full of repellent, dryer sheets and even scarecrows. Deer fencing was found to be less commonly used by fresh growers. However, it is used more often by processor peach growers. We therefore included deer fencing as a line item for establishment of processor peach orchards (Table 5).

We did not include irrigation in the budgets. While some growers have irrigation systems installed and attest to its importance for extending the life of trees, most growers do not use irrigation.

Grass middles are planted after the trees are planted, using fescues and other grasses. We allocated $50 per acre for this to cover both seed and planting costs.

Table 4. Fresh peach planting costs

Planting - FRESH Peaches (spring of Year 1)	Time	Labor Rate	Materials	Equipment Rate		Subtotal	TOTAL
	Hours/ Acre	$/Hour	or **Custom Cost** $/ Acre	$/Hour Variable (cash)	$/Hour, Fixed (non-cash)	$/Acre	**$/Acre**
Tree costs							
$13 per tree x 270 trees per acre			$3,510.00			$3,510.00	
Planting							
Preparation and row marking	1.0	$31.00				$31.00	
4 laborers for 1 hour per acre	4.0	$26.00				$104.00	
85 HP Tractor and driver, planter	1.0	$31.00		$15.51	$24.86	$71.36	
Seeding grass middles							
All in cost, seed plus planting			$50.00			$50.00	
					Total Planting costs		**$3,766**

For processor peaches, planting costs are lower overall (Table 5). The savings relate to having fewer trees per acre (227 versus the 270 per acre assumed for fresh peach plantings) and a lower cost per tree ($11 versus $13). However, some of the savings in tree costs are offset by the $500 additional cost of deer fencing we allocated for processor peaches.

Table 5. Processor peach planting costs

Planting - PROCESSOR Peaches (spring of Year 1)	Time	Labor Rate	Materials	Equipment Rate		Subtotal	TOTAL
	Hours/ Acre	$/Hour	or **Custom Cost** $/ Acre	$/Hour Variable (cash)	$/Hour, Fixed (non-cash)	$/Acre	**$/Acre**
Tree costs							
$11 per tree x 227 trees per acre			$2,497.00			$2,497.00	
Planting							
Preparation and row marking	1.0	$31.00				$31.00	
4 laborers for 1 hour per acre	4.0	$26.00				$104.00	
85 HP Tractor and driver, planter	1.0	$31.00		$15.51	$24.86	$71.37	
Seeding grass middles							
All in cost, seed plus planting			$50.00			$50.00	
Deer fence			$500.00			$500.00	
					Total Planting costs		**$3,253**

Nonbearing years: The early year costs of production include many of the same tasks found during full production —— pruning, brush chopping and crop protection —— but at a fraction of the cost. For example, crop protection materials are allocated at about 40% of full program costs, due in part to smaller trees and less foliage to spray, and due in part to not having to control for the pests that only attack the fruit (Table 6).

Tree guards are being used by some growers to protect against rodents, but most often trunks are being painted white at year one. The paint helps protect the trees from winter sun and some contact herbicide injury. Some growers repeat paintings regularly through the life of the orchard, but for most, painting is a planting year task only.

Tree replacement is only done in the very early years. Most growers do not continue to replace trees during the producing years, because in addition to difficulty with securing smaller numbers of trees from the nursery, deer tend to target new replant trees, which are easy to reach.

Table 6. Nonbearing costs for Year 1 and Year 2 for fresh peaches

Growing Years-FRESH Peaches (Years 1 & 2)	Time	Labor Rate	Materials	Equipment Rate		Subtotal	TOTAL
	Hours/ Acre	$/Hour	or **Custom Cost** $/ Acre	$/Hour Variable (cash)	$/Hour, Fixed (non-cash)	$/Acre	**$/Acre**
Pruning -- $1 per tree, early years			$270.00			$270.00	
Brush Chopping -- 50% of full costs	0.5	$31.00				$15.50	
85 HP tractor	0.5			$15.51	$24.86	$20.18	
Flail mower	0.5			$1.00	$10.48	$5.74	
Mouse Bait - $20 all in cost			$20.00			$20.00	
Tree Painting (Year 1 only so 50% allocation in subtotal)	1.0	$26.00				$13.00	
Paint (assuming 2 gallons/ acre)			$20.00			$10.00	
Fertilizer	0.4	$31.00				$12.40	
60 HP tractor	0.4			$9.95	$13.16	$9.24	
Spreader	0.4			$2.00	$15.29	$6.92	
Materials, 40% of full program			$97.73			$97.73	
Mowing							
4 trips/year at .25 hours/ trip	1.0	$31.00				$31.00	
60 HP tractor	1.0			$9.95	$13.16	$23.11	
Rotary Mower	1.0			$0.80	$8.38	$9.18	

(more)

Table 6. Nonbearing costs for Year 1 and Year 2 for fresh peaches (cont.)

Growing Years-FRESH Peaches (Years 1 & 2)	Time	Labor Rate	Materials	Equipment Rate		Subtotal	TOTAL
	Hours/ Acre	$/Hour	or **Custom Cost** $/ Acre	$/Hour Variable (cash)	$/Hour, Fixed (non-cash)	$/Acre	**$/Acre**
Crop Protection							
Materials, 40% of full program			$222.00			$222.00	
Total for 7 trips/year	1.0	$31.00				$30.05	
85 HP tractor	1.0			$15.51	$24.86	$39.12	
Airblast Sprayer	1.0			$2.35	$17.97	$19.69	
Herbicide							
3 trips/year at .33 hours/trip	1.0	$31.00				$31.00	
60 HP tractor	1.0			$9.95	$13.16	$23.11	
Weed sprayer	1.0			$1.25	$9.56	$10.81	
Replants -- 6 total (Year 2 only so 50% allocation on subtotal)			$78.00			$39.00	
Porta-potties			$22.00			$22.00	
Land control costs			$400.00			$400.00	
Real estate tax			$26.00			$26.00	
Management	5.0	$40.00				$200.00	
Credit line interest							
9% APR on costs avg 4 months			$48.20			$48.20	
					Early Year Operating Costs (per year)		**$1,655**

The early year costs are nearly the same for processor peaches as for fresh peaches. However, early year costs are about $50 cheaper for processor peaches, mostly due to lower pruning costs because of fewer trees per acre. See Table A21a in the Appendix for more details.

PRODUCTION

Production costs are relatively similar between fresh and processor peach production. The tasks are largely the same as found with other tree fruit production in Michigan.

Pruning and hedging: Growers use piece rates for pruning, averaging $2.75 per tree. Pruning activities improve light penetration, promote good tree structure and help lower thinning costs. Most fresh growers do not use mechanical hedgers, whereas processor peach growers generally do hedge as a method for keeping tree height down.

Thinning: Fruit thinning is a substantial challenge and large cost issue for peach production. Hand thinning is very time consuming, resulting in high labor expenses. Growers often use a piece rate, paying an average of $3.00 per tree for hand thinning.

While hand thinning is the current prevailing industry practice, other methods are being tested and used. Mechanical "bat" or "string" thinning has some cost advantages. In a notable development, the industry has recently started to use Acceed, a chemical

thinner. It is relatively expensive, but growers and MSU Extension are working to develop accurate application practices and amounts. Note that these thinning methods are less discriminate than hand thinning allows, and there is risk of over- and under-thinning, particularly using chemical thinners. Over-thinning leads to low yields, which are discovered only after most of the annual costs of production have already been incurred. Under-thinning results in either small fruit size or the cost to paying laborers to hand thin.

Fertilizer: Growers have different approaches for their fertilizer programs. Many use a 21-0-21 formulation, but some rely on calcium nitrate combined with potash and/or urea. There is a trend towards using specific fertilizer formulations that include micronutrients. So, while the nutrient and micronutrient usage amounts per acre may have similarities across peach farms, it is difficult to suggest one average approach. Ultimately, growers base their programs on soil tests and upcoming nutrient needs.

In Table 7, we detail two approaches typical for fresh peach production during our focus groups and interviews.

Table 7. Fertilizer program approaches and cost, fresh peaches

FERTILIZER COST -- FRESH				
Type	**Pounds/acre**	**Cost/ton**	**Approach 1 Cost/acre**	**Approach 2 Cost/acre**
21-0-21	400	$725	$145	
Potash 0-0-60	300	$500		$75
Calcium Nitrate 15.5-0-0	175	$670		$59
Micros (Boron, Sulfur)			$40	$40
Foliars (20-20-20 x 5 sprays)			$50	$50
Limestone $45 per 3 years, incl. app.			$15	$15
		TOTALS	**$250**	**$239**
			Average Cost	**$244**

Processor peach programs have a similar cost level to fresh programs. We found a higher usage of potash for fresh peaches (Table 7) than for processor peaches (Table 8). We also saw that the approaches for fresh peaches substitute between 21-0-21 and calcium nitrate, whereas processor peach growers may use some of both. Growers usually fertilize in split applications, one in spring, often pre-bloom, and one when the crop is set and peaches are beginning to size up. Many growers are also using foliar sprays in tank mixes where possible throughout the summer, for example, 20-20-20 or spray urea. We assumed about twice as many foliar spray applications for fresh growers in our cost analysis.

Table 8. Fertilizer program for processed peaches

FERTILIZER COST -- PROCESSED			
Type	**Pounds/ Acre**	**Cost/ Ton**	**Cost/ Acre**
21-0-21	300	$725	$109
Calcium Nitrate 15.5-0-0	175	$670	$59
Micros (Boron, Sulfur)			$40
Foliars (20-20-20 x 2.5 sprays)			$25
Limestone $45 per 3 years, incl. app.			$15
		TOTAL	**$247**

Pest and disease management: Fresh growers reported that spray schedules are less intensive and more forgiving than for apple spray programs, which have longer seasons to protect fruit. In many cases, ½ sprays can be used (spraying every other row) until right before harvest. Alternatively, full covers can be used and then applications can be stretched out for a few more days. Growers generally use 40 to 75 gallons per acre, with 50 gallons being typical.

Pheromone ties are used to help manage tree borers and oriental fruit moth. For fresh peach production, a labor allocation for placing ties into the trees was included. The spotted wing drosophila pest was not found to be an economic issue in peaches. Aphids, brown rot and bacterial spot are more critical issues but are usually easier to control.

Table 9. Grower spray cost averages per acre

GROWER SPRAY COST AVERAGES per acre		
Type	**Fresh**	**Processor**
Crop Protection	**$555**	**$481**
Herbicide	**$93**	**$93**

Pollination: Peaches are generally self-pollinating, so there is no need to have a mix of varieties or pollinator trees planted within an orchard. Many growers capitalize on bees that are already on the farm for cherries or apples to help with pollination work, so we did not include a separate line item for bees in the budgets.

For more details on full production costs, see Tables A20b and A20c for fresh peaches, and Tables A21b and A21c for processor peaches.

Other production tasks, overhead and operating costs

Several other operating expenses occur during peach production. Some of these are overhead costs that happen regardless of an orchard's output that year, including soil testing, food safety related costs, portable bathrooms and crop insurance.

Crop insurance: We allocated $300 per acre for crop insurance, though amounts spent vary widely depending on options used, historical yields and coverage levels, among other things. Peaches are insurable through the APH (Actual Production History) program in Allegan, Berrien, Kent, Manistee, Mason, Muskegon, Oceana, Ottawa and Van Buren Counties. Growers in other counties can use Noninsured Disaster Assistance Program (NAP) combined with hail insurance. Whole Farm Revenue Protection plans can also be used. Many growers also invest in wind machines for frost protection to help manage risk.

FRESH PEACH HARVEST COSTS, YIELDS AND RETURNS

Fresh peach harvest begins in mid-July and goes into mid-September. Demand tends to be very strong in August. Growers and packers therefore work to sell product by Labor Day, after which demand begins to drop off.

Fresh peach harvest requires several walk-throughs with a harvest crew, picking the ripest fruit each time. For harvest costs, growers generally report their "all-in" cost per bushel, which will include hand picking labor, field supervision, field transport and necessary re-packing activities.

For peaches to be sold directly to wholesalers or bulk to farm market businesses, a crew might include a tractor driver for the harvest cart, one person accounting for picking amounts (scanning buckets), one getting boxes ready and up to eight or more people picking. Fresh peaches are typically picked into 10-bushel bins or directly into ½ bushel containers, which are then set onto the harvest cart and sometimes repackaged into cardboard containers. Many of these will be repacked by the buyer into smaller consumer-sized containers at the warehouse or farm market. Over the usual three or four pickings, these activities can easily add up to over 30 hours of labor per acre.

For fresh peaches being delivered to the packer, harvest is quicker. Laborers can harvest into picking bags and then unload those into 10-bushel bins. These 10-bushel bins can be easily transported and stacked in a cooler.

Table 10. Fresh peach harvest costs

HARVEST COSTS - |Fresh Market	Rate/ bushel	Total Crop Yield/acre (in 50 lb. bushels)	Percent of Crop	Harvested Bushels	Subtotal	TOTALS /acre
Hand Harvest, packed on farm		**300**	**50%**	**150**		**$1,787**
-All in per bushel harvest cost, including labor, field transport, supervision, & repacking[1]	$6.00			150	$900.00	
-Packaging (half bushel cardboard boxes at $2.65/ bu	$5.30			150	$795.00	
-Cooling costs (operation and overhead)	$0.15			150	$22.50	
-Wood basket replacement (5%/year @ $4.60 per half bushel/ $9.20 per bushel)	$0.46			150	$69.00	
Hand Harvest, sent to Packer		**300**	**50%**	**150**		**$596**
-All in per bushel harvest cost, including labor, field transport, supervision, & trucking to packer[1]	$3.75			150	$562.50	
-10 bushel plastic bin replacement cost (3% per year)	Bins/ Year			Cost/Bin		
	0.45			$75.00	$33.75	
					TOTAL HARVEST COSTS	**$2,383**

[1] Pruning, picking, and packing labor are based on interview and focus group estimates, and are inclusive of domestic and/or H2A labor costs including farm labor contractor costs and benefits such as housing.

For fresh peaches, we looked at costs and revenues of a) farm-packed fresh peaches for direct wholesale/bulk markets, and b) fresh peaches sold to a packer. For farm-packed product, our prices assume sales to customers who will resell the peaches (generally local retailers), or bulk sales directly to the consumer. For packer product, we use a "dock" price –— in other words, the price received by the grower per unit delivered to the packer's dock. Trucking costs are included in our harvest cost calculations.

Many growers work with a mix of markets. To create an "average" farm scenario, we used 50% packer sales and 50% direct wholesale/bulk sales as a starting point. Table 11 shows our basic calculator, set to the average prices and yields we found.

Table 11. Cost and revenue calculator for fresh peach production

Direct Wholesale/ Bulk Sales: 50%				**Revenue Calculation Table, Mix of Packer, Direct (wholesale/bulk)**							
				Costs							
Sales to Packer: 50%	**Revenues**			Operating & Harvest Costs			Overhead Costs			**Net Returns**	
	Price	Yield (bu)	Totals	Cultural*	Harvest	Credit Line Interest	Establishment & Spin Down	Land Control	Other Overhead**	Net Returns over Operating & Harvest Costs	Net Returns over Total Costs (Profits)
Direct Market Sales:	$48.00	150	$7,200	$2,703	$1,787	$171	$1,125	$426	$764	$5,529	$3,214
Sales to Packer:	$24.00	150	$3,600		$596						
	TOTAL Revenue		**$10,800**		$15	Fees					

* "Cultural" costs include pruning, hand thinning, mowing, crop protection, herbicide and fertilizer.
** "Other Overhead" costs include equipment depreciation & other operating expenses such as food safety, crop insurance, and soil testing)

Note that we did not analyze price based on direct-to-consumer sales of quarts, pecks and other smaller breakdowns that are received at farmer's markets and market stands, often at a substantial premium. This is because for that category of sales, higher costs are also incurred through packaging, repacking and staffing, to name a few. This study assumes that a grower engaged in direct-to-consumer marketing would essentially purchase peaches from themselves, at the farm-packed for direct wholesale/bulk price level. This approach enables growers to account for production and direct-to-consumer marketing enterprises separately.

Yields can vary substantially from year to year, due to partial freeze-outs of fruit, age of trees and other factors. We use an assumed average full production yield of 300 bushels per acre. Because production costs are similar regardless of yield, and harvest costs vary directly with yield, we can estimate costs for a wider range of yields in our tables (from 150 bushels to 600 bushels per acre). Table 12 shows the costs for this 50%/50% marketing mix for different yields, broken down by cost category. The amount of ongoing operating and harvest costs are separated from overhead costs in this table. A similar breakdown by category and yield can be found in Table A22 in the Appendix.

Table 12. Costs by category for different yields for a farm having a 50% packer/50% direct wholesale/bulk market split

Cost/acre and /bu. at Varying Yield Levels, Fresh Peaches*							
Yield (bu)	**Total Operating and Harvest Costs***	**Operating/ Harvest Cost/bu.**	**Establishment Cost ($1,125 per acre) per bu.**	**Land Cost ($426 per acre) per bu.**	**Other Overhead Costs ($764 per acre) per bu.**	**Total Costs / acre**	**Total Production Cost/ bu.**
150	$4,037	**$26.91**	$7.50	$2.84	$5.09	$6,351	**$42.34**
200	$4,449	**$22.25**	$5.63	$2.13	$3.82	$6,763	**$33.82**
250	$4,860	**$19.44**	$4.50	$1.70	$3.06	$7,174	**$28.70**
300	$5,272	**$17.57**	$3.75	$1.42	$2.55	$7,586	**$25.29**
350	$5,682	**$16.23**	$3.21	$1.22	$2.18	$7,996	**$22.85**
400	$6,094	**$15.24**	$2.81	$1.07	$1.91	$8,408	**$21.02**
450	$6,506	**$14.46**	$2.50	$0.95	$1.70	$8,820	**$19.60**
500	$6,917	**$13.83**	$2.25	$0.85	$1.53	$9,231	**$18.46**
550	$7,329	**$13.33**	$2.05	$0.77	$1.39	$9,643	**$17.53**
600	$7,741	**$12.90**	$1.88	$0.71	$1.27	$10,055	**$16.76**

* Assumes 50/50 split of direct wholesale/bulk and packer sales, $48/bu price for direct, and $24/bu price from the packer. For this table operating and harvest costs are total costs excluding establishment, spin down, and land costs.

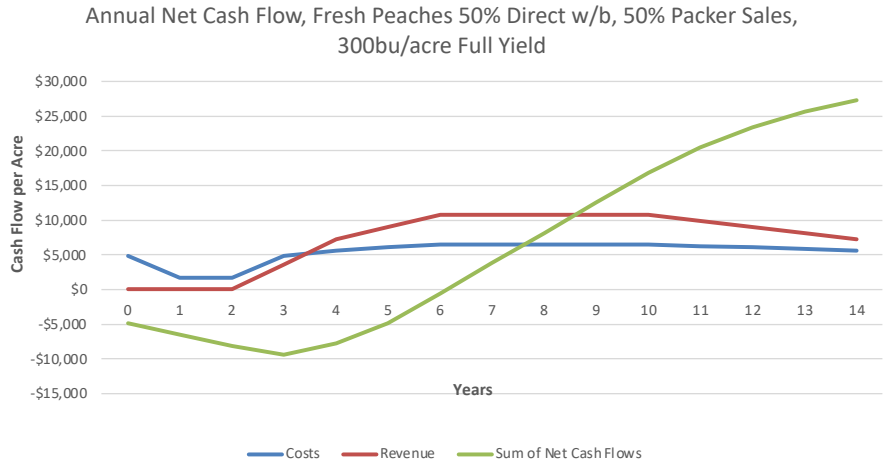
Table 13 illustrates fresh peach enterprise profits at various yields and prices along different market splits (sales to a packer versus direct wholesale/bulk sales). As such, Table 13 provides approximations that can be matched to a specific farm's circumstances. However, for a more accurate calculation, contact corresponding author Chris Bardenhagen, who can plug farm-specific numbers directly into our spreadsheet to assess an individual farm's costs of production.

Table 13. Profits at different prices, yields, and splits between markets

PROFITS at DIFFERENT PRICES, YIELDS, and SPLITS									
Direct sales / Packer sales split	**Direct Sales/ Packer price**	**150 bu Yield**	**200 bu Yield**	**250 bu Yield**	**300 bu Yield**	**350 bu Yield**	**400 bu Yield**	**450 bu Yield**	**500 bu Yield**
20% / 80%	$42 / $18	($2,563)	($1,712)	($861)	($10)	$841	$1,692	$2,543	$3,394
	$44 / $20	($2,263)	($1,312)	($361)	$590	$1,541	$2,492	$3,443	$4,394
	$46 / $22	($1,963)	($912)	$139	$1,190	$2,241	$3,292	$4,343	$5,394
	$48 / $24	($1,663)	($512)	$639	$1,790	$2,941	$4,092	$5,243	$6,394
	$50 / $26	($1,363)	($112)	$1,139	$2,390	$3,641	$4,892	$6,143	$7,394
	$52 / $28	($1,063)	$288	$1,639	$2,990	$4,341	$5,692	$7,043	$8,394
40% / 60%	$42 / $18	($2,089)	($1,079)	($70)	$939	$1,949	$2,958	$3,967	$4,977
	$44 / $20	($1,789)	($679)	$430	$1,539	$2,649	$3,758	$4,867	$5,977
	$46 / $22	($1,489)	($279)	$930	$2,139	$3,349	$4,558	$5,767	$6,977
	$48 / $24	($1,189)	$121	$1,430	$2,739	$4,049	$5,358	$6,667	$7,977
	$50 / $26	($889)	$521	$1,930	$3,339	$4,749	$6,158	$7,567	$8,977
	$52 / $28	($589)	$921	$2,430	$3,939	$5,449	$6,958	$8,467	$9,977
50% / 50%	$42 / $18	($1,851)	($763)	$326	$1,414	$2,503	$3,591	$4,680	$5,768
	$44 / $20	($1,551)	($363)	$826	$2,014	$3,203	$4,391	$5,580	$6,768
	$46 / $22	($1,251)	$37	$1,326	$2,614	$3,903	$5,191	$6,480	$7,768
	$48 / $24	($951)	$437	$1,826	$3,214	$4,603	$5,991	$7,380	$8,768
	$50 / $26	($651)	$837	$2,326	$3,814	$5,303	$6,791	$8,280	$9,768
	$52 / $28	($351)	$1,237	$2,826	$4,414	$6,003	$7,591	$9,180	$10,768
60% / 40%	$42 / $18	($1,614)	($446)	$721	$1,889	$3,057	$4,224	$5,392	$6,559
	$44 / $20	($1,314)	($46)	$1,221	$2,489	$3,757	$5,024	$6,292	$7,559
	$46 / $22	($1,014)	$354	$1,721	$3,089	$4,457	$5,824	$7,192	$8,559
	$48 / $24	($714)	$754	$2,221	$3,689	$5,157	$6,624	$8,092	$9,559
	$50 / $26	($414)	$1,154	$2,721	$4,289	$5,857	$7,424	$8,992	$10,559
	$52 / $28	($114)	$1,554	$3,221	$4,889	$6,557	$8,224	$9,892	$11,559
80% / 20%	$42 / $18	($1,139)	$187	$1,513	$2,839	$4,165	$5,490	$6,816	$8,142
	$44 / $20	($839)	$587	$2,013	$3,439	$4,865	$6,290	$7,716	$9,142
	$46 / $22	($539)	$987	$2,513	$4,039	$5,565	$7,090	$8,616	$10,142
	$48 / $24	($239)	$1,387	$3,013	$4,639	$6,265	$7,890	$9,516	$11,142
	$50 / $26	$61	$1,787	$3,513	$5,239	$6,965	$8,690	$10,416	$12,142
	$52 / $28	$361	$2,187	$4,013	$5,839	$7,665	$9,490	$11,316	$13,142

The 50%/50% mix between packer sales and direct wholesale markets is steady and profitable at our assumed average yield of 300 bushels/acre, returns of $24 for sales to the packer and returns of $48 for direct wholesale/bulk sales. Figure 5 illustrates annual net cash flows and cumulative cash flows under these assumptions. Positive cash flow starts in Year 4, and the breakeven year —— when all costs of establishment are paid for —— occurs at Year 7. For more details on the related net cash flows, see Table A25 in the Appendix.

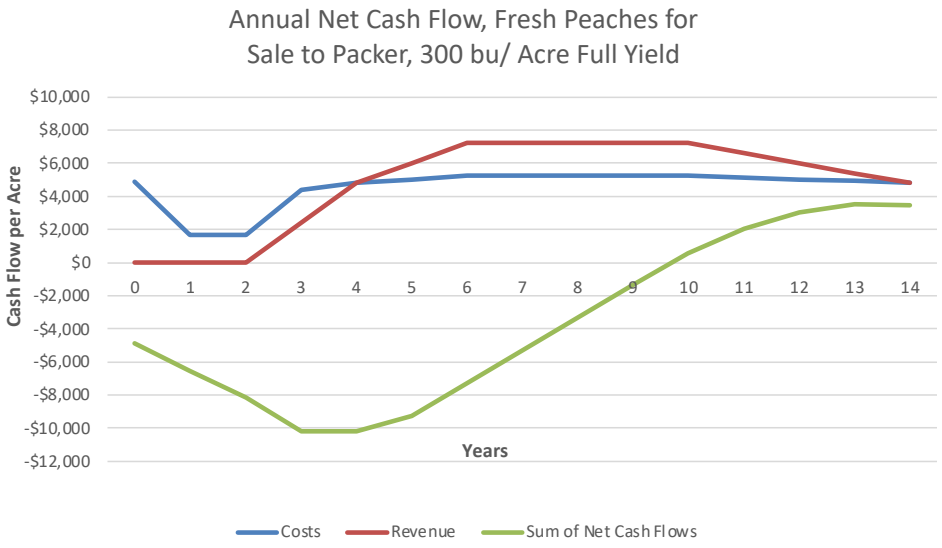
Figure 5. Annual net cash flow for Michigan fresh peaches based on 2024 costs and prices



For fresh growers who focus mainly on **direct wholesale/bulk sales** (including sales to themselves as described earlier), see Tables A26, A27 and A28 in the Appendix. Table A27 looks at returns over operating and harvest costs for various prices and yields, and Table A28 looks at total profits after all economic costs are accounted for, including establishment, land control and other overhead costs. Profits are reliable with these operations, but marketing skills are critical, and substantial labor capacity is needed to pick and repack peaches during the harvest season.

Fresh growers that **sell most of their product to packers** will want to look at Tables A29, A30 and A31 in the Appendix. These detail revenues over operating and harvest costs, as well as profits at different yields and prices. While still making money, the profitability for peaches sold to packers is substantially less than with direct wholesale/bulk sales (Figure 6). While the first positive cash flow occurs in Year 5, the breakeven year when establishment costs are fully paid doesn't occur until Year 10. See Table A33 in the Appendix for details on the net cash flows.

Figure 6. Annual net cash flow for operations selling to a packer, at current yield and price assumptions



PROCESSOR PEACH HARVEST COSTS, YIELDS AND RETURNS

Processor peaches are hand harvested. The harvest process is relatively fast compared to fresh peach harvest. Peaches are harvested into picking bags and placed into 20 bu bins, and there is generally no need for repacking activities as with fresh picking for direct sales. Peaches are harvested over two or three pickings, occurring late August through early or mid-September, depending on the variety. Harvest costs are detailed in Table 14.

Table 14. Processor peach harvest costs

HARVEST COSTS - Processor Market	Rate/ bushel	Total Crop Yield/acre (in 50 lb. bushels)	Harvested Bushels	Subtotal	TOTALS / acre
Hand Harvest, sent to Processor		**300**	**300**		**$725**
- Hand harvest cost per bushel[1]	$1.75		300	$525.00	
- Harvest supervision & tractor hauling labor (3 hours/acre total x $31)	$0.31		300	$93.00	
- Tractor cost (1 hour equipment usage/acre)	$0.08		300	$23.11	
- Forklift cost (.5 hours equipment usage/acre)	$0.03		300	$8.64	
- Trucking ($5 per 20 bushel bin, all in)	$0.25		300	$75.00	
				TOTAL HARVEST COSTS	**$725**

[1] Pruning, picking, and packing labor are based on interview and focus group estimates, and are inclusive of domestic and/or H2A labor costs including farm labor contractor costs and benefits such as housing.

Table 15 shows our cost and revenue calculator for processor peaches. We used the price assumptions of 33 cents/lb. for 2.5" plus peaches and 20 cents per pound for 2.375" to 2.499" peaches. We assume a packout of 75% for 2.5" plus peaches, 15% for 2.375" to 2.499" peaches, and 10% for culls (culls are a waste product and do not result in any revenue from the processor).

Table 15. Yield, revenue and profit calculations for processor peaches

Revenue Calculation Table, PROCESSOR Market - 300 Bushel/ Acre Yield*										
			Costs							
Revenues			Operating & Harvest Costs			Overhead Costs			Net Returns	
Price/lb.	Yield (lbs.)	Subtotal	Cultural**	Harvest	Credit Line Interest	Establishment & Spin Down	Land Control	Other Overhead***	Net Returns over Operating & Harvest Costs	Net Returns over Total Costs (Profits)
$0.33	11250	$3,713	$2,468	$725	$114	$773	$426	$831	$843	-$1,188
$0.20	2250	$450		$14	Fees					
TOTAL Revenue		**$4,163**								

* Assumes 300 bu/acre yield, $0.33 for 2.5"+, $0.20 for 2.375"-2.5", and 75% making 2.5"+ grade, 15% making 2.375"-2.5" grade.
** "Cultural" costs include pruning, hand thinning, mowing, crop protection, herbicide and fertilizer.
*** "Other Overhead" costs include equipment depreciation & other expenses such as food safety, crop insurance, and soil testing.

Table 16 breaks down costs by category for different yields, on both a per-acre and a per-bushel basis. Note that costs drop substantially on a per-bushel basis as yields climb.

Table 16. Costs by category for different yields, processor peaches

Cost/acre and /bu. at Varying Yield Levels, Processing Peaches*							
Yield (bu)	**Total Operating and Harvest Costs***	**Operating/ Harvest Cost/bu.**	**Establishment Cost ($773 per acre) per bu.**	**Land Cost ($426 per acre) per bu.**	**Other Overhead Costs ($831 per acre) per bu.**	**Total Costs / acre**	**Total Production Cost/ bu.**
150	$2,940	**$19.60**	$5.15	$2.84	$5.54	$4,970	**$33.13**
200	$3,066	**$15.33**	$3.87	$2.13	$4.16	$5,096	**$25.48**
250	$3,193	**$12.77**	$3.09	$1.70	$3.32	$5,223	**$20.89**
300	$3,320	**$11.07**	$2.58	$1.42	$2.77	$5,350	**$17.83**
350	$3,446	**$9.85**	$2.21	$1.22	$2.37	$5,476	**$15.65**
400	$3,573	**$8.93**	$1.93	$1.07	$2.08	$5,603	**$14.01**
450	$3,700	**$8.22**	$1.72	$0.95	$1.85	$5,730	**$12.73**
500	$3,826	**$7.65**	$1.55	$0.85	$1.66	$5,856	**$11.71**
550	$3,953	**$7.19**	$1.41	$0.77	$1.51	$5,983	**$10.88**
600	$4,080	**$6.80**	$1.29	$0.71	$1.39	$6,110	**$10.18**

* For this table operating and harvest costs are total costs excluding establishment, spin down, and land costs.

Table 17 illustrates returns over operating and harvest costs, at different yields and prices for processor peaches. We can see that at our assumed yield of 300 bushels per acre, operating and harvest costs are being covered at the current prices and assumed packout levels, with an additional $843 in returns accruing.

Table 17. Net returns for processor peach production over operating and harvest costs

Net Return over OPERATING & HARVEST COSTS per acre, PROCESSOR PEACHES										= **breakeven** or better
	Processor Peach Yield - Bushels per acre									
PRICE per Pound (2.5"+ / 2.375"-2.5")	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**
$0.29 / $0.18	($1,106)	($622)	($137)	$348	$832	$1,317	$1,801	$2,286	$2,771	$3,255
$0.31 / $0.19	($982)	($457)	$69	$595	$1,121	$1,647	$2,173	$2,698	$3,224	$3,750
$0.33 / $0.20	($859)	($292)	$276	$843	$1,410	$1,977	$2,544	$3,111	$3,678	$4,245
$0.35 / $0.21	($735)	($127)	$482	$1,090	$1,698	$2,307	$2,915	$3,523	$4,132	$4,740
$0.37 / $0.22	($611)	$38	$688	$1,338	$1,987	$2,637	$3,286	$3,936	$4,586	$5,235
$0.39 / $0.23	($487)	$203	$894	$1,585	$2,276	$2,967	$3,658	$4,348	$5,039	$5,730

Table 18 shows current revenues when total costs are considered. Total costs per acre include not only operating and harvest costs but also yearly expenditures on overhead, such as crop insurance and food safety, as well as other economic costs, such as land control and orchard establishment.

Table 18. Profits at different yields and prices, processor peach production

Net Return over TOTAL costs/ acre, PROCESSOR PEACHES										= **breakeven** or better
	Processor Peach Yield - Bushels per acre									
PRICE per Pound (2.5"+ / 2.375"-2.5")	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**
$0.29 / $0.18	($3,137)	($2,652)	($2,167)	($1,683)	($1,198)	($714)	($229)	$256	$740	$1,225
$0.31 / $0.19	($3,013)	($2,487)	($1,961)	($1,435)	($909)	($384)	$142	$668	$1,194	$1,720
$0.33 / $0.20	($2,889)	($2,322)	($1,755)	($1,188)	($621)	($54)	$513	$1,081	$1,648	$2,215
$0.35 / $0.21	($2,765)	($2,157)	($1,549)	($940)	($332)	$276	$885	$1,493	$2,101	$2,710
$0.37 / $0.22	($2,642)	($1,992)	($1,342)	($693)	($43)	$606	$1,256	$1,906	$2,555	$3,205
$0.39 / $0.23	($2,518)	($1,827)	($1,136)	($445)	$246	$936	$1,627	$2,318	$3,009	$3,700

As a result, revenues do not cover establishment costs by the end of the orchard's life, at the assumed 300 bushel per acre yield level and current prices (see Table A37 and Figure A8 in the Appendix for more details on cash flows for processing peaches).

However, it is important to consider that growers have a variety of methods and advantages that can help save them money on costs from what is shown in this budget. Some growers have large volume discounts, deer fence already established and/or repair shops that enable them to accrue savings on maintenance and repair of equipment. Where land is already paid for or inherited, growers can subtract land costs. If a grower has already paid for establishment costs, or is not planning to replant, the establishment allocation can be dropped from the budget. Note that savings on establishment and/or land costs can be estimated in a simplified manner using Table 16, on a per-bushel or per-acre basis.

Application to the individual farm

This study looked at averages across the peach industry and production regions in Michigan. Individual farms may have higher or lower costs based on each farm's unique circumstances. In order to develop an accurate picture for an individual farm, it is important to make adjustments to this budget as necessary.

The most critical drivers of a farm's cost and revenue picture are yield and price. To address this, we have included tables that estimate costs and profits at different yields and prices. These include Table A28 in the Appendix for fresh direct wholesale/bulk markets, Table A31 in the Appendix for fresh peaches sold to a packer, Table 13 for fresh peaches with mixed markets and Table 18 for processor peach sales.

For adjustments on the cost side, growers who have their farmland paid off can subtract the land control costs. Processor peach growers who plant where deer fence already exists, or will not put in deer fence at all, can subtract that cost from the establishment budget. A grower can also adjust the establishment budget when trees are significantly more or less expensive.

If operating loan lines are not needed for cash flow purposes, the operating interest allocation can also be subtracted.

In many cases, growers and their families are conducting a substantial amount of the tasks identified in our budgets. They are also able to multitask for some activities, such as tractor pickup and harvest supervision. These savings represent income to the farmer, and the budgets can be adjusted accordingly. Similarly, many growers are adept at keeping equipment repaired and maintained themselves, resulting in longer equipment life and lower overall equipment costs.

On the other hand, some costs might need to be added to the budget to make it accurate for a specific farm. For example, a fresh grower planning to put deer fence in would need to add that cost to the budget. Actual crop insurance costs might be higher than our assumed amount of $300, if an operation has high approved yields or is selling to the direct market. If a grower needs to use loans to help finance the establishment of fields, the interest cost of that longer-term loan would need to be added in —— something that could apply to growers who are increasing their acreage as well as to beginning farmers.

Please feel free to contact the corresponding author, Chris Bardenhagen, for assistance with adjusting calculations based on a farm's specific numbers, or for analyzing scenarios that growers might face. The spreadsheet numbers can be adjusted to create tables that are applicable to a specific farm's circumstances.

SUMMARY/ CONCLUSIONS

Peach production continues to provide valuable crop diversification. Peaches can be a mainstay for farms that sell direct-to-wholesale or direct-to-consumer, or they can be one part of a grower's fruit portfolio and help to spread resources over more crops and provide important income for laborers.

Our analysis shows fresh peaches sold directly at wholesale prices are strongly profitable. Growers with direct-to-consumer or agritourism outlets can add further value and realize even higher premiums. Fresh peaches can attract tourists, providing both direct and indirect economic opportunities for the farm and community.

Sales of fresh peaches to packers provide growers with profits, but less profit than with direct wholesale/bulk marketing. However, packers do provide substantial advantages for peach growers. Working with packers provides revenue for fruit above what a farm can market directly itself. And, for farms whose peach production is solely delivered to packers, time and money that would be needed for marketing can be used within other enterprises.

Processor peach production is less robust, at current prices and the assumed average yield of 300 bushels per acre. Revenues from processor peaches cover operating costs, harvest costs and ongoing overhead costs. However, processing peach revenues in this analysis may not result in profits when the economic costs of land control and establishment are considered.

ACKNOWLEDGEMENTS

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APPENDIX

Table A19. Equipment list and cost per hour calculations

EQUIPMENT Item	Cost	Salvage Value %	Rate Trade-in value	Years life	Annual depr.	Annual w Interest/ inflation @ 4.0%	fuel /hr.	Fuel $4.00 /gal.	Lubrication (10% of fuel)	Repair & Maint. Cost 1%	TOTAL annual cost	Total of use/ yr	Variable Cost /hour	Fixed Cost /hour	Total Cost per hour
85 HP 4WD Spray w/cab	$85,000	15%	$12,750	12.5	$5,780	$7,457	2.88	$3,456	$346	$850	$12,109	300	$15.51	$24.86	$40.36
60 HP 2WD general/forklift*	$60,000	15%	$9,000	12.5	$4,080	$5,264	1.92	$3,072	$307	$600	$9,243	400	$9.95	$13.16	$23.11
Airblast	$47,000	15%	$7,050	15	$2,663	$3,593				$470	$4,063	200	$2.35	$17.97	$20.32
Weed Sprayer	$15,000	15%	$2,250	15	$850	$1,147				$150	$1,297	120	$1.25	$9.56	$10.81
Fertilizer Spreader	$8,000	15%	$1,200	15	$453	$612				$80	$692	40	$2.00	$15.29	$17.29
Rotary Mower	$8,000	15%	$1,200	10	$680	$838				$80	$918	100	$0.80	$8.38	$9.18
Flail Chopper	$10,000	15%	$1,500	10	$850	$1,048				$100	$1,148	100	$1.00	$10.48	$11.48
Water Tank	$12,000	48%	$5,760	20	$312	$459				$120	$579	40	$3.00	$11.48	$14.48
Hedger	$26,000	15%	$3,900	15	$1,473	$1,988				$260	$2,248	200	$1.30	$9.94	$11.24
Box shuttle/ fresh pack trailer	$12,000	15%	$1,800	15	$680	$917				$120	$1,037	200	$0.60	$4.59	$5.19
Forklift	$86,000	15%	$12,900	15	$4,873	$6,575	2.40	$2,160	$216	$860	$9,811	225	$14.38	$29.22	$43.60

* We assume 800 hours of total use for this category, but because two tractors are needed on hand we allocate for 400 hours each.

Table A20a. Establishment costs for fresh market peaches

ESTABLISHMENT COSTS FRESH Peaches	Time	Labor Rate	Materials	Equipment Rate		Subtotal	TOTAL
	Hours/ Acre	$/Hour	or **Custom Cost** $/ Acre	$/Hour Variable (cash)	$/Hour, Fixed (non-cash)	$/Acre	**$/Acre**
Pre-plant (Year 0)							
Land Clearing			$600.00			$600.00	
Roots and Rocks -- all in cost			$350.00			$350.00	
Tillage -- various tasks, all in			$100.00			$100.00	
Cover crop -- all in			$50.00			$50.00	
					Total Pre-plant costs		**$1,100**
Planting -- Spring of Year 1							
Tree costs							
$13 per tree x 270 trees per acre			$3,510.00			$3,510.00	
Planting							
Preparation and row marking	1.0	$31.00				$31.00	
4 laborers for 1 hour per acre	4.0	$26.00				$104.00	
85 HP Tractor and driver, planter	1.0	$31.00		$15.51	$24.86	$71.36	
Seeding grass middles							
All in cost, seed plus planting			$50.00			$50.00	
					Total Planting costs		**$3,766**
Growing Years 1 & 2							
Pruning -- $1 per tree, early years			$270.00			$270.00	
Brush Chopping -- 50% of full costs	0.5	$31.00				$15.50	
85 HP tractor	0.5			$15.51	$24.86	$20.18	
Flail mower	0.5			$1.00	$10.48	$5.74	
Mouse Bait - $20 all in cost			$20.00			$20.00	
Tree Painting (Year 1 only so 50% allocation in subtotal)	1.0	$26.00				$13.00	
Paint (assuming 2 gallons/acre)			$20.00			$10.00	
Fertilizer	0.4	$31.00				$12.40	
60 HP tractor	0.4			$9.95	$13.16	$9.24	
Spreader	0.4			$2.00	$15.29	$6.92	
Materials, 40% of full program			$97.73			$97.73	
Mowing							
4 trips/year at .25 hours/trip	1.0	$31.00				$31.00	

(more)

Table A20a. Establishment costs for fresh market peaches (cont.)

ESTABLISHMENT COSTS FRESH Peaches	Time	Labor Rate	Materials	Equipment Rate		Subtotal	TOTAL
	Hours/ Acre	$/Hour	or **Custom Cost** $/ Acre	$/Hour Variable (cash)	$/Hour, Fixed (non-cash)	$/Acre	**$/Acre**
60 HP tractor	1.0			$9.95	$13.16	$23.11	
Rotary Mower	1.0			$0.80	$8.38	$9.18	
Crop Protection							
Materials, 40% of full program			$222.00			$222.00	
Total for 7 trips/year	1.0	$31.00				$30.05	
85 HP tractor	1.0			$15.51	$24.86	$39.12	
Airblast Sprayer	1.0			$2.35	$17.97	$19.69	
Herbicide							
3 trips/year at .33 hours/trip	1.0	$31.00				$31.00	
60 HP tractor	1.0			$9.95	$13.16	$23.11	
Weed sprayer	1.0			$1.25	$9.56	$10.81	
Replants -- 6 total (Year 2 only so 50% allocation on subtotal)			$78.00			$39.00	
Porta-potties			$22.00			$22.00	
Land control costs			$400.00			$400.00	
Real estate tax			$26.00			$26.00	
Management	5.0	$40.00				$200.00	
Credit line interest							
9% APR on costs avg 4 months			$48.20			$48.20	

Total Year 1 Operating Costs	**$1,655**
Total Year 2 Operating Costs	**$1,655**
Growing years 3 - 5 partial allocation*	**$1,931**
TOTAL Establishment Costs	**$10,107**
Spin down years 11-14 partial allocation**	**$3,387**
TOTAL ESTABLISHMENT & SPIN DOWN COSTS	**$13,494**
Allocation per year, for 12 production years	**$1,125**

*Years 3 to 5 have an average 61% of full production, therefore 39% x base early year cost/year is attributed to establishment.

** Years 11 to 14 have an average 79% production, therefore 21% x base producdtion year cost/ year is attributed to spin down costs.

Table A20b. Full production operating costs for fresh market peaches

Operating and harvest costs, and cost totals for Michigan FRESH peach production, 2024							
Based on the full production years during the 14 year total orchard life							
OPERATING COSTS	**Time**	**Labor Rate[1]**	**Materials**	**Equipment Rate**		**Subtotal**	**TOTALS**
	Hours/ Acre	$/Hour	or **Custom Cost** $/ Acre	$/Hour variable (cash)	$/Hour fixed (Deprec.)	$/Acre	**$/Acre**
Pruning and brush disposal							**$825**
-Piece rate $2.75 x 270 trees[1]			$742.50			$742.50	
-85 HP Tractor for Brush Disposal	1.0	$31.00		$15.51	$24.86	$71.36	
-Flail Chopper	1.0			$1.00	$10.48	$11.48	
Hand Thinning							**$810**
-Piece rate $3.00 x 270 trees[1]			$810.00			$810.00	
Mowing -- Total for 4 trips per year							**$63**
-60 HP tractor	1.0	$31.00		$9.95	$13.16	$54.11	
-Rotary mower	1.0			$0.80	$8.38	$9.18	
Crop protection -- Total for 13 trips per year							**$746**
-85 HP tractor	1.8	$31.00		$15.51	$24.86	$128.45	
-Orchard Sprayer	1.8			$2.35	$17.97	$36.57	
-Labor to put out ties for borer control	1.0	$26.00				$26.00	
-Total material costs (including $50 for borer ties)			$555.00			$555.00	
Herbicide -- Total for 3 trips per year							**$151**
-60 HP tractor	0.9	$31.00		$9.95	$13.16	$48.70	
-Weed sprayer	0.9			$1.25	$9.56	$9.73	
-Total material costs			$93.00			$93.00	
Fertilizer							**$273**
-60 HP Tractor for dry app 2x /year	0.4	$31.00		$9.95	$13.16	$21.64	
-Spreader	0.4			$2.00	$15.29	$6.92	
-Dry material costs, including micros			$179.31			$179.31	
-Foliar material costs[2]			$50.00			$50.00	
-Limestone			$15.00			$15.00	
Other Operating							**$624**
Property taxes per acre			$26.00			$26.00	
Soil testing -- every 3 years @ $12/acre			$4.00			$4.00	
Crop insurance			$300.00			$300.00	
Food safety compliance			$30.00			$30.00	
Porta-potties			$22.00			$22.00	
Management and labor supervision	5.0	$40.00				$200.00	
Pickup use - 60 miles/acre x $.70 IRS rate			$42.00			$42.00	
					TOTAL OPERATING COSTS		**$3,493**

Table A20c. Harvest costs and cost totals for fresh market peaches

HARVEST COSTS	Rate/ Bushel	Total Crop Yield/ Acre (in 50 lb. bushels)		Percent of Crop	Harvested Bushels	Subtotal	TOTALS /acre
Hand Harvest, packed on farm		**300**		**50%**	**150**		**$1,787**
-All in per bushel harvest cost, including labor, field transport, supervision, & repacking[1]	$6.00				150	$900.00	
-Packaging (half bushel cardboard boxes at $2.65/ bu	$5.30				150	$795.00	
-Cooling costs (operation and overhead)	$0.15				150	$22.50	
-Wood basket replacement (5%/ year @ $4.60 per half bushel/ $9.20 per bushel)	$0.46				150	$69.00	
Hand Harvest, sent to Packer		**300**		**50%**	**150**		**$596**
-All in per bushel harvest cost, including labor, field transport, supervision, & trucking to packer[1]	$3.75				150	$562.50	
-10 bushel plastic bin replacement cost (3% per year)	Bins/Year				Cost/Bin		
	0.45				$75.00	$33.75	
						TOTAL HARVEST COSTS	**$2,383**
Farm Credit Line Interest -- on VARIABLE operating and harvest costs, 9% APR for average 4 months						$172	
Establishment and Spin-down Costs[3] -- Per year, spread over 12 bearing years						$1,125	
Land Control Cost						$400	
Michigan Tree Fruit Commission Assessment Fees @ $0.001/lb.						$15	
						TOTAL ESTABLISHMENT, LAND, FEE AND INTEREST COSTS	**$1,711**
						GRAND TOTAL COSTS per Acre	**$7,587**
Total Operating & Harvest Cost per bushel						$19.59	
Total Establishment/Spin-down, Land, Fee and Interest Cost per bushel						$5.70	
				GRAND TOTALS		**$25.29**	per Bushel
						$0.51	per Pound

[1] Pruning, picking, and packing labor are based on interview and focus group estimates, and are inclusive of domestic and/or H2A labor costs including farm labor contracting costs and benefits such as housing.
[2] Foliar materials are applied with crop protectants, so it is assumed there are no substantial additional application costs.
[3] Establishment costs are costs for preperation, planting, and pre-harvest years, and allocations for early years with less than full yield. Spin down costs are allocations for years at the end of the planting life that have less than full yield.

Table A21a. Establishment costs for processing market peaches

ESTABLISHMENT COSTS PROCESSOR Peaches	Time	Labor Rate	Materials	Equipment Rate		Subtotal	TOTAL
	Hours/ Acre	$/Hour	or **Custom Cost** $/Acre	$/Hour Variable (cash)	$/Hour, Fixed (non-cash)	$/Acre	**$/Acre**
Pre-plant (Year 0)							
Land Clearing			$600.00			$600.00	
Roots and Rocks -- all in cost			$350.00			$350.00	
Tillage -- various tasks, all in			$100.00			$100.00	
Cover crop -- all in			$50.00			$50.00	
					Total Pre-plant costs		**$1,100**
Planting -- Spring of Year 1							
Tree costs							
$11 per tree x 227 trees per acre			$2,497.00			$2,497.00	
Planting							
Preparation and row marking	1.0	$31.00				$31.00	
4 laborers for 1 hour per acre	4.0	$26.00				$104.00	
85 HP Tractor and driver, planter	1.0	$31.00		$15.51	$24.86	$71.36	
Seeding grass middles							
All in cost, seed plus planting			$50.00			$50.00	
Deer fence			$500.00			$500.00	
					Total Planting costs		**$3,253**
Growing Years 1 & 2							
Pruning -- $1 per tree, early years			$227.00			$227.00	
Brush Chopping -- 50% of full costs	0.5	$31.00				$15.50	
85 HP tractor	0.5			$15.51	$24.86	$20.18	
Flail mower	0.5			$1.00	$10.48	$5.74	
Mouse Bait - $20 all in cost			$20.00			$20.00	
Tree Painting (Year 1 only so 50% allocation in subtotal)	1.0	$26.00				$13.00	
Paint (assuming 2 gallons/ acre)			$20.00			$10.00	
Fertilizer	0.4	$31.00				$12.40	
60 HP tractor	0.4			$9.95	$13.16	$9.24	
Spreader	0.4			$2.00	$15.29	$6.92	
Materials, 40% of full program			$97.73			$97.73	

(more)

Table A21a. Establishment costs for processing market peaches (cont.)

ESTABLISHMENT COSTS PROCESSOR Peaches	Time	Labor Rate	Materials	Equipment Rate		Subtotal	TOTAL
	Hours/ Acre	$/Hour	or **Custom Cost** $/Acre	$/Hour Variable (cash)	$/Hour, Fixed (non-cash)	$/Acre	**$/Acre**
Mowing							
4 trips/year at .25 hours/trip	1.0	$31.00				$31.00	
60 HP tractor	1.0			$9.95	$13.16	$23.11	
Rotary Mower	1.0			$0.80	$8.38	$9.18	
Crop Protection							
Materials, 40% of full program			$222.00			$222.00	
Total for 7 trips/year	1.0	$31.00				$30.05	
85 HP tractor	1.0			$15.51	$24.86	$39.12	
Airblast Sprayer	1.0			$2.35	$17.97	$19.69	
Herbicide							
3 trips/year at .33 hours/trip	1.0	$31.00				$31.00	
60 HP tractor	1.0			$9.95	$13.16	$23.11	
Weed sprayer	1.0			$1.25	$9.56	$10.81	
Replants -- 6 total (Year 2 only so 50% allocation on subtotal)			$66.00			$33.00	
Porta-potties			$22.00			$22.00	
Land control costs			$400.00			$400.00	
Real estate tax			$26.00			$26.00	
Management	5.0	$40.00				$200.00	
Credit line interest							
9% APR on costs avg 4 months			$46.73			$46.73	

*Years 3 to 5 have an average 60% production, therefore 40% x base early year cost/year is attributed to establishment.

** Years 15 to 18 have an average 85% production, therefore 15% x production year cost/ year is attributed to spin down costs.

Total Year 1 Operating Costs	**$1,605**
Total Year 2 Operating Costs	**$1,605**
Growing years 3 - 5 partial allocation*	**$1,605**
TOTAL Establishment Costs	**$9,167**
Spin down years 15-18 partial allocation**	**$3,202**
TOTAL ESTABLISHMENT & SPIN DOWN COSTS	**$12,369**
Allocation per year, for 16 production years	**$773**

Table A21b. Full production operating costs for processing market peaches

Operating and harvest costs, and cost totals for Michigan PROCESSED peach production, 2024							
Based on the full production years during the 18 year total orchard life							
OPERATING COSTS	**Time**	**Labor Rate[1]**	**Materials**	**Equipment Rate**		**Subtotal**	**TOTALS**
	Hours/ Acre	$/Hour	or **Custom Cost** $/ Acre	$/Hour variable (cash)	$/Hour fixed (Deprec.)	$/Acre	**$/Acre**
Pruning and brush disposal							**$707**
-Piece rate $2.75 x 227 trees[1]			$624.25			$624.25	
-85 HP Tractor for Brush Disposal	1.0	$31.00		$15.51	$24.86	$71.36	
-Flail Chopper	1.0			$1.00	$10.48	$11.48	
Hand Thinning							**$681**
-Piece rate $3.00 x 227 trees[1]			$681.00			$681.00	
Mowing -- Total for 4 trips per year							**$63**
-60 HP tractor	1.0	$31.00		$9.95	$13.16	$54.11	
-Rotary mower	1.0			$0.80	$8.38	$9.18	
Hedging							**$131**
-60 HP tractor	2.0	$31.00		$9.95	$13.16	$108.22	
-Hedger	2.0			$1.30	$9.94	$22.48	
Crop protection -- Total for 13 trips per year							**$692**
-85 HP tractor	2.3	$31.00		$15.51	$24.86	$164.14	
-Orchard Sprayer	2.3			$2.35	$17.97	$46.73	
-Total material costs			$481.00			$481.00	
Herbicide -- Total for 3 trips per year							**$151**
-60 HP tractor	0.9	$31.00		$9.95	$13.16	$48.70	
-Weed sprayer	0.9			$1.25	$9.56	$9.73	
-Total material costs			$93.00			$93.00	
Fertilizer							**$276**
-60 HP Tractor for dry app 2x /year	0.4	$31.00		$9.95	$13.16	$21.64	
-Spreader	0.4			$2.00	$15.29	$6.92	
-Dry material costs, including micros			$207.38			$207.38	
-Foliar material costs[2]			$25.00			$25.00	
-Limestone			$15.00			$15.00	

(more)

Table A21b. Full production operating costs for processing market peaches (cont.)

Operating and harvest costs, and cost totals for Michigan PROCESSED peach production, 2024							
Based on the full production years during the 18 year total orchard life							
OPERATING COSTS	**Time**	**Labor Rate[1]**	**Materials**	**Equipment Rate**		**Subtotal**	**TOTALS**
	Hours/ Acre	$/Hour	or **Custom Cost** $/ Acre	$/Hour variable (cash)	$/Hour fixed (Deprec.)	$/Acre	**$/Acre**
Other Operating							**$624**
Property taxes per acre			$26.00			$26.00	
Soil testing -- every 3 years @ $12/acre			$4.00			$4.00	
Crop insurance			$300.00			$300.00	
Food safety compliance			$30.00			$30.00	
Porta-potties			$22.00			$22.00	
Management and labor supervision	5.0	$40.00				$200.00	
Pickup use -- 60 miles/acre x $.70 IRS rate			$42.00			$42.00	
					TOTAL OPERATING COSTS		**$3,325**

Young open center peach tree at bloom. Photo by Emily Lavely, MSU Extension

Table A21c. Harvest costs and cost totals for processing market peaches

HARVEST COSTS	Rate/ Bushel	Total Crop Yield/ Acre (in 50 lb. bushels)	Harvested Bushels	Subtotal	TOTALS / acre
Hand Harvest, sent to Processor		**300**	**300**		**$725**
- Hand harvest cost per bushel[1]	$1.75		300	$525.00	
- Harvest supervision & tractor hauling labor (3 hours/acre total x $31)	$0.31		300	$93.00	
- Tractor cost (1 hour equipment usage/acre)	$0.08		300	$23.11	
- Forklift cost (.5 hours equipment usage/acre)	$0.03		300	$8.64	
- Trucking ($5 per 20 bushel bin, all in)	$0.25		300	$75.00	
				TOTAL HARVEST COSTS	**$725**
Farm Credit Line Interest -- on VARIABLE operating and harvest costs, 9% APR for average 4 months				$117	
Establishment and Spin-down Costs[3] -- Per year, spread over 16 bearing years				$773	
Land Control Cost				$400	
Michigan Tree Fruit Commission Assessment Fees @ $0.001/lb.				$15	
				TOTAL ESTABLISHMENT, LAND, FEE AND INTEREST COSTS	**$1,305**
				GRAND TOTAL COSTS per Acre	**$5,355**
Total Operating & Harvest Cost per bushel				$13.50	
Total Establishment, Land, Fee and Interest Cost per bushel				$4.35	
			GRAND TOTALS	**$17.85**	per Bushel
				$0.36	per Pound

[1] Pruning, picking, and packing labor are based on interview and focus group estimates, and are inclusive of domestic and/or H2A labor costs including farm labor contractor costs and benefits such as housing.

[2] Foliar materials are applied with crop protectants, so it is assumed there are no substantial additional application costs.

[3] Establishment costs are costs for preperation, planting, and pre-harvest years, and allocations for early years with less than full yield. Spin down costs are allocations for years at the end of the planting life that have less than full yield.

Table A22. Cost breakdown by cost category and yield, fresh peaches

FRESH PEACHES*	YIELD - Bushels per acre									
	150	200	250	300	350	400	450	500	550	600
Operating & Harvest costs/acre:										
Cultural** -	$2,703	$2,703	$2,703	$2,703	$2,703	$2,703	$2,703	$2,703	$2,703	$2,703
Harvest -	$1,199	$1,599	$1,998	$2,398	$2,797	$3,197	$3,597	$3,996	$4,396	$4,796
Credit Line Interest -	$135	$147	$159	$171	$182	$194	$206	$218	$230	$242
TOTAL Operating & Harvest costs/ acre:	**$4,037**	**$4,449**	**$4,860**	**$5,272**	**$5,682**	**$6,094**	**$6,506**	**$6,917**	**$7,329**	**$7,741**
TOTAL Operating & Harvest costs/ bu:	**$26.91**	**$22.25**	**$19.44**	**$17.57**	**$16.23**	**$15.24**	**$14.46**	**$13.83**	**$13.33**	**$12.90**
Total Overhead*** costs/acre:	$2,314	$2,314	$2,314	$2,314	$2,314	$2,314	$2,314	$2,314	$2,314	$2,314
TOTAL COSTS per acre:	**$6,351**	**$6,763**	**$7,174**	**$7,586**	**$7,996**	**$8,408**	**$8,820**	**$9,231**	**$9,643**	**$10,055**
TOTAL COSTS per bu:	**$42.34**	**$33.82**	**$28.70**	**$25.29**	**$22.85**	**$21.02**	**$19.60**	**$18.46**	**$17.53**	**$16.76**

* Assumes 50%/50% split between direct and packer, $48 direct wholesale/bulk price, and $24 price from the packer.
** "Cultural" costs include pruning, hand thinning, mowing, crop protection, herbicide and fertilizer.
*** Overhead costs include land control, establishment, equipment depreciation & other overhead expenses such as food safety and crop insurance.

Table A23. Effects of a rise in input costs, fresh peaches

Effect of non-labor variable inputs on total per acre costs on FRESH PEACH budget.*			
% Increase in input prices	Increase in cost per acre	Resulting total costs per acre	% increase in total costs
5%	$114	$7,701	2%
10%	$228	$7,815	3%
15%	$342	$7,929	5%
20%	$457	$8,044	6%
25%	$571	$8,158	8%

* Assumes 50%/50% split between direct wholesale/ bulk and packer sales.

Table A24. Effects of a rise in labor costs, fresh peaches.

Effect of labor prices on total per acre costs on FRESH PEACH budget.*			
% Increase in labor price	Increase in cost per acre	Resulting total costs per acre	% increase in total costs
5%	$152	$7,739	2%
10%	$303	$7,890	4%
15%	$455	$8,042	6%
20%	$607	$8,194	8%
25%	$758	$8,345	10%

* Assumes 50%/50% split between direct wholesale/ bulk and packer sales.

Table A25. Net cash flow for fresh peach planting, 50% packer/50% direct wholesale/bulk sales

Year	0	1	2	3	4	5	6	7
Costs	$4,866	$1,655	$1,655	$4,815	$5,638	$6,050	$6,461	$6,461
Revenue	$0	$0	$0	$3,600	$7,200	$9,000	$10,800	$10,800
Cash flow	-$4,866	-$1,655	-$1,655	-$1,215	$1,562	$2,950	$4,339	$4,339
Sum of NCFs	-$4,866	-$6,521	-$8,176	-$9,391	-$7,829	-$4,879	-$540	$3,799

8	9	10	11	12	13	14
$6,461	$6,461	$6,461	$6,255	$6,050	$5,844	$5,638
$10,800	$10,800	$10,800	$9,900	$9,000	$8,100	$7,200
$4,339	$4,339	$4,339	$3,645	$2,950	$2,256	$1,562
$8,138	$12,477	$16,816	$20,461	$23,411	$25,667	$27,229

Table A26. Fresh peach revenue and cost calculator for direct wholesale/bulk market sales

Revenue Calculation Table, DIRECT (Wholesale/ Bulk)										
			Costs							
Revenues			Operating & Harvest Costs			Overhead Costs			Net Returns	
Price	Yield (bu)	Totals	Cultural*	Harvest	Credit Line Interest	Establishment & Spin Down	Land Control	Other Overhead**	Net Returns over Operating & Harvest Costs	Net Returns over Total Costs (Profits)
$48.00	300	$14,400	$2,703	$3,588	$207	$1,125	$426	$764	$7,902	$5,588

* "Cultural" costs include pruning, hand thinning, mowing, crop protection, herbicide and fertilizer.

** "Other Overhead" costs include equipment depreciation & other operating expenses such as food safety, crop insurance, and soil testing)

Table A27. Net returns over operating & harvest costs for direct wholesale/bulk fresh market sales.

Net Return over OPERATING & HARVEST costs per acre, FRESH Peaches SOLD DIRECT W/B								= **breakeven** or better		
	Fresh Yield - Bushels per Acre									
PRICE per Bushel	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**
$42.00	$1,650	$3,134	$4,618	$6,102	$7,586	$9,070	$10,554	$12,038	$13,522	$15,007
$44.00	$1,950	$3,534	$5,118	$6,702	$8,286	$9,870	$11,454	$13,038	$14,622	$16,207
$46.00	$2,250	$3,934	$5,618	$7,302	$8,986	$10,670	$12,354	$14,038	$15,722	$17,407
$48.00	$2,550	$4,334	$6,118	$7,902	$9,686	$11,470	$13,254	$15,038	$16,822	$18,607
$50.00	$2,850	$4,734	$6,618	$8,502	$10,386	$12,270	$14,154	$16,038	$17,922	$19,807
$52.00	$3,150	$5,134	$7,118	$9,102	$11,086	$13,070	$15,054	$17,038	$19,022	$21,007

Table A28. Profits per acre, fresh peaches sold in direct wholesale/bulk markets.

Net return over TOTAL costs/ acre, FRESH Peaches SOLD DIRECT W/B								= **breakeven** or better		
	Fresh Yield - Bushels per Acre									
PRICE per Bushel	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**
$42.00	($664)	$820	$2,304	$3,788	$5,272	$6,756	$8,240	$9,724	$11,208	$12,692
$44.00	($364)	$1,220	$2,804	$4,388	$5,972	$7,556	$9,140	$10,724	$12,308	$13,892
$46.00	($64)	$1,620	$3,304	$4,988	$6,672	$8,356	$10,040	$11,724	$13,408	$15,092
$48.00	$236	$2,020	$3,804	$5,588	$7,372	$9,156	$10,940	$12,724	$14,508	$16,292
$50.00	$536	$2,420	$4,304	$6,188	$8,072	$9,956	$11,840	$13,724	$15,608	$17,492
$52.00	$836	$2,820	$4,804	$6,788	$8,772	$10,756	$12,740	$14,724	$16,708	$18,692

Table A29. Fresh peach revenue and cost calculator for sales to packers

Revenue Calculation Table, Delivery to PACKER										
			Costs							
Revenues			Operating & Harvest Costs			Overhead Costs			Net Returns	
Price	Yield (bu)	Totals	Cultural*	Harvest	Credit Line Interest	Establishment & Spin Down	Land Control	Other Overhead**	Net Returns over Operating & Harvest Costs	Net Returns over Total Costs (Profits)
$24.00	300	$7,200	$2,703	$1,208	$135	$1,125	$426	$764	$3,154	$840

* "Cultural" costs include pruning, hand thinning, mowing, crop protection, herbicide and fertilizer.

** "Other Overhead" costs include equipment depreciation & other expenses such as food safety, crop insurance, and soil testing)

Table A30. Net returns over operating & harvest costs for fresh peaches delivered to packers

Net Return over OPERATING & HARVEST costs per acre, FRESH Peaches DELIVERED to PACKER								= **breakeven** or better		
	Fresh Yield - Bushels per Acre									
PRICE per Bushel	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**
$18.00	($724)	($31)	$661	$1,354	$2,047	$2,740	$3,432	$4,125	$4,818	$5,510
$20.00	($424)	$369	$1,161	$1,954	$2,747	$3,540	$4,332	$5,125	$5,918	$6,710
$22.00	($124)	$769	$1,661	$2,554	$3,447	$4,340	$5,232	$6,125	$7,018	$7,910
$24.00	$176	$1,169	$2,161	$3,154	$4,147	$5,140	$6,132	$7,125	$8,118	$9,110
$26.00	$476	$1,569	$2,661	$3,754	$4,847	$5,940	$7,032	$8,125	$9,218	$10,310
$28.00	$776	$1,969	$3,161	$4,354	$5,547	$6,740	$7,932	$9,125	$10,318	$11,510

Table A31. Profits per acre, fresh peaches delivered to packers

Net Return over TOTAL costs/ acre, FRESH Peached DELIVERED to PACKER								= **breakeven** or better		
	Fresh Yield - Bushels per Acre									
PRICE per Bushel	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**
$18.00	($3,038)	($2,346)	($1,653)	($960)	($268)	$425	$1,118	$1,811	$2,503	$3,196
$20.00	($2,738)	($1,946)	($1,153)	($360)	$432	$1,225	$2,018	$2,811	$3,603	$4,396
$22.00	($2,438)	($1,546)	($653)	$240	$1,132	$2,025	$2,918	$3,811	$4,703	$5,596
$24.00	($2,138)	($1,146)	($153)	$840	$1,832	$2,825	$3,818	$4,811	$5,803	$6,796
$26.00	($1,838)	($746)	$347	$1,440	$2,532	$3,625	$4,718	$5,811	$6,903	$7,996
$28.00	($1,538)	($346)	$847	$6,040	$3,232	$4,425	$5,618	$6,811	$8,003	$9,196

Table A32. Net cash flow for fresh peach planting for sales to direct wholesale/bulk markets

Year	0	1	2	3	4	5	6	7
Costs	$4,866	$1,655	$1,655	$5,224	$6,456	$7,072	$7,688	$7,688
Revenue	$0	$0	$0	$4,800	$9,600	$12,000	$14,400	$14,400
Cash flow	-$4,866	-$1,655	-$1,655	-$424	$3,144	$4,928	$6,712	$6,712
Sum of NCFs	-$4,866	-$6,521	-$8,176	-$8,600	-$5,456	-$528	$6,184	$12,896

8	9	10	11	12	13	14
$7,688	$7,688	$7,688	$7,380	$7,072	$6,764	$6,456
$14,400	$14,400	$14,400	$13,200	$12,000	$10,800	$9,600
$6,712	$6,712	$6,712	$5,820	$4,928	$4,036	$3,144
$19,608	$26,320	$33,032	$38,852	$43,780	$47,816	$50,960

Figure A7. Annual net cash flow for direct wholesale/bulk sales, at current yield and price assumptions

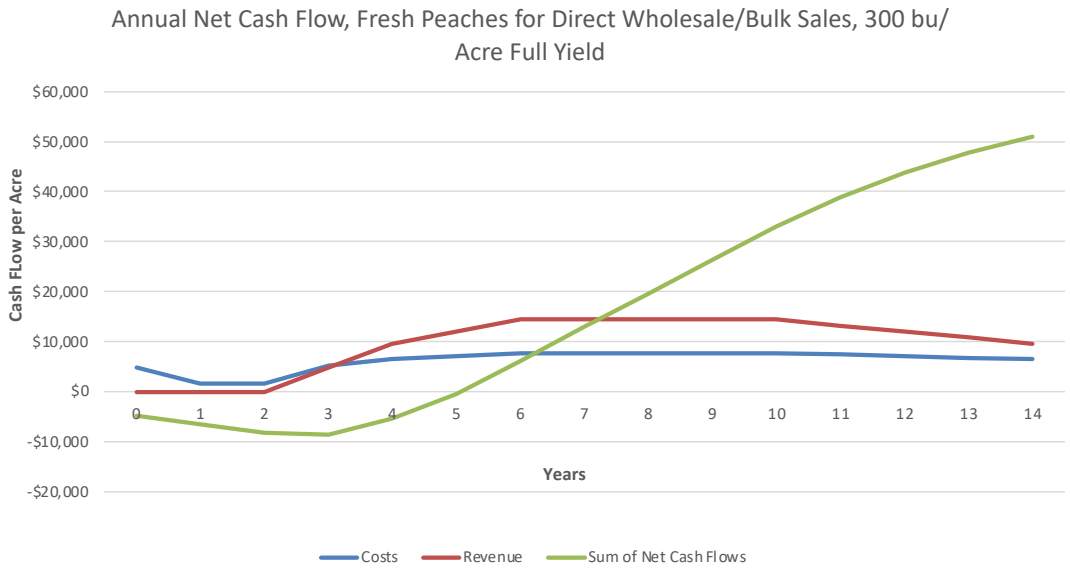

Table A33. Net cash flow for fresh peach planting, deliver to packers

Year	0	1	2	3	4	5	6	7
Costs	$4,866	$1,655	$1,655	$4,407	$4,821	$5,028	$5,236	$5,236
Revenue	$0	$0	$0	$2,400	$4,800	$6,000	$7,200	$7,200
Cash flow	-$4,866	-$1,655	-$1,655	-$2,007	-$21	$972	$1,964	$1,964
Sum of NCFs	-$4,866	-$6,521	-$8,176	-$10,183	-$10,204	-$9,232	-$7,268	-$5,304

8	9	10	11	12	13	14
$5,236	$5,236	$5,236	$5,132	$5,028	$4,925	$4,821
$7,200	$7,200	$7,200	$6,600	$6,000	$5,400	$4,800
$1,964	$1,964	$1,964	$1,468	$972	$475	-$21
-$3,340	-$1,376	$588	$2,056	$3,028	$3,503	$3,482

Table A34. Cost breakdown by cost category and yield, processor peaches

	YIELD - Bushels per acre									
	150	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**
Operating & Harvest costs/acre:										
Cultural** -	$2,468	$2,468	$2,468	$2,468	$2,468	$2,468	$2,468	$2,468	$2,468	$2,468
Harvest -	$369	$492	$615	$738	$861	$984	$1,107	$1,230	$1,353	$1,477
Credit Line Interest -	$103	$106	$110	$114	$117	$121	$125	$128	$132	$135
TOTAL Operating & Harvest costs/acre:	**$2,940**	**$3,066**	**$3,193**	**$3,320**	**$3,446**	**$3,573**	**$3,700**	**$3,826**	**$3,953**	**$4,080**
TOTAL Operating & Harvest costs/bu:	$19.60	$15.33	$12.77	$11.07	$9.85	$8.93	$8.22	$7.65	$7.19	$6.80
Total Overhead*** costs / acre:	$2,030	$2,030	$2,030	$2,030	$2,030	$2,030	$2,030	$2,030	$2,030	$2,030
TOTAL COSTS per acre:	**$4,970**	**$5,096**	**$5,223**	**$5,350**	**$5,476**	**$5,603**	**$5,730**	**$5,856**	**$5,983**	**$6,110**
TOTAL COSTS per bu:	$33.13	$25.48	$20.89	$17.83	$15.65	$14.01	$12.73	$11.71	$10.88	$10.18

* Assumes $0.33 for 2.5"+, $0.20 for 2.375"-2.5", and 75% making 2.5"+ grade, 15% making 2.375"-2.5" grade.

** "Cultural" costs include pruning, hand thinning, mowing, crop protection, herbicide and fertilizer.

*** Overhead costs include land control, establishment, equipment depreciation & other overhead expenses such as food safety and crop insurance.

Table A35. Effects of a rise in input costs, processor peaches.

Effect of non-labor variable inputs on total per acre costs on **PROCESSOR PEACH** budget.			
% Increase in input prices	Increase in cost per acre	Resulting total costs per acre	% increase in total costs
5%	$54	$5,409	1%
10%	$108	$5,463	2%
15%	$162	$5,517	3%
20%	$216	$5,571	4%
25%	$270	$5,625	5%

Table A36. Effects of a rise in labor costs, processor peaches.

Effect of labor prices on total per acre costs on **PROCESSOR PEACH** budget.			
% Increase in labor price	Increase in cost per acre	Resulting total costs per acre	% increase in total costs
5%	$120	$5,475	2%
10%	$240	$5,595	4%
15%	$359	$5,715	7%
20%	$479	$5,834	9%
25%	$599	$5,954	11%

Table A37. Net cash flow for processor peach plantings, 300 bu./acre yield and current prices

Year	0	1	2	3	4	5	6	7
Costs	$4,353	$1,605	$1,605	$4,197	$4,324	$4,451	$4,577	$4,577
Revenue	$0	$0	$0	$2,081	$2,775	$3,469	$4,163	$4,163
Cash flow	-$4,353	-$1,605	-$1,605	-$2,116	-$1,549	-$982	-$414	-$414
Sum of NCFs	-$4,353	-$5,958	-$7,563	-$9,679	-$11,228	-$12,210	-$12,624	-$13,038

8	9	10	11	12	13	14	15	16	17	18
$4,577	$4,577	$4,577	$4,577	$4,577	$4,577	$4,577	$4,512	$4,451	$4,387	$4,324
$4,163	$4,163	$4,163	$4,163	$4,163	$4,163	$4,163	$3,816	$3,469	$3,122	$2,775
-$414	-$414	-$414	-$414	-$414	-$414	-$414	-$696	-$982	-$1,265	-$1,549
-$13,452	-$13,866	-$14,280	-$14,694	-$15,108	-$15,522	-$15,936	-$16,632	-$17,614	-$18,879	-$20,428

Figure A8. Annual net cash flow for processing peaches, at current yield and price assumptions