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Indiana Christmas Tree Farming: Planting for the Future

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Christmas tree farms in Indiana are an important source of family tradition and celebration for many Hoosier households. Each November and December families venture off to these rural area agri-tourism establishments in search of the perfect tree to mark their Christmas holiday celebrations. The past several years have seen consistent news stories concerning Christmas tree shortages related to supply chain issues and other disruptions. One such issue leading to the shortage is the decrease in the number of Christmas tree growers and the evolution of consumer preferences (i.e., desired tree type), as well as challenges that stem from changing climate conditions.

Snow-covered pines awaiting next year's Christmas tree shoppers. Photo courtesy of Dull's Tree Farm.

Understanding and reporting on the many challenges farmers have to overcome in order to be successful and maintain a sustainable business model led to this project. This report includes details from the final survey of Indiana Christmas tree

farmers (spring 2020) in comparison to the 2017 survey, as well as details from follow-up telephone interviews with a purposive sample of the responding tree farms (summer 2021). The survey explored the impacts of different factors impacting Indiana Christmas tree farms, including environmental conditions, the role of competition, and market demand and changes, in order to gain a better understanding of the Indiana Christmas trees industry. The purpose of this report is to detail similarities and differences between two studies conducted in the winters of 2017 and 2020 with Indiana u-cut Christmas tree farmers, as well as to share findings from telephone interviews conducted in the summer of 2021. The results of this report are based on survey responses from 33 farmers in 25 counties and in-depth interviews with 19 tree growers. Findings from these studies can better inform farming practices and enhance the sustainability of Christmas tree farming operations in the region.

DEMOGRAPHICS

The mean age of the farmers that responded was 64.2 years of age, having grown Christmas trees for approximately 26 years. The majority of respondents were male, with female participants comprising 12.1% of all survey participants (Table 1). There was no difference between 2017 and 2020 on the number of family members that contributed to the Christmas tree farms, with an average of 4.3 individuals per farm contributing each year. Respondents reported a decrease of 2.3% on the gross income that Christmas trees provide to their farming operation, between 2017-2020. This decrease was not statistically different (p=0.867).

Table 1. Demographic results on age, years of farming and gender.

	Respondents' age (Years of age)			Years farming as an adult			Gender (%)	
Year	Min	Max	Mean	Min	Max	Mean	M	F
2017	41	75	64.2	3	50	26	87.9	12.1
2019	43	77	66.2	1	60	25	87.9	12.1

FARM OPERATION

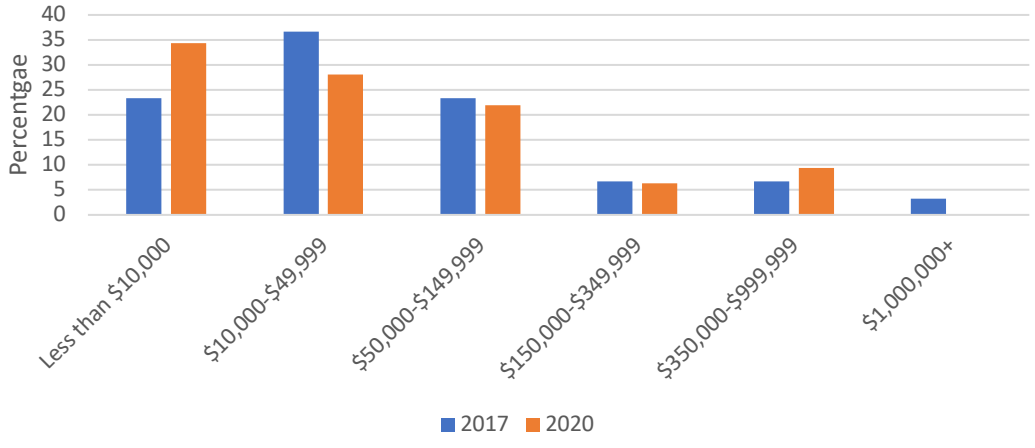
As seen in Table 2, the median number of acres farmed in 2019 was reduced in comparison to 2017 by 1.5 acres, and the median number of land acres planted with Christmas trees decreased by 2 acres overall. In the 2020 results, there was an increase in the farms that reported their gross revenue as less that $10,000, and a decrease in the $10,000-$49,999 bracket. In 2017, there was one operation that reported gross revenue of more than a million dollars but that was not the case for 2020, Graph 1. Most of the farms remained as relatively small operations similar to how they were in 2017.

Table 2. Median values of farmed areas.

Year	Acres farmed	Acres of Christmas trees planted
2017	17.5	10
2019	16	8

Key to Christmas tree farms is finding dependable labor. Most farms have three key busy stretches, planting season (March/April), trimming season (June), and selling season (November/December). Most growers interviewed this summer were dependent on members of their household or extended family. A few of the larger operations had anywhere between 20-120 part-time workers. Labor appears to be less of an issue for small operations, as one grower noted that "We don't have too much of a problem, my wife and I do almost everything ourselves. And then our boys come home for planting and selling seasons. We do get high school kids and pay $12/hr plus tips. They make around $150-$200/day in selling season. We find the kids

Graph 1.
Gross revenue percentage between 2017 and 2020

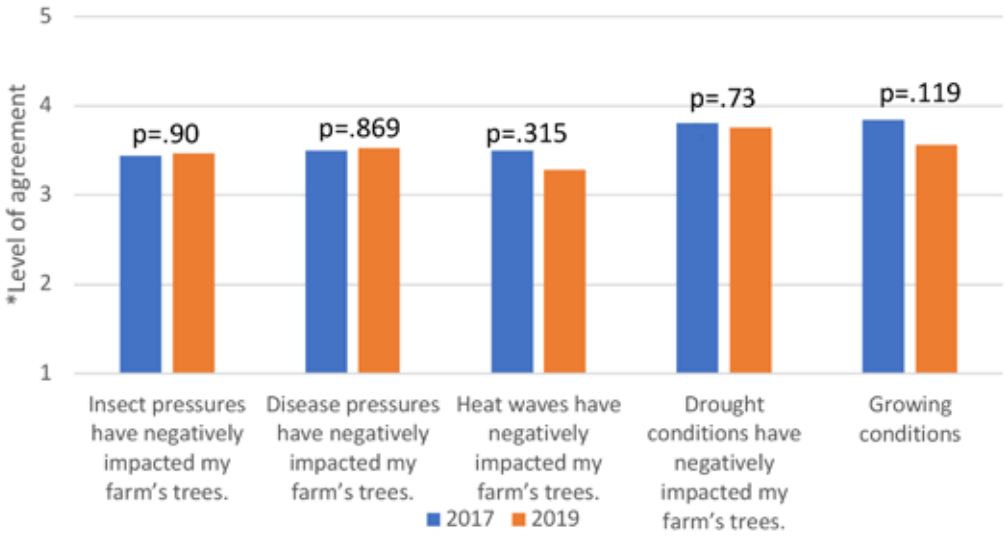


through word of mouth mostly." A grower from a different region stated that, "currently it's not overly difficult. Finding the seasonal help with selling is the most challenging part, but we have friends with kids, my nieces and nephews have been helping. So far we've been fine. Planting and shearing it's just me and my sons." Another grower is starting to see a shift in labor challenges, noting that, "It hadn't been a challenge in years' past, but this year it was terrible."

ENVIRONMENTAL CONDITIONS

Several different elements affecting the farming operation have been identified and are discussed in detail below. Graph 2 shows the impacts of five different environmental conditions on Christmas tree farming operations. No significant differences were found between the two rounds of surveys. The first cluster on the left indicates the responses on the impacts caused by insects. More farmers agreed in 2019 that insects have had a negative impact in their farm compared to the 2017 responses. A similar pattern can be seen with the impact of diseases. Most respondents indicated that heat waves had a bigger impact in the 2017 growing season compared to 2019. Although the majority of the farmers indicated that drought conditions have negatively affected their operation, the impact was voiced greater in 2017 compared to 2019. Additionally, farmers noted that the growing conditions (e.g., soil, moisture, etc.) had a greater impact on their success back in 2017 than compared to their responses in 2019.

Graph 2.
Environmental conditions and their impact on the farm



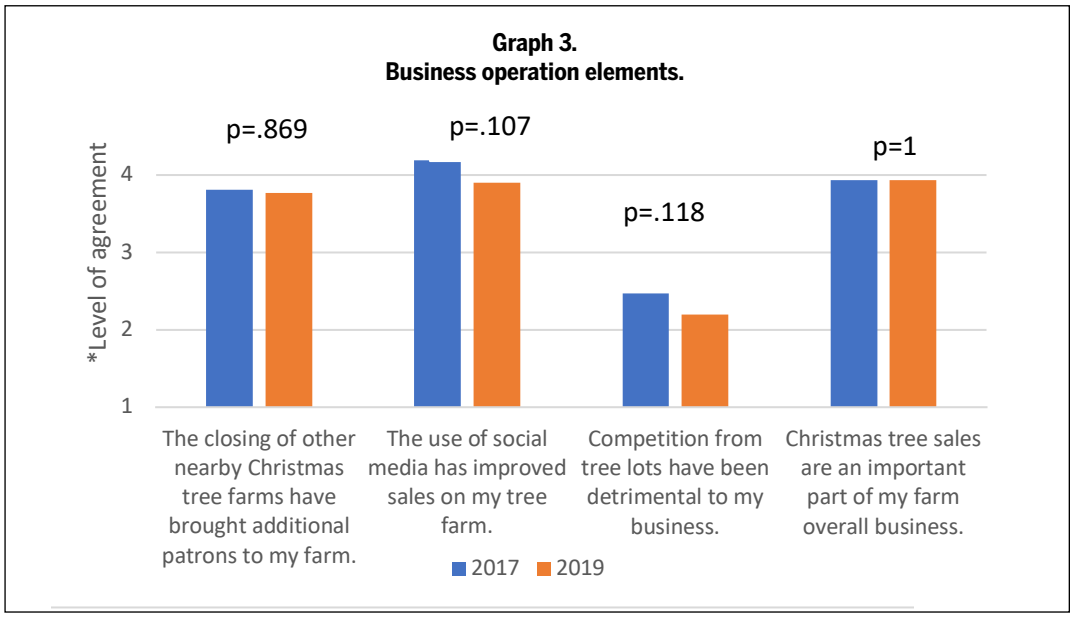
(*1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree)

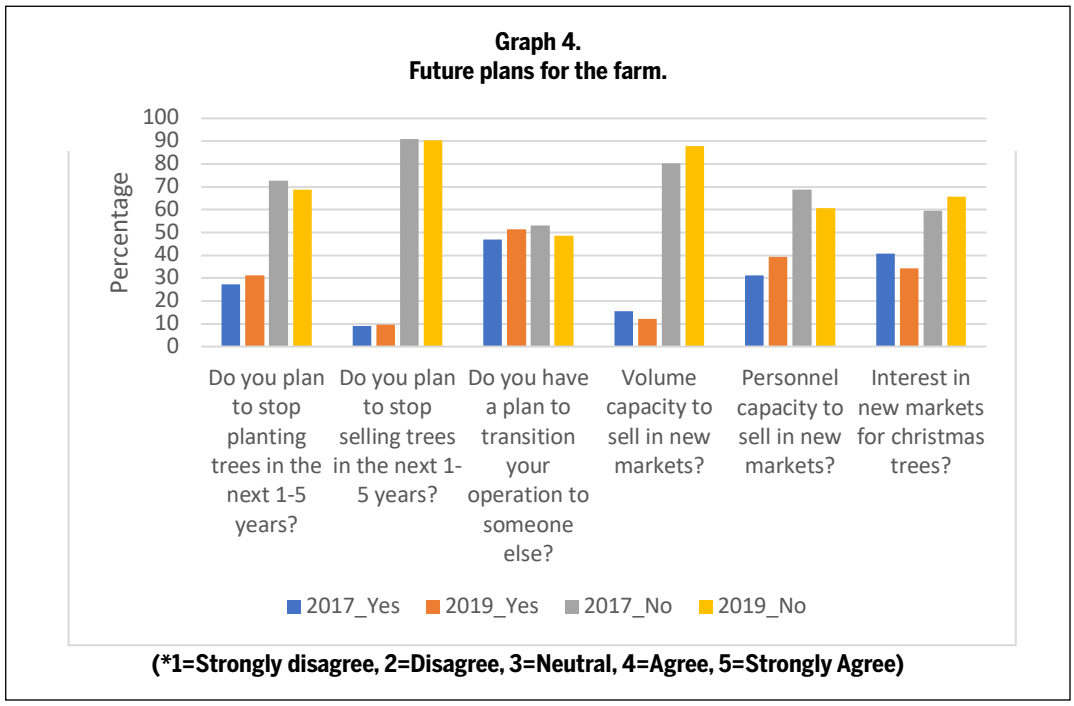
In speaking with growers over the summer of 2021, several people did mention environmental challenges tied to too much moisture in spring and too dry in the late summer and fall, both of which stress trees greatly. One grower discussed that, "The growing season itself was a little stressing beyond the obvious of not knowing what would happen during the Christmas season because of COVID. We planted trees and there was no rain for weeks and they started to wilt and they did start to sprout but we lost a lot over the summer/fall to drought. We finally made a special irrigation system to help prevent drought damage in the future." Multiple growers mentioned needing to irrigate now more than in years past. Alternatively, growers discussed having "A lot of spring rains and had difficulty with fungus. Wiped that (those recently planted trees) out, though. Had another wet spell but I think we got it under control this time. This year there is an insect problem – I'm not quite sure what it is."

BUSINESS OPERATION

Data were solicited on different elements to understand the impact on the business operation, such as the impact of nearby farms closing, the use of social media, competition for other Christmas tree sale venues, and the role of trees in one's overall farm business. Results comparing 2017 and 2019 can be seen below in Graph 3. No significant differences were found. That said, the data do point to some marginal changes as farmers were in less agreement amongst in 2019 compared to the 2017 that the closing of other Christmas trees operation has benefited their own operation. The same pattern can be seen with the use of social media and the competition from other tree operations as being detrimental to their own operation. There was no difference on the importance of Christmas tree sales being an important part of the overall business.

Graph 4 demonstrates the differences between 2017 and 2019 on the future plans and the new market opportunities for the farms. Again, not many significant differences emerged. There is a slight increase on the percentage of farmers reporting a halt in planting new trees; a slight increase on the farmers reporting to stop selling trees; more farmers have a plan now to transition their farm to someone else; there is a decline in the ability to have the appropriate volume capacity for new markets; there is an increase on the amount of personnel necessary to sell in new markets; and the interest to explore new markets has decreased by almost 6% amongst the farmers. Stating such, having a Christmas tree operation is a critical piece of a family's farm business operation. As one grower stated that, "for me it's continuing to keep our family farm being productive – farm has been in family for over 160 years, and I'm the fifth generation – it's something I've grown up with. I directly employ my children and get to pay them."





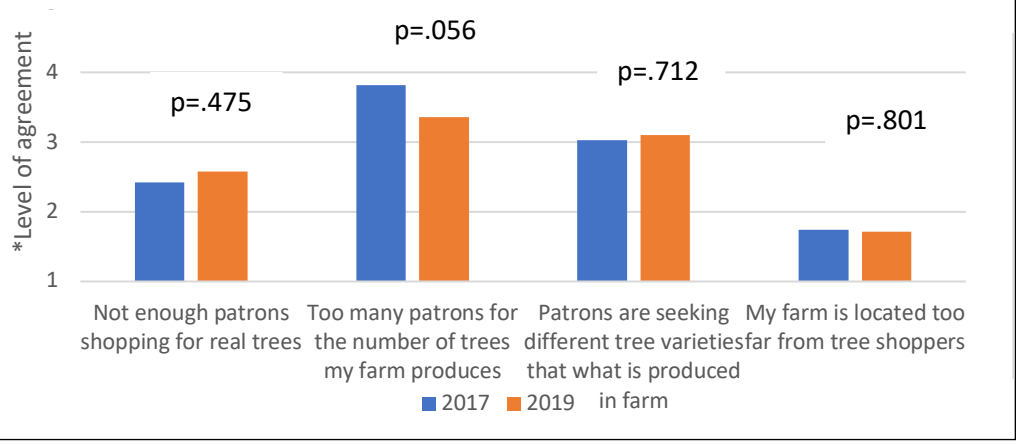
Growers elaborated on how strong the 2020 sales season was. Of the 19 growers interviewed, 17 sold out with most doing so in the first two weekends. The other two farms not selling out discussed being close to closing because of lack of stock to sell. One grower discussed that he "Sold everything I could – sold out – there are never enough trees. When other farms in the area closed, everyone else came to us. Sales have been going up – we don't have enough trees," while others highlight this past season was good or better than any year ever. Another grower discussed the year, stating, "Last year was a huge year! We were wiped out! It was unbelievable. We had been on e-learning (school aged-kids online learning because of COVID-19 school closures) for about two weeks leading up to it and a lot of parents had probably been working from home so people were just so ready to get out. We were totally swamped, it was overwhelming but exciting."

SALES & PATRONS

The role of patrons in the farming operation can be seen in Graph 5. None of the results reported were found to be significantly different between the two years. There was a slight uptick in the 2019 responses, agreeing that there are not

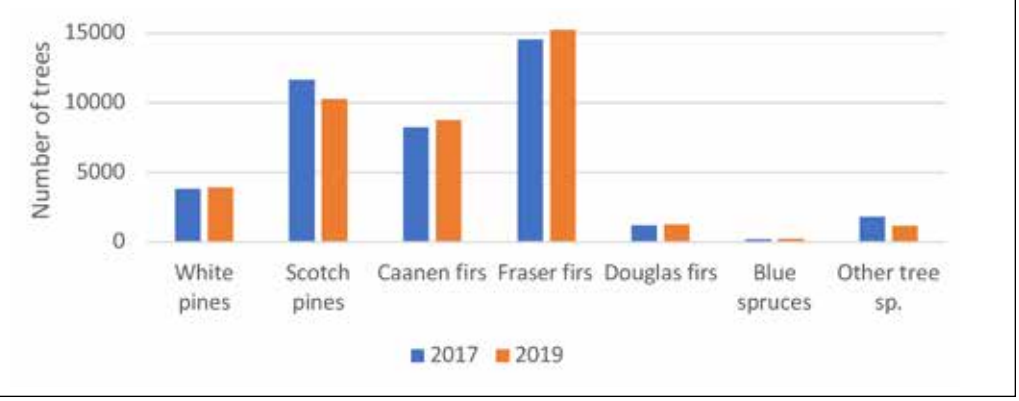
enough patrons shopping for real trees compared to the 2017 responses. In the 2019 survey the agreement that there were too many patrons for the number of trees in their farm, decreased compared to the 2017 survey. The responses on patrons looking for different tree varieties than the one produced in their farm remained similar between the two years with most farmers agreeing that patrons are looking for different varieties. There was a slight decrease on the farmers' agreement that their farm is too far from tree shoppers.

Graph 5.
The role of patrons in business operation.



We also found a minor decrease in the total number of trees sold as reported by the Christmas tree farmers. In 2017, there was a total of 41,603 trees sold in comparison to 41,000 that were sold in 2019. This change was likely a result of two factors – farmers transitioning out of the industry and decreasing the scale of their operations and a lack of supply for having trees trucked in. Statistically speaking, there were no significant differences found. The breakdown of sales of each species can be seen in Graph 6.

Graph 6.
Number of trees sold by the farmers.



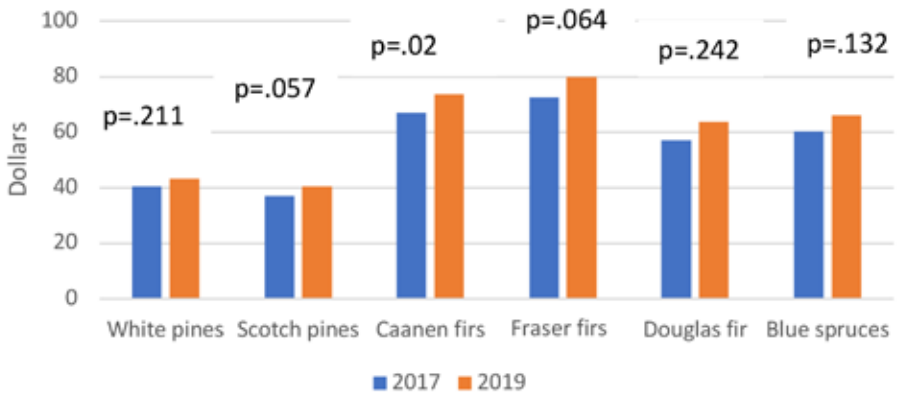
The average price of the trees sold has increased from $55.73 in 2017 to $61.19 in 2019. As you can see in the below Graph 7, some tree species have seen higher increases in their average price than others. The only statistically significant difference was found in the prices of the Canaan fir (p=0.02) that increased by almost $7 per tree.

Through grower interviews we found Caanan and concolor firs, as well as white and Scotch pines were the most commonly planted tree types. Some growers discussed the difficulty in growing certain types and varieties, with conversations surrounding firs being are hard to grow (except for Caanan) and Scotch and Austrian being disease-prone. The average farm trucked in about 556 trees in 2020, with most of these being Fraser firs.

Canaan firs thriving in central Indiana. Photo courtesy of Sambol's Tree Farm

Farm after farm found much marketing success through online platforms. Many growers discussed the importance of being an Indiana Christmas Tree Growers' Association member and being listed on their website. The use of Facebook and Instagram, having a business website with detailed information (hours of operation, directions, costs of trees, etc.) were also critical to most operations apart from the smallest of the lot. Even those not internet savvy understood the importance of online presence. One grower stated that he "usually tries to hire that out – so I've had a marketing person . . . and we try to have a presence all year."

Graph 7.
Average price of trees sold by the farmers.



Shelter house used to stage pre-cut Fraser fir trees. Photo courtesy of Sambol's Tree Farm

FUTURE CHRISTMAS TREE FARMS

Along with most states, Indiana has seen a decrease in the number of Christmas tree farms over the past few decades. In speaking with growers, this trend seems to be somewhat cyclical as the 1990s had a surplus of farms and was a recent peak. That said, the dearth of farms today are accompanied by some critical challenges that may be different than in year's past. The key difference is in land access. Open land that is proximate to population centers has significantly increased in costs during this same time period (1990-present). According to Keuth et al. (2020), farmland prices have increased approximately 300% since 1987 (with inflation factored in), averaging out today at around $6,210 an acre for Indiana cropland. The price is even greater in areas adjacent to larger cities (Indianapolis, Ft. Wayne, Evansville, Bloomington, West Lafayette, etc.) and land of higher quality. Established farms are not often transitioned out of family, even if no one in the family is willing to take them over. One grower discussed how they were unwilling to give up the family homestead, which is where the farm was located. This type of situation is quite common.

A second key variable is being able to wait seven to ten years to start to see a return on investment. Take for example that it costs ~$2,367 (includes shipping and handling from an out of state tree nursery) to purchase enough trees to plant out an acre (approximately 1000 trees if planted on a 6'x7' grid pattern with a couple of driving lanes). This does not include site prep, labor, land, etc. Compound this over seven years with 3% inflation and a farm with seven acres planted will have invested $18,137 in trees alone (not counting replacements for those that die from drought and disease ort the other costs like land, labor, water for irrigation, equipment, etc.) before they can start to see a return on investment. If you factor in the costs of equipment (tractor/mower, sprayers, chemicals such as insecticides and fertilizers, etc.) and then investment the last year in a parking lot, sale building, credit card machine, decorations, netter and shakers, etc. and one can easily reach $50,000 in debt before the first tree is sold. The point is being able to play the long game for the return all the while not knowing what the trend will be in seven years.

CONCLUSION

Based on the multiple rounds of surveys and the final participant interviews, key takeaway points are worthy of reiteration. First, Christmas tree farms are and can be very successful enterprises. Not every grower we surveyed or interviewed found an equal amount of success. Like most businesses much is dependent on location and willingness to adapt/evolve, while some good fortune is left to chance (errant rainfall during a drought, etc.). According to growers, other keys to success include and capacity for creativity and hard work and dedication. Growers often spoke about the long hours (14-hour days), sacrificing family time, and willing to assume risks and accepting losses. However, the rewards are also plentiful for some. One grower articulated that he appreciated being outdoors and on his own schedule, even with 14-hour days. He said it's "my work and that feels good." And even though growers are selling trees, they are providing an experience. One grower in central Indiana articulated that it is "really cool to see the families come out each year. You know that your trees will be the centerpiece of their holiday celebration/their home/hearth," while a grower in southern Indiana said she loved the fact that "no one ever comes to the Christmas tree farm in a foul mood. We kind of feel like it's a ministry. There aren't that many family activities that both a 15-year-old and a five-year-old can enjoy. And we feel like we're providing that. A wholesome family activity. People tell us it's unique, it's special. It's a full experience – popcorn, hot cocoa, Santa, lights, etc. It's more than selling trees." Though small in scope, this mixed-methods, multi-year case study of Indiana Christmas tree farms sheds light on important factors impacting the success of operations, as well as variables worthy of consideration for current and future tree farms.

REFERENCES

https://ag.purdue.edu/commercialag/home/wp-content/uploads/2020/07/20200807_KuetheLangemeierMintert_IndianaFarmlandValuesandCashrents.pdf

ACKNOWLEDGEMENTS:

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