

The Bee Business

Executive Summary

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## **Introduction**

Bee farmers waste hundreds of pounds of almond honey every year because the taste and texture make the product unusable for consumption. Many ask why a bee farmer would waste his time and hive energy on pollinating a crop that does not produce sweet honey to sell and the reason is that bee farmers are dependent on pollination fees paid to them by almond farmers. Bee farmers, determined to increase profits outside of almond pollination season are looking for ways to turn their almond honey waste into a marketable product that can be sold with the same benefits and properties as normal honey, without the sweet smooth taste. By finding a market for almond honey, bee farmers will be creating less waste and will be able to diversify their businesses revenue streams making them less dependent on almonds to maintain large hive counts in their businesses.

However, migratory bee farming is becoming a large-scale sustainability issue. The occupation is becoming riskier with colony collapse which is thought to occur because of global warming, pesticide use, and stress which makes bees more vulnerable to mites. Without bees, plant biodiversity all over the world would be diminished and people's diets would be significantly changed. If bees continue to be stressed not only by the previously mentioned factors but by almond pollination, farmers will either be unable to afford to keep up with pollination demand and hive counts, or almonds will no longer be pollinated at the scale they are today. Almonds are a huge cash crop for California, and a fall in almond production could have great affects in the United States food system overall.

Additional sales from honey are usually used to maintain or increase hive counts and spread revenue opportunities throughout the year. With added income from almond honey sales, bee farmers can utilize what all or some of their bees have been creating for months and use it to diversify sources of revenue. Honey, regardless of flavor, has been used in many products such as lotion and hair products due to its antibacterial and antioxidant rich properties. The project partners goals for this project were to analyze the

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costs and benefits of bottling almond honey to sell for purposes other than food and to bridge a connection between the bee farms and almond honey buyers, such as those that can use it in beauty products. The desired outcome is less wasted almond honey and an increase in honey sales.

## **Methods and Interventions**

Tools used in this project included creating a business model canvas that showed inefficiencies and opportunities the bee business can take to market almond honey. A cost-benefit analysis was then created to determine scenarios that would be most efficient to extract almond honey. A second business model canvas was then created to show what new revenue streams were created with adding almond honey sales to the business plan. Lastly, a Business Process Management (BPM) was created to determine the next steps, the marketability, and the market reception to almond honey.

The individual tools were adapted from best practice research on the use of agricultural byproducts and research on creating a sustainable business plan. Instead of using strict economics I was able to adapt the same ideas into a more social and scenario-based project that would be more relatable for the farmer and other stakeholders that were interested in the projects results.

The current business model was created first, with the help of the bee farmer to understand the sustainability issues within almond pollination. A business model is used by businesses to understand their product, their competitors, their customers, and overall their businesses better. It allows for the analysis of the entire business and helps better spot deficiencies and possible solutions. After this was completed a cost-benefit analysis and new business model were created in order to see the possibilities of selling almond honey. The BPM was adapted throughout the project to better lay out the design of marketing almond honey based on new information and was completed once the farmer agreed that each scenario explored was something that was possible to implement.

In addition to these tools, stakeholder engagement was done to understand the reception of a product like almond honey in the beauty industry. Several natural beauty supply stores were contacted and interviewed to determine a general price for almond honey and the interest in almond honey as a possible future product used in their businesses.

## **Project Outcomes/Results**

The outcomes showed that with minimal change in the farmers migration schedule, almond honey could be extracted. There was also viable interest in buying almond honey from beauty supply buyers. However, marketing almond honey and selling it would theoretically, only lead to about a 1% increase in gross honey sales. Therefore, farmers were left with next steps to implement the BPM and either choose to build a co-op with other farmers to sell almond honey as well as other bee products such as beeswax, or reach out individually to a supplied list of buyers. Since the implementation stages of the BPM were outside of the scope for this project it is not known if the scenarios explored in this

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report are successful in minimizing almond honey waste and increasing honey sales by 1% but the bee farmer is better able to make decisions regarding their waste and dependency on almond pollination fees.

## **Next Steps**

The outcomes were able to address all concerns the project partner had in regards to the sustainability issues they had. However, because almond season is in early February the project could not continue on with the project to implement the findings and next steps the project uncovered.

Future opportunities for this project include increasing the scope from just almond honey, to all plant's that bees pollinate that do not yield prime honey. Almond honey is not the only wasted honey and by including other honey's, a larger increase in honey sales could be achieved if the logistics are better researched. In addition, the migratory nature of this occupation is another sustainability issue that bee farmers are concerned about. Since global warming is one of the main issues believed to be behind colony collapse, a change in how bees travel the country from field to field should be analyzed.