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Business Characteristics of Hemp: Agronomic and Marketing Barriers

Introduction

The cultivation and production of hemp in the United States have gained significant attention and momentum in recent years. As the legal landscape surrounding hemp production evolves, farmers, policymakers, and researchers have recognized the potential opportunities and benefits associated with this versatile crop. However, a wide variety of unknown challenges and barriers need to be addressed for successful and sustainable hemp production. This Extension article aims to explore the current state of hemp production, highlighting the challenges faced by farmers, the emerging opportunities in the market, and the barriers that hinder the widespread adoption and growth of hemp production. By understanding these dynamics, current and future hemp growers can better navigate the hemp industry and develop strategies to maximize opportunities while overcoming barriers.

This publication is the second of two articles illustrating the status of hemp production in six states. This study addresses the impact of agronomic and marketing barriers among surveyed hemp growers, while also shedding light on what future hemp growers and uninterested growers think about the barriers and opportunities in hemp production. To gain a greater understanding of the agronomic and marketing barriers in hemp in six U.S. states, we conducted an online survey of 119 farmers from Illinois, Indiana, Michigan, Ohio, Oregon, and Wisconsin in 2021. To increase the participation rate, a $10 gift card incentive was offered to farmers who completed the survey.

We categorized respondents who were growing hemp as ***growers*** (N=82) and those considering growing hemp in the future as ***potential growers*** (N=29). Farmers neither growing nor considering growing hemp were categorized as ***uninterested growers*** (N=8). Our goal was to identify needs for future research in hemp barriers, challenges, and opportunities and to develop Extension information for the hemp industry.

Production Barriers

We employed a 5-point Likert-like scale (Likert, 1932) to assess the importance of production barriers for hemp production, including pest management, lack of agronomic knowledge, labor availability, and labor cost. The scale ranged from "not important" (1) to "extremely important" (5), including options of "slightly important" (2), "moderately important" (3), and "very important" (4). Results showed that 61% of growers and 52% of potential growers responded that pest management is a very or extremely important barrier to hemp production (Figure 1). Our results are consistent with Ellison (2020), who found that most hemp growers in the U.S. perceive pest management as one of the major challenges. Labor cost was reported as a very or extremely important barrier for 50% of growers and 45% of potential growers, while agronomic knowledge and labor availability were very or extremely important for less than 40% of growers and potential growers.

In general, fewer uninterested growers reported production barriers as important, relative to their counterparts, except for agronomic knowledge and labor availability. An explanation why agronomic knowledge and labor are important barriers for uninterested growers may be due to the fact that 1) hemp is considered a relatively new specialty crop relative to commodity crops (Anderson et al., 2019), and 2) labor issues tend to be on the top of the list of worries among agribusinesses (Jubenville and Colella, 2021). In addition, 25% and 38% of uninterested growers reported that pest management and labor costs, respectively, are important barriers to hemp production. However, 61% of growers and 52% potential growers reported pest management as an important barrier and 50% of growers and 45% potential growers reported labor costs as an important barrier.

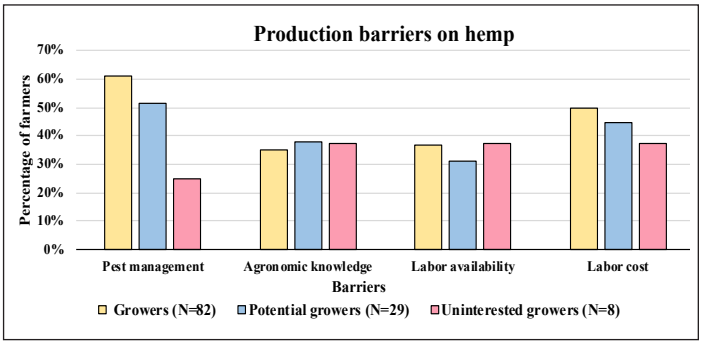

Figure 1. *Percentage of farmers in Illinois, Indiana, Michigan, Ohio, Oregon, and Wisconsin who perceived production barriers in four categories as very or extremely important in 2021.*

Marketing Barriers

The same 5-point Likert Scale was utilized to assess the magnitude of importance that growers placed on marketing barriers such as finding buyers, government and environmental regulations, knowledge of market standards, obtaining price information, and access to premium prices.

Access to premium prices was a concerning marketing barrier for growers (73%), potential growers (66%), and uninterested growers (50%) (Figure 2). Prices may be a major concern for farmers due to the fact that overproduction of hemp has brought down prices in the last few years (Sunoj et al., 2023). Dhoubhadel (2021) found that the price of hemp biomass decreased from $4.35 to $0.74 per percent of CBD per pound in Kentucky between 2019 and 2020. Finding buyers was rated as a very or extremely important barrier by 74% of growers, 52% of potential growers, and 50% of uninterested growers.

Government regulations were reported as a very or extremely important barrier by 68% of growers, 45% of potential growers and 63% of uninterested growers. This finding is consistent with Skorbianski et al. (2021), who reported that hemp production can be classified as illegal if the cannabinoid delta-9-THC test yields results higher than 0.3% on a dry weight basis.

Knowledge of market standards was a very or extremely important barrier for 55% of growers and 45% of potential growers. Similarly, Ellison (2020) found that 60% of hemp stakeholders interviewed reported that access to markets was very or extremely difficult. Finally, obtaining price information was a major barrier for 63% of growers, 55% of potential growers, and 25% of uninterested growers. Consistently, Mark (2020) found that information for decision-making on hemp is limited, and Sterns (2019) found that sellers and buyers tend to work with insufficient hemp trade information.

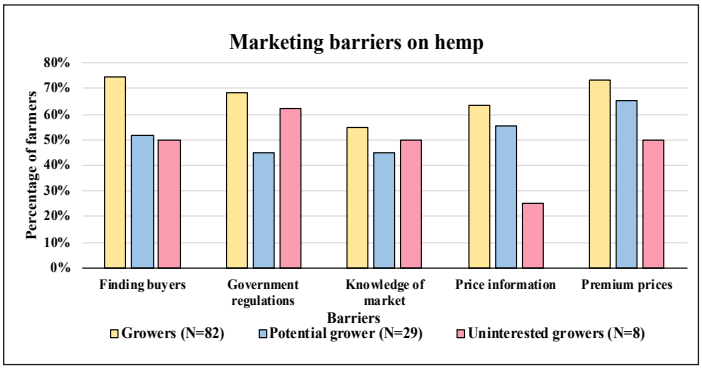

Figure 2. *Percentage of farmers in Illinois, Indiana, Michigan, Ohio, Oregon, and Wisconsin who perceived marketing barriers as very or extremely important by category.*

Hemp Business Characteristics

Due to survey flow, the following sections were asked only to current hemp growers. Our findings indicate that, on average, growers earned 37% of their total farm income from hemp sales in 2021. In addition, our results reveal the scenarios experienced by hemp businesses in 2021. For hemp scenarios in 2021, when considering gross sales, 30% of growers reported a decrease in sales, while 27% remained stable, and only 12% reported an increase in gross revenue. In terms of the number of employees, 22% of growers saw a decrease, 40% maintained the same level, and only 4% reported an increase. Similarly, the selling price experienced variations, with 27% reporting a decrease, 26% remaining stable, and 16% observing an increase. Lastly, in terms of yield, 35% of growers experienced a decrease, 27% remained consistent, and only 5% reported an increase.

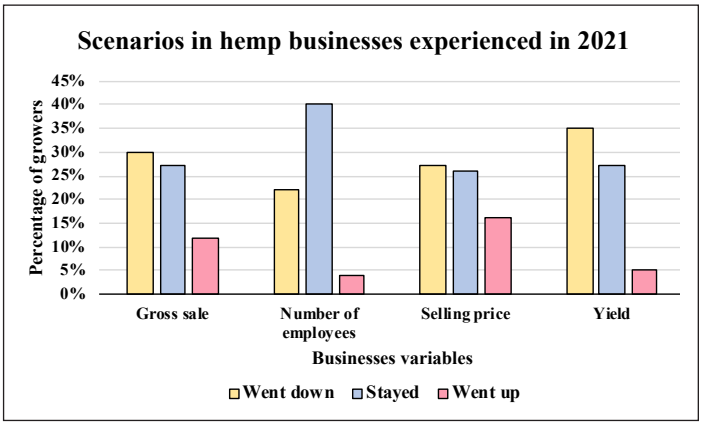

Figure 3. *Percentage of hemp growers experiencing changes in business scenarios (went down, stayed about the same, and went up) in yield, selling price, number of employees, and gross sales in 2021.*

The distribution of hemp products in 2021 is reported in Figure 4. Most of hemp production (72%) was dedicated to CBD oil. This allocation aligns with previous research by Mark et al. (2020), who indicated that CBD oil offers significantly higher profitability per acre compared to other hemp products. Additionally, Kim and Mark (2023) discovered that 2022 is expected to see a 233% growth in hemp-derived CBD compared to 2018. Similarly, Hill et al. (2023) interviewed 12 growers in Colorado, and 10 of them grew hemp for CBD, one for fiber, and one for seed. Fiber production accounted for 5% of the crop; grain or seed production represented 6%. Additionally, 17% of the crop was allocated to other hemp products, such as dried floral arrangements, distilled alcohol, and smokable flower. These findings highlight the

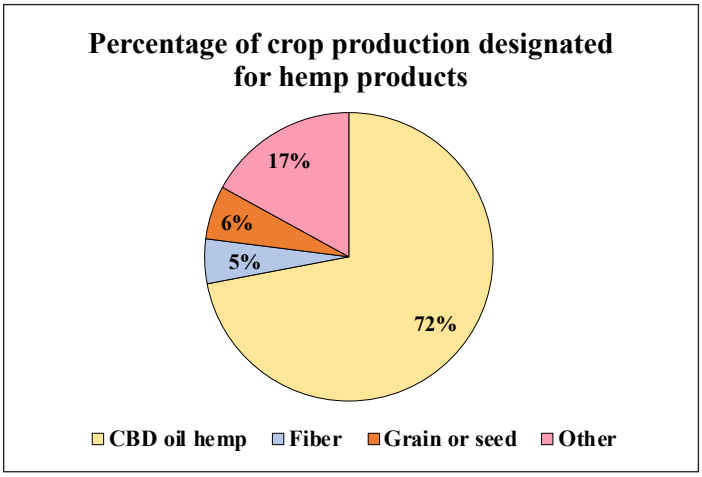

Figure 4. *Percentage of crop production designated to CBD oil, fiber, grain or seed, and others hemp products.*

prominence of hemp for CBD oil as the primary focus of crop production among hemp growers, with other products also contributing to the overall production.

When considering the distribution of hemp sales, it is evident that a significant portion (43%) was generated through direct sales to consumers. Processors played a substantial role, accounting for 27% of hemp sales, while wholesalers contributed 16% of hemp sales. Other growers accounted for 9% of sales, seed companies for 4%, and brokers for 1%. Figure 5 highlights the diversity of hemp market channels through which growers are able to generate income in 2021. Understanding the market dynamics and identifying the most profitable avenues for hemp sales can assist growers in optimizing their revenue streams and making informed business decisions.

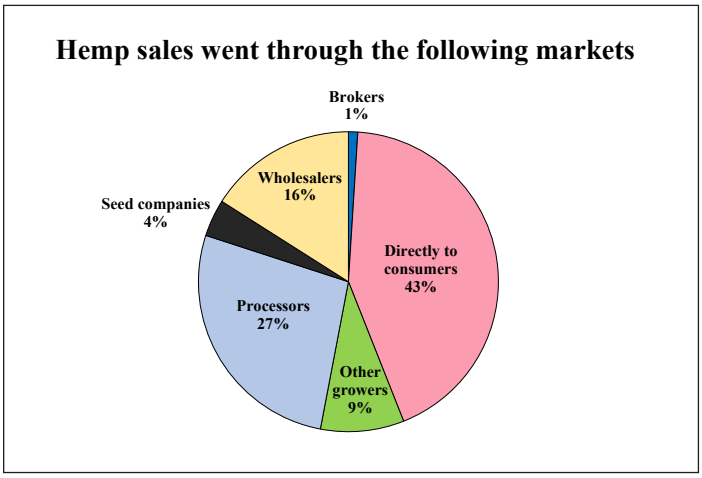

Figure 5. *Percentage of hemp sales that went through brokers, directly to consumers, other growers, processors, seed companies, and wholesalers in 2021.*

Take-home Message

Our study highlights several significant barriers to producing hemp. Pest management and labor costs are major challenges that must be addressed to increase profitability and sustainability. To illustrate, beginning growers can conduct a thorough evaluation of the challenges outlined in the study before entering the hemp production market. Developing strategies to proactively address pest management challenges can include identifying cost-effective practices, such as integrated pest management (IPM) strategies.

In addition, researchers can focus on strategies, tools, and technologies to optimize labor efficiency, reduce manual labor requirements, and enhance productivity in hemp. Policymakers can recognize the importance of developing programs and incentives that help farmers with pest management and labor costs as barriers to hemp production. Clear and streamlined hemp policies could help growers navigate and comply with production regulation.

Access to price premiums, finding buyers, and navigating government regulations present significant marketing barriers for hemp production. It is important for growers to carefully evaluate these challenges and develop strategies to address them before entering the hemp market. This may include establishing relationships with potential buyers and staying up-to-date on the latest regulations and market trends. By doing so, growers can minimize risk and maximize their potential for success. Public and private support can include facilitating buyer-seller connections, streamlining regulations, enhancing market education, promoting transparent pricing information, and/or exploring niche markets.

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