

WHITE PAPER

Maximizing Efficiency and Minimizing Downtime: Outsourcing as a Strategic Advantage in Cannabis Cultivation



In the intricate process of cannabis cultivation, achieving the highest quality product necessitates meticulous attention to every step. Beyond essential care in providing optimal nutrients and environmental conditions, strategic plant management before harvest is crucial. The final stages, including drying and manicuring of the cannabis flower, are paramount yet

time-intensive. At Mary Jane's Friends & Co., we focus on optimizing the most labor-intensive tasks—defoliation, harvesting, and manicuring—to enhance overall productivity.

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Introduction

The cultivation of cannabis is marked by several labor-intensive stages, particularly defoliation, harvesting, and manicuring. Training in-house staff for these tasks is not only costly and time-consuming but also fails to ensure the desired outcomes consistently. Outsourcing to experienced professionals offers numerous advantages, as these specialists bring a wealth of knowledge, efficiency, and significantly more experience to the cultivation process. This white paper delves into these critical cultivation stages, highlighting the benefits of engaging third-party experts.

Defoliation

Defoliation, the strategic removal of mature leaves to improve light penetration and airflow, significantly impacts yield by ensuring lower-developed buds receive adequate light. Ideally conducted at the end of the third week of the flowering stage, defoliation requires precise timing and expertise. Professionals in this field, with their extensive experience, demonstrate 50%-100% greater efficiency than in-house crew. The disparity in experience is stark: an in-house team defoliating monthly accrues about 100 hours of experience annually, in contrast to 1,200 hours for a specialist defoliating 2-3 times weekly. This experience translates to at least 50% faster execution compared to in-house efforts.

Harvesting

Harvesting signifies the culmination of the plant's lifecycle, with techniques ranging from cutting entire plants for drying to processing individual branches. Although not inherently complex, an experienced and well-organized crew can drastically reduce both time and waste during this phase. Our teams often perform a final defoliation during harvesting, enhancing drying efficiency and reducing time to final product readiness. Our case studies show that a 20-person crew can complete in one day what a 12-person in-house team accomplishes in four, offering significant cost savings and enabling a quicker turnover for new plant cycles.



Trimming and Manicuring Enhanced

The efficiency of trimming and manicuring in cannabis cultivation is influenced by a complex array of factors, such as the efficacy of pre-harvest defoliation, the moisture level of the buds, their size, and the pre-processing techniques employed. Our extensive experience, gained from processing millions of grams of cannabis, has taught us that expert trimmers dramatically outshine occasional in-house staff by adeptly managing these nuanced aspects of cannabis production. The variability inherent in the trimming and manicuring process means that a one-size-fits-all approach is ineffective, and there is no universally applicable "industry average" for productivity. One critical variable we've studied is the size of the flower, which significantly affects processing speed. Larger buds can be processed 6-10 times faster than smaller ones, underscoring the importance of tailoring trimming and manicuring techniques to the characteristics of the product at hand.

Cost Considerations and Efficiency Strategies

When evaluating the total cost of trimming and manicuring, it's crucial to consider the productivity rate, measured in grams or ounces per person per hour, against the size of the buds being processed. While the quality of the finished product and the preservation of trichomes are paramount for most growers, the economic viability of meticulously manicuring smaller buds becomes questionable. This is due to the disproportionate time required to achieve the same weight output, which significantly escalates costs. For example, if we assume a cost of \$25 per hour per crew member who can process 4 pounds of large flowers in a day, the resulting cost is approximately \$50 per pound over an 8-hour period. Conversely, achieving the same weight with smaller buds can inflate costs to between \$300 and \$600 per pound, making the trimming of larger buds markedly more cost-effective.



Recommendations for Optimization

To optimize the trimming and manicuring process, we recommend:



- **Strategic Pre-Harvest Defoliation:** Implementing timely and effective defoliation techniques to ensure larger bud growth and facilitate easier trimming.
- **Moisture Management:** Maintaining optimal moisture levels in buds to streamline the manicuring process and preserve quality.
- **Size Selection:** Prioritizing larger buds for manual trimming and considering mechanized solutions for smaller buds to enhance efficiency.
- **Technique Tailoring:** Adapting trimming and manicuring techniques to match bud characteristics, leveraging our expertise to identify the most efficient methods for each product.



The Study - Trimming and Manicuring

Our comprehensive analysis underscores the efficiency variations in trimming different sizes of flowers, with larger buds being significantly quicker to process. This variance becomes particularly pronounced when considering the economic viability of hand-trimming smaller buds due to the increased time and labor required.

The results were telling. Larger flowers, unsurprisingly, were quicker to trim. Specifically:

- A trimmer can produce 4 pounds of large-size flowers in an 8-hour day.
- A trimmer can produce 2 pounds of medium-size flowers in an 8-hour day.
- A trimmer can produce approximately 0.677 pounds (or 10.83 ounces) of small-size flowers in an 8-hour day.

When producing a pound consisting of an equal amount of small, medium, and large flowers, a trimmer would need approximately 80 large flowers, 453 medium-sized flowers, and 1258 smaller flowers.

Furthermore, our data extrapolation indicated that while an average trimmer could manage to trim a pound of cannabis in about 2 hours with large flowers, the same task with smaller flowers could take an astounding 11.8 hours.

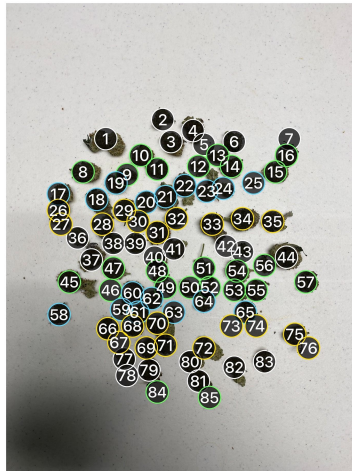


The images provided below offer a visual representation of what constitutes an ounce of cannabis flower for each size category:



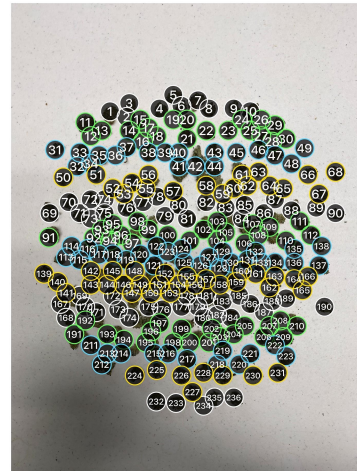
Objects:

15



Objects:

85



Objects:

236

A Size: It takes only 15 of these larger buds to make up an ounce.

B Size: 85 of these medium-sized buds are required to achieve an ounce.

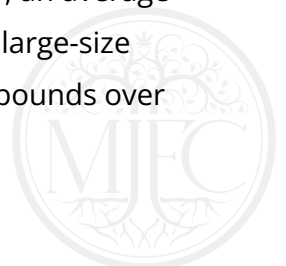
C Size: A staggering 236 of these smaller buds are needed to constitute an ounce.

To put this into perspective, compared to the A size buds:

You would need 566% more B size buds and 1573% more C size buds to achieve the same weight.

Results (including fatigue factor)

Large Flowers (A): A trimmer can produce 4 pounds of large-size flowers in an 8-hour day without accounting for fatigue. However, when considering the fatigue factor, an average trimmer would trim approximately 1608.21 grams (or about 3.55 pounds) of large-size flowers in an 8-hour shift. This represents a decrease of approximately 0.45 pounds over the course of the day due to fatigue.



Mixed Flowers (A, B, C): Without accounting for fatigue, a trimmer would be able to trim a certain amount of mixed flowers in an 8-hour day. However, when the fatigue factor is introduced, the trimmer would trim approximately 818.49 grams (or about 1.8 pounds) of mixed flowers in an 8-hour shift. This is a notable decrease from the potential amount that could be trimmed without the effects of fatigue.

Fatigue Factor Analysis:

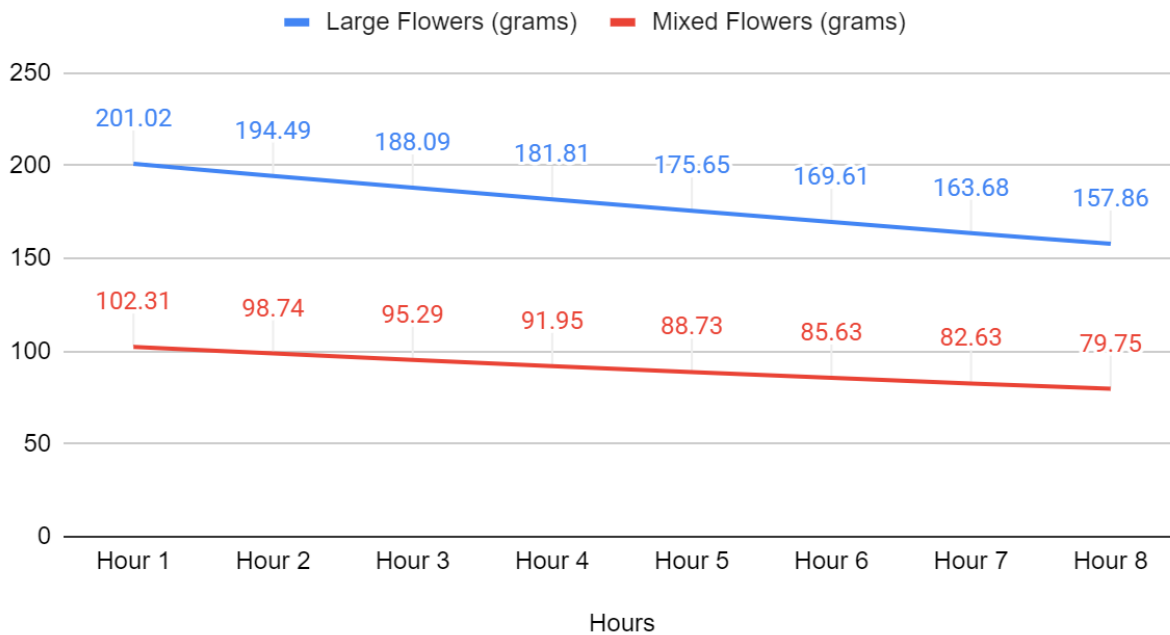
The fatigue factor plays a pivotal role in determining the efficiency of a trimmer over an extended period. For tasks requiring focus but aren't physically strenuous, there's an estimated 2% to 5% decrease in efficiency per hour. Using an average value of 3.5%, we adjusted our calculations to account for this decrease in efficiency over an 8-hour workday.

Hours	Large Flowers (grams)	Mixed Flowers (grams)
Hour 1	201.02	102.31
Hour 2	194.49	98.74
Hour 3	188.09	95.29
Hour 4	181.81	91.95
Hour 5	175.65	88.73
Hour 6	169.61	85.63
Hour 7	163.68	82.63
Hour 8	157.86	79.75

The hourly breakdown clearly showcases the diminishing returns in productivity as the hours progress, emphasizing the importance of considering the fatigue factor when planning trimming operations.



Production speed decrease due to fatigue



Drawing a parallel, consider driving. A 2-hour drive on a clear, sunny day is considerably less taxing than navigating through heavy rain at night for the same duration. The latter requires heightened concentration, leading to quicker fatigue. Similarly, trimming smaller buds is not just about the increased hand movements but also the heightened focus they demand. This added strain on the eyes and wrists can lead to quicker exhaustion, reducing the trimmer's overall efficiency. Over time, this can lead to a decline in the trimmer's productivity, much like how a driver's alertness diminishes faster when driving in challenging conditions.

By integrating the fatigue factor into our results, we provide a more realistic and comprehensive understanding of the trimming process over an extended period. This expanded analysis offers valuable insights for cultivators and processors aiming to optimize their operations and ensure consistent, high-quality output.

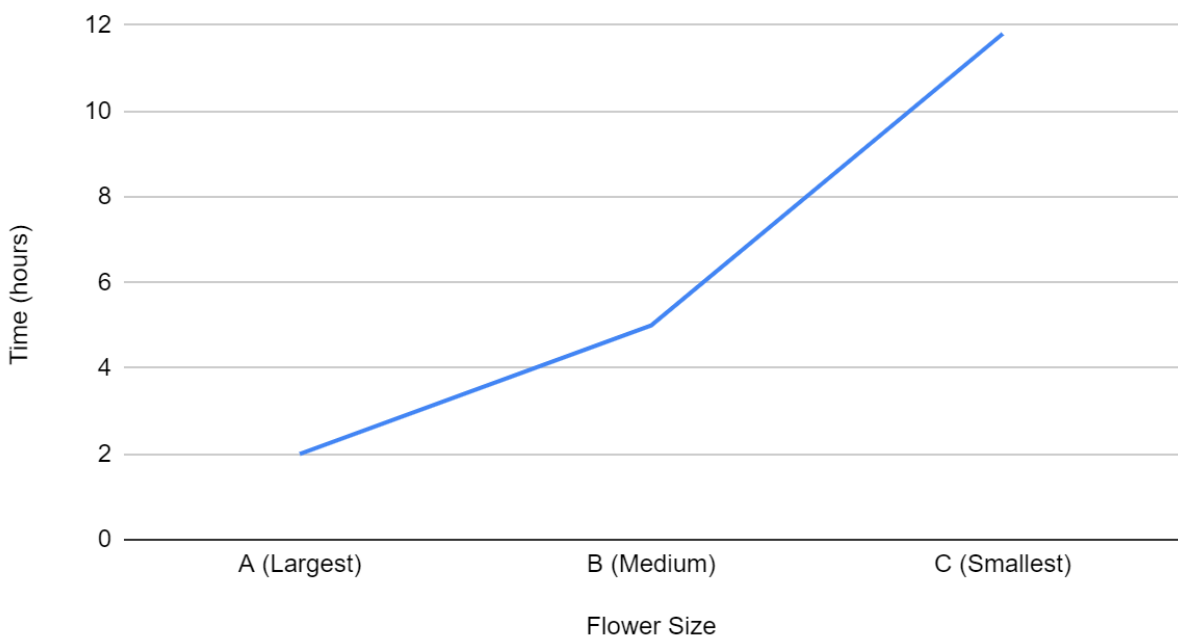


Discussion

Our findings illuminate the significant disparities in trimming times across flower sizes, with consequential economic implications, especially for strains yielding smaller flowers. This data, supported by visual comparisons, emphasizes the efficiency gains possible through strategic outsourcing.

To visualize the difference in efficiency, consider a graph where the x-axis represents the size of the flowers (A for the largest, B for medium, and C for the smallest) and the y-axis represents the time taken to trim. The curve would rise sharply from A to C, indicating that hand trimming of the smaller nugs (C) may take 2 to 4 times longer to achieve the same output weight.

Time (hours) vs. Flower Size



Conclusion

In conclusion, outsourcing key cultivation tasks to skilled professionals offers a strategic advantage in cannabis cultivation, as evidenced by the white paper from Mary Jane's Friends & Co. The comparative analysis within the paper clearly demonstrates how specialized experience in defoliation, harvesting, and trimming/manicuring can lead to significant improvements in efficiency, quality, and overall productivity. By adopting this approach, cannabis cultivators can reduce labor costs, minimize downtime, and potentially increase yield, underlining the value of strategic outsourcing in the competitive cannabis industry.

Ready to talk to an expert about how Mary Jane's Friends & Co. can revolutionize your cultivation process?



248.509.GROW



info@yourtrimmers.com



www.yourtrimmers.com



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& CO

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