



Green **MARK**

OPTIMIZE SPRAYER

EXECUTIVE SUMMARY



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INTRODUCTION

Soybean producers are currently facing major challenges. Due to tariffs, high ending stocks, herbicide resistance and competition from international markets, soybean prices have fallen to a ten-year low while input costs are increasing. Farmers spent over \$13.7 billion on herbicides last year, and that number is only expected to rise as plant resistance to glyphosate increases at a rapid rate¹.

Greenmark is proud to introduce the Optimize Sprayer as a high-tech tool that uses precision agriculture technologies to more efficiently manage weeds on high-production soybean farms. This revolutionary sprayer uses computer imaging technology, artificial intelligence and photo recognition to identify and spray selected weeds. This new sprayer will offer farmers better weed control, higher yields and increased profit.

As one of the world's largest farm equipment manufacturers, Greenmark will successfully launch this product through its established dealer network and positive brand awareness that has been earned as the market leader. The Optimize Sprayer will help American soybean producers save money and reduce herbicide use by up to 90 percent.

MARKET ANALYSIS

MARKET SIZE & TRENDS

With 89.6 million acres planted in 2018, soybeans are the most commonly grown crop in the United States². In addition, the American soy industry is valued at more than \$40 billion, and is expected to climb in the near future³. Not only has acreage and value increased, but so has consumption. Soybeans can be used for ethanol, biodiesel, food products, and most importantly animal feed⁴.

According to the International Survey of Herbicide Resistant Weeds, there are now over 490 herbicide resistant weeds in the United States, many of which carry a strong resistance to glyphosate⁵. In particular, common weeds such as redroot pigweed, kochia, marehail, water hemp, and palmer amaranth pose serious threats to soybean producers⁶. These glyphosate-tolerant weeds impact quality, yield, and marketability costing farmers an additional \$20-\$100 acre to manage. Specifically, it costs soybean producers an average of \$30 extra per acre to treat these troublesome weeds⁷.

MARKET SEGMENTS, SIZE, NEED,

CUSTOMER PROFILE, OVERALL PRODUCER BENEFIT

Our target audience is soybean producers who use conventional spraying techniques to manage weeds. We will target farmers in specific counties throughout Illinois, Iowa, Missouri, Kansas, Nebraska, Arkansas, Tennessee, and Mississippi. These areas have been chosen due to both their high number of herbicide resistant weeds and the abundance of large soybean producers. The typical customer will have 3,500 or more acres of soybeans.



NEED FOR PRODUCT

With the decline in soybean prices, and the increase in herbicide resistant weeds, soybean producer profit margins have been reduced. Our market research has indicated, 87 percent of soybean farmers said that they would be willing to try a new sprayer if it could help increase profit margins. In addition, 96 percent of surveyed farmers were very interested in cutting down on herbicide costs. Also, because of the Optimize Sprayer's capabilities, it will have a far better success rate of treating herbicide resistant weeds. Optimize Equipment will be able to fill a void in the market while also improving producer gross margin.



CUSTOMER PROFILE: PLATINUM PRODUCERS

Platinum Producers are soybean producers who farm more than 3500 acres. They are innovators who quickly adopt new technology. They are careful risk managers that look for ways to improve profits and eliminate wasteful spending in times of uncertainty and price swings. The Optimize Sprayer is the ideal product for them because they value the cost saving impact it can have, along with the innovative effect it can have on yields.

MARKET SIZE

	Year 1	Year 2	Year 3
Acreage	5,001,000 Acres ⁸	3,582,000 Acres ⁹	3,340,000 Acres ¹⁰
Platinum Producers	744 (72 counties in IL & IA)	605 (additional 54 counties in IA, KS, MO, & NE)	594 (additional 50 counties in AR, MS, MO, & TN)

OVERALL PRODUCER BENEFIT

Customers, such as Platinum Producers, are able to reduce herbicide costs and increase profit margins by using the Optimize Sprayer. The sprayer can save producers up to 90% in herbicide costs, or \$30 per acre. For a producer with 3,500 acres this would result in a savings of \$105,000 (\$30/acre times 3,500 acres) from reduced herbicide use.

COMPETITIVE ANALYSIS

Optimize Sprayer enters the market as the only sprayer in the United States with imaging technology to combat weeds. In addition, it is the only sprayer on the market that can hold, and apply, as much as 15 herbicides. This patented technology provides farmers with an innovative new way to spray their soybeans. Considering that no other sprayer on market has the imaging capabilities of the Optimizer, there is no direct competition. However, there are several indirect competitors including New Holland, Amazone, and Challenger as shown below.



2019 GREENMARK OPTIMIZE

PRICE: \$430,500

TANK SIZE: 1000 GALLONS

STATE OF THE ART WEED IMAGING TECHNOLOGY? YES

HERBICIDES THAT CAN BE APPLIED AT THE SAME TIME: 15+

PRICE: \$386,000

TANK SIZE: 1200 GALLONS

STATE OF THE ART WEED IMAGING TECHNOLOGY? NO

HERBICIDES THAT CAN BE APPLIED

AT THE SAME TIME: 2

2019 NEW HOLLAND SP310F



AMAZONE UX01 SUPER SERIES SPRAYER



PRICE: \$300,000

TANK SIZE: 1375 GALLONS

STATE OF THE ART WEED IMAGING TECHNOLOGY? NO

HERBICIDES THAT CAN BE APPLIED AT THE SAME TIME: 2

2018 CHALLENGER RG1300C ROGATOR



PRICE: \$407,000

TANK SIZE: 1300 GALLONS

STATE OF THE ART WEED IMAGING TECHNOLOGY? NO

HERBICIDES THAT CAN BE APPLIED AT THE SAME TIME: 2

SWOT ANALYSIS

STRENGTHS

- Optimize Sprayer is patented, and first to the market
- Direct application of herbicide from our product to the weed reduces drift and improves efficiency
- The technology is simple and easy to use

WEAKNESSES

- The Optimize Sprayer has a high initial price
- Skepticism of new technology from older farmers
- Lack of history with the technology

OPPORTUNITIES

- Using the brand recognition and marketing abilities of our company
- Strong movement towards precision agriculture in farming practices
- Optimize Sprayer has the potential to be used for other crops

THREATS

- Potential for better technology to be released in the future
- Strong brand loyalty in the agricultural sprayer market
- Low short run growth in the soybean market

BUSINESS PROPOSITION

KEY PLANNING ASSUMPTIONS

- » GreenMark is the only company to implement visual recognition technology into a commercial sized sprayer
- » Platinum Producers own mid-sized tractors to be compatible with the Optimize Sprayer
- » Farmer's need and willingness to use the Optimize Sprayer has been researched and is considered to be extremely high
- » GreenMark has established production, distribution, and sales facilities technology companies in America, and has full financial backing from the company
- » Optimize Sprayer is in the test marketing phase



GOAL

Optimize Sprayer, by Greenmark, will revolutionize the soybean industry by providing farmers with cutting edge technology to fight herbicide resistant weeds. In doing so, we will inform consumers about the Optimize Sprayers capabilities and stimulate a profitable and reliable market for the future.

OBJECTIVES

1. Sell 19 units in our first year.
2. Achieve 94% customer satisfaction in our first year
3. Net a \$98,000 gross profit in our first year

PLAN OF ACTION

PRICE

Optimize will be sold to dealerships at a wholesale price of \$350,000 and will be listed at a retail price of \$430,500 to our Platinum Producers. While we recognize that this price is slightly higher than our closest competitor, the Optimize Sprayer affirms this price, with its superior technological capabilities and its cost saving capabilities.

PLACE

Optimize Sprayer has chosen three main areas to launch our product. These areas were chosen due to their high number of Platinum Producers and herbicide resistant weeds. Each area has GreenMark dealerships that have met our standards and agreed to take on our product. These dealerships will be able to inform, educate, and sell our product to soybean producers. Optimize will begin year one throughout 72 counties within Illinois and Iowa. Our partnered dealers will include VanWall, Agrivision Equipment, Sinclair Tractor, Martin Sullivan and AHW. Expanding into year two, Optimize will move farther into 54 selected counties in Nebraska, Iowa, Missouri, and Kansas. Our partnered dealerships will be Horizon Equipment, PrairieLand Partners, and Ag-Power Inc. By year three, placement in the Arkansas, Mississippi, Tennessee, and Missouri will add an additional 50 counties to our target area. Our partnered dealers will include Greenway Equipment, Wade, Tennessee Tractor, and Arkansas Ag Company.

STRATEGY STATEMENT

GreenMark's *Optimize Sprayer* is the next-generation, top-of-the-line weed management technology in the agricultural industry. By using the Optimize Sprayer's visual recognition technology, Platinum Producers will reduce herbicide costs by up to 90%, eliminate herbicide resistant weeds, and witness a reduction in chemical drift. All of these benefits lead to drastically reduced variable input costs, increased sustainability and a more profitable crop.

PRODUCT

The Optimize Sprayer is a pull behind sprayer that attaches to the 3-point harness of any mid-sized tractor. To add, this sprayer is the first of its' kind with the ability to spot spray weeds using cameras and visual recognition software. This piece of equipment consists of a folding sprayer boom, a patented chemical pump, and a wiring harness with a cab monitor to control the system. The sprayer boom is 60 foot long, spanning 24 to 36 rows, and is fitted with 720 individual camera/nozzle units, guaranteeing extreme accuracy. The patented chemical tank consists of three sections. First being chemical storage. The Optimize Sprayer can hold up to 15 different chemicals at once. These chemicals are individually loaded into the sprayer in their concentrated form. This saves space, and increases versatility. Second is the pump. The pump works with the visual recognition system, and mixes the chemical and applies it when a weed is identified. This increases the effectiveness of the chemical. Additionally, the pump has simple levers to help the operator calibrate the machine's accuracy. Finally, the Optimize Sprayer gets the water for its solutions from two 500 gallon saddle tanks that are harnessed to each side of the tractor. The wiring harness is the heart of this revolutionary system. The wiring harness is the brain and central nervous system of the sprayer. This part of the sprayer is constantly sharing information between the cameras, the pump, and the monitor to ensure the operator has a full understanding of how well the sprayer is performing. Operating at a max speed of 12mph, the Optimize can cover roughly 87 acres an hour, with a 98% kill efficiency. Additionally, the monitor will track performance and collect, as well as, tabulate data recorded in each field, allowing producers to better understand and manage their herbicide programs. The system is considered turn-key once it is hooked up to the tractor. This means that all of the information and operating systems are ready-to-go when the Optimize enters the field.

PROMOTION

Spraying Together Campaign: The “Spraying Together Campaign” will allow us to introduce Optimize Sprayer into the market. The campaign will target Platinum Producers to inform them about our product and its ability to reduce herbicide use and costs. The campaign will help us identify customers, announce our presence in the market, and generate demand among our targeted Platinum Producers.

PERSONAL SELLING

Optimize will hire salespeople in order to sell our units directly to dealerships. These salespeople will be responsible for establishing rapport with dealers, making sure dealers are informed about the Optimize Sprayer, selling units, and identifying potential new dealerships to carry the Optimize Sprayer. For every area we plan to launch our product, there will be a salesperson. We will have one salesman in year one, and add a subsequent salesman for every new additional area the Optimize Sprayer is introduced to. Each of these salespeople will make a \$105,000 starting salary with the potential to earn a \$2,500 bonus for every unit they sell. These salesman will not be selling directly to Platinum Producers, as GreenMark believes local dealership salesman will be better equipped to sell to these clients. Any dealership level salesperson who sells an optimize sprayer will be given a \$1,000 bonus paid by GreenMark.

PRODUCT SPECIALISTS

Optimize Sprayer will have a team of product specialists whose job will be to promote the product to Platinum Producers. Additionally, they will be able to assist Platinum Producers with technical issues regarding the Optimize Sprayer. Three product specialists will be hired for year one, with an additional three added every year to keep up with the Optimize Sprayers Expansion. These specialists will have access to a wide selection of promotional items that will be given to potential customers.

PROMOTIONAL GIFTS

GreenMark will be investing in promotional items and gifts for Platinum Producers and potential customers. Such gifts will include, iPads, Yeti Coolers, Carhartt Jackets, hats, tumblers, and variety of other high quality goods. These gifts will be used as a way to introduce and inform Platinum Producers about the Optimize Sprayer, as well as thank customers for purchasing our product. Additionally, season tickets from a variety of sports teams will also be used in an effort to attract customers.

OPTIMIZE DAYS & GREENMARK DAYS

Optimize Days will be a way for Platinum Producers to come experience and see our product first hand. These producer events will have demonstrations of the Optimize Sprayer and its capabilities. Throughout the day, producers will get a firsthand look at what the Optimize Sprayer can do for their farm, as well as meet with product specialists who will be guide producers on the product specifications. Meals, as well as promotional items and agronomists will also be a fixture of Optimize Days. Optimize intends to have eight Optimize Days in year one, followed by fifteen in year two, and twenty-three in year three. Additionally, Optimize will have a presence at GreenMark Days throughout shows within our target areas.

SOCIAL MEDIA

The creation of a YouTube channel and Facebook page will allow us to post tutorials and spotlights about the product. In addition, customer experiences and testimonials about Optimize Sprayer will be included.

DIGITAL MARKETING

GreenMark will use search engine optimization to get Optimize to the top search result, leading to higher website traffic and product awareness. We will harness a “pay-per-click” online marketing strategy to be cost-effective but also help direct more internet traffic towards our website.

TRADE SHOWS

GreenMark will be at multiple trade shows in an effort to connect with potential Platinum Partners. We hope to inform and make long lasting connections with these customers. Booth visitors and potential customers will be offered a firsthand look at our product and a variety of promotional products such as hats and shirts. In addition, identified Platinum Partners will be offered free tickets to these expositions and invitations to events held after.

TRADE SHOW SCHEDULE		
Year 1	Year 2	Year 3
<ul style="list-style-type: none">• Farm Progress Show (IL, IA)	<ul style="list-style-type: none">• Year 1 Expositions• Nebraska Power Farming Show (NE)• Western Farm Show (KS)	<ul style="list-style-type: none">• Year 1 & 2 Expositions• Mid South Farm & Gin Show (TN)• National Farm & Machinery Show (KY)

AFFILIATIONS

GreenMark and Optimize are planning to partner with the Illinois, Iowa, Kansas Arkansas, Missouri, Nebraska, Tennessee, and Mississippi Soybean Associations. These strategic partnerships will allow us to gain trust from and name recognition with our Platinum Partner customers. In addition, we are also planning to work with extension agents from Iowa State, Illinois, Missouri, Mississippi State, Tennessee, Arkansas, and Kansas State Cooperative Extension. Following successful tests of our product, extension agents from these universities will be able to inform and suggest our product to soybean farmers within our target markets.

WEBSITE

GreenMark will have a website with a first person view of how the Optimize Sprayer works. This will allow potential customers to get informed and educated about the product. A user friendly interface will be used making our website available on computers, tablets and mobile devices. The website will contain information about the Optimize Sprayer, a tutorial showing how it works, a cost savings analysis, and a way to get in contact with one of our salespeople.

DIRECT MAILING

Identified Platinum Producers will be mailed a number of marketing materials relating to the Optimize Sprayer. The mailers will both inform producers about our product and have contact information to get in touch with one of our product specialists. Additionally, invitations to producer events, such as Optimize Days, will be sent through the mail.

MEDIA KITS

Following our product launch, media kits will be sent out to a number of trade and grower publications in an effort to generate excitement and publicity about our product. Publications will include the American Soybean, Farm Equipment, Farm Progress magazines, as well as many more localized soybean and equipment publications.

GIVING BACK

At Optimize Technologies, giving back to the community is essential to our business. Every year, we intend to donate \$50,000 to FFA chapters and 4H programs in our target areas.

FINANCIALS

INCOME STATEMENT	YEAR 1	YEAR 2	YEAR 3
Optimize Units Sold	19	42	88
Optimize Wholesale Price	\$350,000	\$350,000	\$350,000
Total Sales	\$6,650,000	\$14,700,000	\$30,800,000
Production Expenses	\$6,006,000	\$11,865,000	\$18,900,00
Trademarks & Licensing	\$50,000	\$50,000	\$50,000
Administrative	\$180,000	\$182,500	\$185,000
Warranty Costs	\$266,000	\$588,000	\$1,232,000
Unanticipated Costs	\$50,000	\$50,000	\$50,000
COGS	\$6,552,000	\$12,753,500	\$20,417,000
Gross Profit	\$98,000	\$1,964,500	\$10,383,300
Operating Expenses	\$500,000	\$575,000	\$661,250
Marketing Expenses	\$1,319,289.60	\$2,228,546.10	\$3,328,644,90
Net Profit/Loss	\$(1,721,289.60)	\$(839,046.10)	\$6,393,085.10
Percent Profit	-25.88%	-5.71%	20.76%

MONITORING & MEASURING

GOAL	SELL 19 UNITS	NET \$98,000 GROSS PROFIT	ACHIEVE 94% CUSTOMER SATISFACTION
MEASURING TECHNIQUE	Sales reports and an inventory management system	Sales reports and income statements	Surveys, social media, and customer reviews
INTERVAL	Quarterly and Yearly	Quarterly and Yearly	Continuously
IF MORE	Invest additional revenue into more efficient production equipment	Save extra profit for investment into a second generation sprayer	Continue successful strategies
IF LESS	Reevaluate marketing techniques and explore new target markets	Intensify personal selling efforts and double down on attending trade shows	Invest in building better relationships with customers

CONCLUSION

Optimize Sprayer is the future of herbicide application in soybeans. Our revolutionary technology will allow us to aid soybean farmers while creating a new market for GreenMark. We are confident that not only can our product eliminate herbicide resistant weeds, but help farmers cut down on costs, and improve yields.



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