



# BioBeez

SOMETHING TO **B U Z Z** ABOUT

## University of Wisconsin-Madison | 2023 Executive Summary

Katharina Angerer | Camryn Ballweg | Nate Daniels | Kylie Germann  
Kendra Gillett | Sam Henderson | Jacob Kafer | Gracie Krahm | Anisia Matejic  
Megan Moede | Molly Olstad | Casey Schlatter | Jenna Wiker  
Leader: Olivia Spaight | Advisor: Sarah Botham



# INTRODUCTION

BioBeez is a biological solution for cranberry growers that increases yields by as much as 15% while minimizing pesticide use and diminishing harm to the environment.<sup>1</sup> Using bees to deliver organic, multifunctional control agents to flowering cranberries, **BioBeez provides a strong producer return on investment of \$350 per acre.** Additionally, this first-to-the-market solution presents significant environmental benefits and opportunities for expansion into other cross-pollinating crops.

The global cranberry market is on track to reach nearly \$3 billion in 2023, with rising demand pushing growers to increase yields while combating persistent challenges.<sup>2</sup> Cranberries are a notoriously finicky crop. Heavy pesticide use has helped growers remedy issues like fungus, insects and crop mortality but presents significant human and environmental consequences. Recent bans on chemicals used on cranberries in the United States (U.S) and Canada limit management options.

Pesticide overuse has landed cranberries on lists of fruits to avoid or buy organic. However, of the nearly 60,000 acres of cranberry marshes in North America, just a fraction are organic.<sup>3</sup> Few solutions currently exist to deliver control agents that perform well and mitigate toxicity to humans and the environment.

BioBeez is a new division of BioAgents Midwest, an established crop-health-management company headquartered in Monroe County, Wisconsin. With extensive experience in biologicals, BioAgents Midwest is expanding its solutions to include BioBeez. Given recent regulatory changes, rising input costs, environmental challenges and an ever-growing demand for cranberries, now is the time to bring BioBeez to market.

## THE SYSTEM

BioBeez uses patented hive-tray attachments, powder and bees for the targeted application of control agents. The powder adheres to bees' legs when they walk through the trays as they leave the hive. The bees then carry this powder to the plant when pollinating, increasing accuracy of application and drastically reducing the amount of control agent needed.



## MARKET ANALYSIS

### MARKET TRENDS

- The global cranberry market is projected to register a compound annual growth rate of 3.4% through 2030.<sup>4</sup>
- The sustainable agriculture market is anticipated to surpass \$28 billion by 2030.<sup>5</sup>
- Ocean Spray Cranberry Growers Cooperative accounts for about 90% of the cranberry yield in North America.<sup>6</sup>
- More than 40% of all honeybee colonies are lost each year, and pesticides are one of the major factors associated with colony loss.<sup>7</sup>
- Human contact is restricted for up to five days after pesticide application on cranberries.<sup>8</sup>
- Approximately 90% of North American cranberry growers rent commercial bee hives during bloom.<sup>9</sup>
- U.S. cranberry growers spend more than \$400 per acre on pesticides<sup>10</sup> while Canadian growers spend \$435 per acre.<sup>11</sup>
- Cranberry growers are mostly caucasian men aged 45 to 55,<sup>12</sup> though several generations often work a farm.<sup>10</sup>
- All cranberry growers surveyed agreed that their management decisions are influenced by sustainability and identify as early adopters of emerging technologies.<sup>10</sup>
- More than 70% of cranberry growers rely on email to receive information from associations.<sup>13</sup>
- Of the cranberry growers surveyed, all said they use Facebook; 83% use Instagram and YouTube.<sup>10</sup>
- As many as 95% of growers say that information from association publications, other growers and cooperative guidelines influence their crop management decisions.<sup>10</sup>

### MARKET POTENTIAL

Seventy-six percent of adults purchase organic products over conventional due to health concerns.<sup>14</sup> Since 2000, cranberry production in the U.S. has increased by 1,400 acres or 3.5%,<sup>15</sup> and by 10,131 acres or 24% in Canada.<sup>16</sup> The global agrochemical market is expected to generate revenue of \$310 billion by 2030.<sup>17</sup> Pesticide use in the U.S. increased by 29% from 2000 to 2019<sup>18</sup> and in Canada by 234% from 2005 to 2022.<sup>19</sup>

### MARKET SIZE

The first-year target audience for BioBeez is cranberry growers in Wisconsin, consisting of 250 farms growing 20,600 acres. As BioBeez expands to encompass the U.S. market in year two, the audience includes 710 more farms and 19,000 more acres throughout Washington, Oregon, New Jersey and Massachusetts. In year three, BioBeez expands to British Columbia and Quebec, targeting 170 farms and 17,977 acres. In total, BioBeez targets 1,130 farms and 57,600 acres through the first three years.

### NEED FOR PRODUCT

BioBeez appeals to cranberry growers who face pest management challenges, high input demands and strict environmental regulations. Precision application increases per-acre yields and fruit quality by preventing fruit rot, tipworm and disease infestation. This biological, environmentally friendly solution reduces input costs while positively impacting soil microbiome and water quality; since no water, machinery or fossil fuels are required for application, management is minimized.



## CRANNIE FAMILY

Wisconsin | 300 acres

- Millennial Couple; third-generation, conventional Ocean Spray growers.
- Challenge: fruit rot and worms.
- Subscribes to industry newsletters and trade publications; attends trade shows.
- Uses Facebook and Instagram.



## BUMBLE BROTHERS

Massachusetts | 50 acres

- Baby Boomers; second-generation, conventional grower and beekeeper.
- Massachusetts Cranberry Association.
- Challenge: limiting pesticide exposure.
- Subscribes to industry publications; attends association events.
- Uses YouTube and Facebook.



## BERRY BUNCH

Quebec | 150 acres

- Fifth-generation, organic Ocean Spray growers.
- Challenge: fruit quality and yield.
- Early adopters of agricultural technologies.
- Subscribes to industry newsletters.
- Uses Facebook and Instagram.



## COMPETITIVE ANALYSIS


BioBeez enters the North American market as the only biological control agent delivered by bees during cranberry pollination. BioBeez improves yield quality and quantity through an environmentally sustainable process with no risk to humans or bees. The waterless application method reduces pollution caused by toxic runoff. Labor and equipment inputs are also minimized.

### DIRECT COMPETITORS

Operating as the only biological, multifunctional control agent for fungus and insects, BioBeez has no direct competitors.

### INDIRECT COMPETITORS

Indirect competitors include biological and chemical fungicides and insecticides. Dithane F-45 by Corteva is a chemical fungicide and Avaunt by FMC is a chemical insecticide. Double Nickel 55 by Certis Biologicals is a biological fungicide and BT Now by BioSafe Systems is a biological insecticide. These products must be combined to achieve the same coverage provided by BioBeez.

	BIOLOGICAL	MULTI-FUNCTIONAL CONTROL	DURING BLOOM	SAFE FOR BEES	ANNUAL PRICE per acre
 BioBeez	✓	✓	✓	✓	\$ 400
Dithane F-45 fungicide			✓		\$ 368
Avaunt insecticide			✓		fungicide: 230 insecticide: 138
Double Nickel 55 fungicide	✓			✓	\$ 370
BT Now insecticide	✓			✓	fungicide: 220 insecticide: 150

### STRENGTHS

- First to the market
- Reduces pollution, wastewater and runoff
- Improves crop health and crop yield
- Sustainable and environmentally friendly process
- Appropriate for organic and conventional farms
- Precision timing and targeted application
- No water required for application
- Addresses largest crop-health threats
- Safe for humans, bees and the environment

### WEAKNESSES

- Audience resistance to change
- Lack of awareness
- Brand loyalty
- Hesitation regarding application method

### OPPORTUNITIES

- Elevated interest in progressive technology
- Rising adoption of environmentally friendly agriculture
- Increased demand for cranberries
- Ongoing bans of chemical pesticides

### THREATS

- Introduction of a shadow product
- Disruption in ingredient supply
- Weather and natural disasters
- Decline in bee populations



# BUSINESS PROPOSITION

## STRATEGY STATEMENT





Capitalizing on crop-health-management expertise and a strong understanding of grower needs, BioBeez broadens market opportunities and gains a foothold in the cranberry crop-health-management industry by providing environmentally sustainable, superior-quality solutions and exceptional customer care and education. High-retention grower relationships provide long-term opportunities, producer benefit and industry success.



## ASSUMPTIONS

- 1 BioBeez is a division of BioAgents Midwest, an established crop-health-management company with experience in development and delivery of biological agents for crop and soil health.
- 2 The BioBeez biological control agent is certified organic and approved by the United States Department of Agriculture (USDA) and Agriculture and Agri-Food Canada (AAFC) as well as the Food and Drug Administration, Canadian Food Inspection Agency, Environmental Protection Agency and Canadian Environmental Protection Agency. The BioBeez system is widely accepted as a safe and effective delivery method for control agents.
- 3 BioBeez developed a cranberry test plot in cooperation with the University of Wisconsin-Madison during the 2023 growing season that is the basis for the product launch in 2024.
- 4 BioBeez is a safe and effective control agent delivery method accepted by commercial pollination services and has been proven to efficiently target cranberries during bloom without harming bees.
- 5 BioAgents Midwest has existing production facilities, supply lines, warehouses and distribution networks across North America and holds the patents for the control agent formula and hive-tray attachments in the U.S. and Canada.

## GOALS BY YEAR THREE

-  Achieve 80% brand awareness within the target market; 65% aided and 15% unaided.
-  Capture 25% of North American market share in the cranberry crop-health-management market.
-  Secure a trusted relationship with Ocean Spray Cooperative.
-  Retain 90% of existing grower customers.

## ACTION PLAN

### PRODUCT

BioBeez is an organic, biological control agent delivered by bees during cranberry pollination. BioBeez powder packets and hive-tray attachments are sold in per-acre quantities.

### POSITIONING STATEMENT

For North American cranberry growers, BioBeez directly addresses the most detrimental issues—fruit rot and various worms—while increasing application accuracy and yields. These financial and environmental benefits have not been addressed by competitors.

### PRICE

ONE-ACRE POWDER PACKETS	380
ONE-ACRE HIVE-TRAY ATTACHMENTS	20
TOTAL COST <i>per acre</i>	\$ 400

## PRODUCT LAUNCH

SOFT LAUNCH	Prior to year one, a test plot generates strong earned media exposure and early sales. Product is available for pre-order.
YEAR 1	BioBeez begins the year promoting at trade shows. Sales start immediately along with the launch of the We Cran Do It! campaign. Digital, traditional and influencer advertising are pushed in Wisconsin and begin in the Northeastern and Northwestern U.S. regions. Test plots in these regions open.
YEAR 2	Sales expand into the Northeastern and Northwestern U.S. regions. Marketing efforts broaden, resulting in increased reach. Trade show placements extend to Canadian regions along with advertisements. Outreach to Ocean Spray Cooperative increases through grower-driven interaction. Customer loyalty efforts intensify with returning customer discounts.
YEAR 3	Marketing efforts and trade show attendance continue to grow. Sales and staff expand into Quebec and British Columbia. Earned media exposure drives interest from Ocean Spray Cooperative.





## OBJECTIVES

- Establish a significant presence in the North American cranberry crop-health-management market.
- Inspire positive change in sustainable agriculture.
- Cultivate brand trust and loyalty.

## CAMPAIGN

We Cran Do It! targets growers and beekeepers. The campaign theme illustrates that growers see increased yields while supporting a healthier bee population and improved environment. The We Cran Do It! campaign is brought to life through cranberry test plots, influencers and a network of spokespeople including grower cooperatives, grower associations and bee protection organizations.

## BOOTS ON THE GROUND

Two brand managers oversee marketing implementation and provide sales team support. The sales team is made up of two sales managers and two interns per region. BioBeez contracts with a beekeeper for promotional events.

## TRADE SHOWS & CONFERENCES

BioBeez exhibits annually at cranberry and beekeeping-industry events.

## TEST PLOTS

BioBeez features 10-acre test plots in each region to welcome interested growers and beekeepers. Growers are incentivized to host test plots with 10 acres of free product every year and a 15% discount for an additional 90 acres. The plots' purpose is to demonstrate the success of the system and observe the bees at work.

## EVENTS

BioBeez Breakthrough lunch-and-learn events hosted at the test plots benefit growers and beekeepers by providing supplemental product knowledge.

## DISCOUNTS & COLLATERAL

Returning customers receive a 5% discount on all powder purchases. Sales staff distribute branded collateral and merchandise at trade shows and BioBeez Breakthroughs.

## TRADITIONAL MEDIA & DIRECT MAIL

BioBeez invests in advertising campaigns in targeted agricultural publications, headlining the We Cran Do It! campaign. Invitations to the BioBeez Breakthroughs are sent by direct mail.

## SOCIAL & DIGITAL MEDIA

BioAgents Midwest's website hosts the BioBeez e-commerce platform, educational materials and grower testimonials. Digital and social media promote the product story and engage regional cranberry communities via website placements and Google Ads. Quarterly e-newsletters are sent to growers. A BioBeez YouTube series features test plots, brand ambassadors and additional product education. Advertisements are placed in podcasts focusing on progressive agriculture.

## TAGLINE

**SOMETHING TO B U Z Z ABOUT** emphasizes that BioBeez is a revolutionary, organic and sustainable targeted application method. Serving as the unifying theme, Something to Buzz About attracts and retains growers while generating buzz and building brand awareness through grassroots engagement.

## INFLUENCER

BioBeez partners with influencer Amber Bristow (@cranberrychats), an Ocean Spray Cooperative cranberry grower with over 20,000 industry and followers. Sponsored content builds product and brand trust.



## EARNED MEDIA & PUBLIC RELATIONS

North American agricultural and association publications share the BioBeez story, generating buzz for the brand. Diversified earned media initiatives across channels build trust and broaden exposure.

## SPONSORSHIPS

BioBeez sponsors the Wisconsin Cranberry School, the BC Cranberry Field Day and the American Beekeeping Federation (ABF) to help expand education throughout relevant organizations. BioBeez is a vendor session speaker at the ABF conference.

## GIVING BACK

BioBeez sponsors a National FFA Organization Supervised Agricultural Experience grant and a Canadian Agricultural Youth Council grant. Through an additional grant program, BioBeez offers a 50-acre supply of product to aid growers in improving sustainability. BioBeez supports the Help Save the Bees and Planet Bee Foundations.

## INBOUND EDUCATION

Test plots host BioBeez Breakthrough lunch-and-learns for growers and beekeepers. Attendees have the opportunity to get additional information and place orders. Blogs and YouTube content will offer product and industry education for growers and beekeepers.

## OUTBOUND EDUCATION

Informational videos are shared in cranberry-grower Facebook groups. Using parent-company email lists, BioBeez shares educational content with growers. Additionally, BioBeez highlights the We Cran Do It! campaign through advertisements on agricultural podcasts and sponsored YouTube content. Grant recipients and a key influencer serve as brand ambassadors.



# FINANCIALS

BioBeez uses BioAgent Midwest's existing production facilities to manufacture its powdered control agent. Its patented hive-tray attachments are contract-manufactured in Wisconsin. The hive-tray attachments are built to be durable and reusable from year to year, and it is assumed that only 10% will need to be reordered. The cost of goods sold for the control agent is \$120 and \$14 for the hive-tray attachments on a per-acre basis. An attractive margin of 68% on the control agent and 30% on the tray attachments leads to a retail price of \$380 per acre for the control agent and \$20 for hive-tray attachments.

Year one results in a net loss due to a large investment in marketing and a small introductory market share. The investment in marketing is justified by increased sales in years two and three. In year two, BioBeez becomes profitable. By the end of year three, BioBeez generates a net profit of \$1,907,811 and a profit margin of 36%.

MARKETING EXPENSES	YEAR 1	YEAR 2	YEAR 3
SALARIES & WAGES	520,600	1,048,638	1,266,566
ASSOCIATION FEES	800	830	862
TRADE SHOWS	21,565	30,066	34,208
TEST PLOTS	20,223	36,423	36,423
EVENTS	12,600	18,684	19,394
BRANDED COLLATERAL	7,565	14,745	17,305
PRINT ADVERTISING	31,288	58,662	80,584
PODCAST MEDIA	3,000	5,190	7,266
DIRECT MAIL	650	1,000	1,500
SOCIAL MEDIA	19,966	27,281	36,219
DIGITAL MEDIA	10,600	12,623	15,646
WEBSITE	25,000	10,000	5,000
SPONSORSHIPS	6,500	10,861	12,236
GIVING BACK	8,705	9,705	13,058
TOTAL	689,063	1,284,708	1,546,267

INCOME STATEMENT	YEAR 1	YEAR 2	YEAR 3
POWDER PACKETS	782,800	2,570,320	5,256,540
HIVE-TRAY ATTACHMENTS	41,200	101,908	163,746
GROSS SALES	842,000	2,672,288	5,420,286
DISCOUNTS: RETURNING CUSTOMERS	—	35,411	119,814
NET SALES	824,000	2,636,817	5,300,472
POWDER MANUFACTURING COST	223,657	734,377	1,501,869
CONTRACT- MANUFACTURED TRAYS	27,467	67,939	109,164
PACKAGING	416	1,408	2,395
DIRECT LABOR	16,480	53,445	108,406
DAMAGED GOODS	8,420	26,368	53,005
TOTAL COGS	276,260	883,536	1,775,378
OPERATING EXPENSES	11,050	35,341	71,015
MARKETING EXPENSES	689,063	1,284,708	1,546,267
TOTAL EXPENSES	976,373	2,203,586	3,392,661
NET PROFIT (LOSS)	(152,373)	433,230	1,907,811
PROFIT MARGIN	(18)%	16%	36%



# MONITORING AND MEASURING

GOAL by year three	BRAND AWARENESS 80% within target market 65% aided; 15% unaided	MARKET SHARE capture 25% of the North American market	SECURE TRUSTED RELATIONSHIP Ocean Spray Cooperative	GROWER RETENTION retain 90%
HOW	Keyhole; Cision PR Newswire; surveying cranberry growers and beekeepers; trade show attendance and engagement.	Monthly, quarterly and annual industry trends and reports; USDA and AAFC; Mintel.	Product recommendation.	Repeat purchases; quarterly and annual reports.
IF MORE	Contract with additional cranberry growers.	Expand geographic reach; invest in research and development.	Product endorsement; partnership campaign.	Contract with cranberry growers.
IF LESS	Reassess partnerships and marketing initiatives; enhance education efforts.	Reevaluate cranberry market trends and grower retention strategies; reassess marketing initiatives.	Reassess key cooperative influencers; increase earned media initiatives.	Refine marketing strategies; focus on product education and points of differentiation.

## CONTINGENCY PLAN

Expand geographic reach to Ontario and Nova Scotia, Canada as well as Chile; explore additional cross-pollinating crops.

## CRISIS PLAN

BioBeez has fully vetted crisis plans in place to manage unforeseen events.



# WORKS CITED

## INTRODUCTION

1. An Integrated Pest Management Strategic Plan for Oregon and Washington Cranberries, Oregon State University, 2018: <https://bit.ly/3JW0LWG>
2. Cranberries Market Size to Rise by USD 2.69 Billion | 2.42% YOY growth in 2022 | 17,000+ Technavio Research Reports, Technavio, 2022: <https://prn.to/3LTivVw>
3. Cranberry Production: A Guide for Massachusetts - Summary Edition, University of Massachusetts Amherst, 2008: <https://bit.ly/3zaxOBH>

## MARKET ANALYSIS

4. Agrochemicals Market Size to Reach USD 310.24 billion by 2030, Outlines a New Report by Next Move Strategy Consulting, GlobeNewswire, 2023: <https://bit.ly/3FVhmsQ>
5. Sustainable Agriculture Market is Anticipated to Surpass USD 28.53 Billion by 2030 at a CAGR of 9.9% from 2022–2030; Growing Consumer Demand for Organic and Sustainable Food Products to Propel Market Growth, GlobeNewswire, 2023: <https://bit.ly/3ns9LeX>
6. Cranberries Market Size & Share Analysis - Industry Research Report - Growth Trends, Global Newswire, 2023: <http://bit.ly/3G7uoUa>
7. Pesticide Widely Used in U.S. Particularly Harmful to Bees, Study Finds, The Guardian, 2019: <https://bit.ly/3nvaqw9>
8. Cranberry Pest Management in Wisconsin 2023, University of Wisconsin-Madison Extension, 2022: <https://bit.ly/3G3pMhL>
9. Pollinators Provide Extra Buzz To Wisconsin's Cranberry Crop, WisCONTEXT, 2018: <http://bit.ly/3zkul3n>
10. Market Research Survey, Wisconsin NAMA UW-Madison, 2023: <https://bit.ly/40SHxs9>
11. Business Planning and Economics of Cranberry Bog Establishment and Cost of Production in Nova Scotia, Nova Scotia Department of Agriculture: <https://bit.ly/3ISzgpi>
12. Social and Ecological Conditions of Cranberry Production and Climate Change Attitudes in New England, Plos One, 2018: <https://bit.ly/40LB1U3>
13. 2013 Cranberry Growers Social Media Survey, University of Massachusetts Amherst, 2013: <https://bit.ly/3JShAlx>
14. 9 Organic Food Statistics That May Surprise You, Gillco Ingredients, 2022: <https://bit.ly/3lXuAya>
15. Cranberries of Wisconsin Analyzing the Economic Impact, University of Wisconsin-Whitewater, 2012: <https://bit.ly/3M0pPie>

16. Crops and Livestock Products, Food and Agriculture Organization of the United Nations, 2021: <http://bit.ly/3zg3OV2>
17. Agrochemicals Market is Expected to Generate a Revenue of USD 309.7 Billion by 2030, Globally, at 3.6% CAGR: Verified Market Research, GlobeNewswire, 2022: <https://bit.ly/3JQLIDq>
18. AgroPages-FAO: Global Pesticides use Rose 36% Over the Last Two Decades: Agricultural News, Agropages, 2021: <https://bit.ly/42LRYiX>
19. Pesticides, Canadian Biotechnology Action Network, 2023: <http://bit.ly/3Mhcwdt>