



Arcadia
B I O S C I E N C E S

UBS Agriculture Day

December 7, 2016

Forward-looking statements

“Safe Harbor” statement under the Private Securities Litigation Reform Act of 1995: This presentation contains forward-looking statements about the company and its products, including statements relating to components of the company’s long-term financial success; the company’s traits, commercial products, and collaborations; the company’s ability to manage the regulatory processes for its traits and commercial products; the company’s anticipated financial results; current and future products under development; additional collaboration agreements; the regulatory process; business and financial plans; and other non-historical facts.

Forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially, and reported results should not be considered as an indication of future performance. These risks and uncertainties include, but are not limited to: the company’s and its partners’ ability to develop commercial products incorporating its traits and complete the regulatory review process for such products; continued competition in seed traits and other products; the company’s compliance with laws and regulations that impact the company’s business, and changes to such laws and regulations; the company’s reliance on its collaborators to commercialize products incorporating its seed traits; the company’s future capital requirements and ability to satisfy its capital needs; the company’s exposure to various contingencies, including those related to intellectual property protection, success of field trials, regulatory compliance, the speed with which regulatory approvals are received, and public acceptance of biotechnology products; developments related to foreign governmental regulations, political climate, currencies and economies; successful operation of the company’s joint ventures; fluctuations in commodity prices; the company’s ability to obtain a significant portion of the increased value to farmers from products that incorporate its traits; and the effect of weather conditions, natural disasters and accidents on the agriculture business or the company’s facilities.

Further information on these and other factors that could affect the company’s financial results are included in filings it makes with the Securities and Exchange Commission from time to time, including the section entitled “Risk Factors” in the company’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2016. These documents are or will be available on the SEC Filings section of the Investor Relations pages of the company’s website at www.arcadiabio.com. All information provided in this presentation and in the attachments is as of the date hereof, and Arcadia Biosciences, Inc. undertakes no duty to update this information.

Arcadia develops plants that create value for growers while improving the environment and enhancing human health

- 🌱 Founded in 2002
- 🌱 Public company (Nasdaq: RKDA)
- 🌱 Headquarters and main R&D facilities in Davis, California



Arcadia is well positioned for future growth

- ④ Assembled a leading team of science, product development, regulatory and business professionals
- ④ Focused on development of traits addressing abiotic stress and improving quality
- ④ Robust pipeline of GM and non-GM traits
- ④ Multiple products in advanced stages of development
- ④ Unique business model leverages partnerships with seed companies and processors to bring products to market
- ④ Numerous licenses in place with global partners in major crops

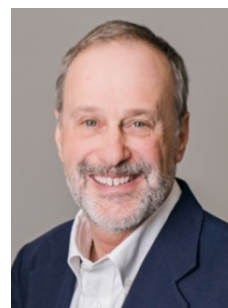
Arcadia is led by seasoned executive team with substantial ag-biotech experience



Raj Ketkar

President & CEO

- 30+ years ag-biotech development
- Monsanto, Mahyco-Monsanto Biotech



Vic Knauf

Chief Scientific Officer

- 30+ years ag-biotech development
- Calgene, Monsanto, Tilligen/Anawah



Matthew Plavan

Chief Financial Officer

- 25+ years financial management
- Cesca Therapeutics, Strion Air, McKesson Company, Ernst & Young



Roger Salameh

Chief Operating Officer

- 25+ years ag-biotech business development
- Calgene, Monsanto



Wendy Neal

Vice President & Chief Legal Officer

- 19+ years intellectual property and corporate law
- Snell & Wilmer LLP, GE Aircraft Engines



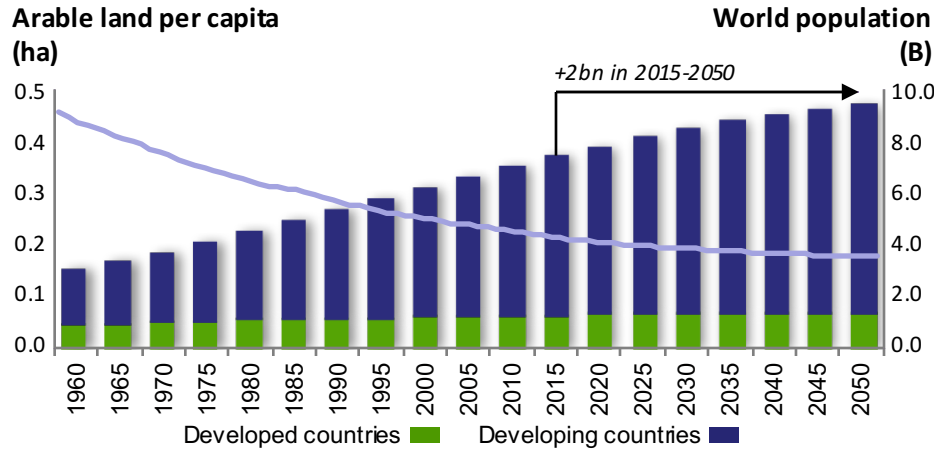
Zhongjin Lu

Vice President, Product Development

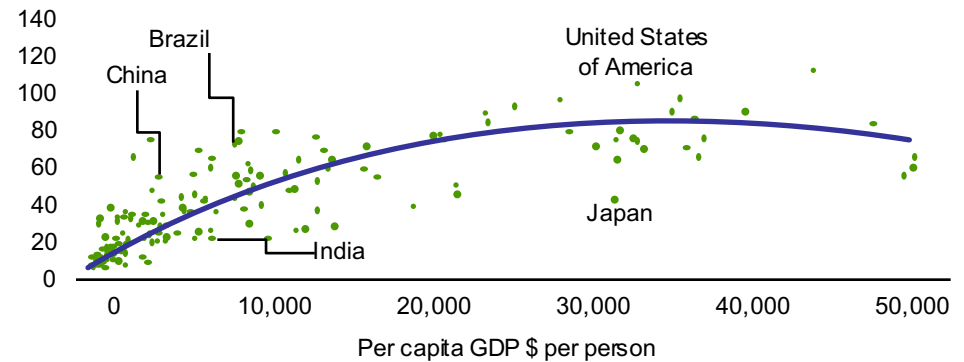
- 30+ years ag-biotech development
- Seaphire International, Monsanto, Jiangsu Academy of Agricultural Sciences

Agricultural yield is always critical, and traits create significant value

Population growth and increasing per capita income drive need for increased yield

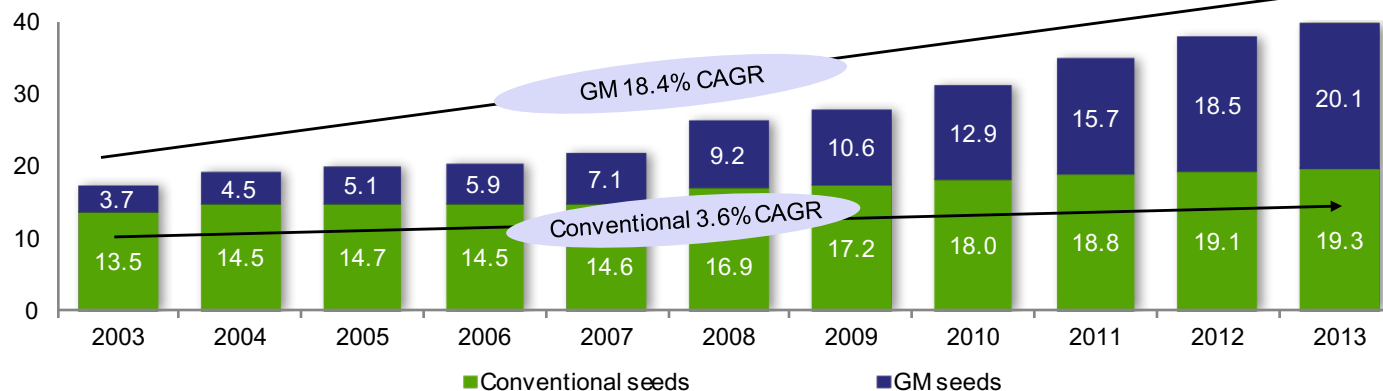


Meat consumption vs. GDP: more income = more calories (Per capita meat consumption, kg/year)



Seeds are the vehicle for delivering improved genetics and have had tremendous growth

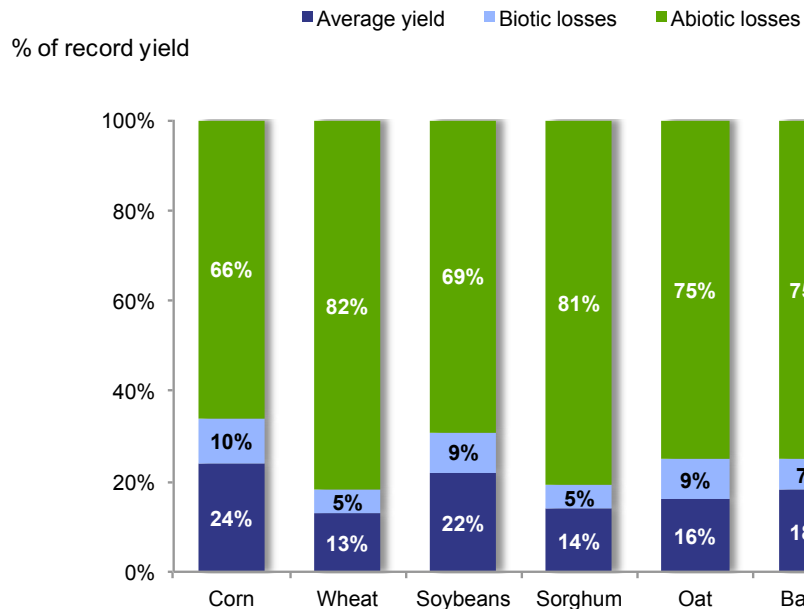
Value of global seed market (\$B)



Source: Food and Agriculture Organization of the United Nations (FAO), Seed Industry Synopsis, Phillips McDougall, June 2014

Significant growth potential exists from next wave of abiotic stress traits

Abiotic stress accounts for 66-82% of lost yield



Addressing yield losses caused by abiotic stresses represents untapped growth opportunity

Limited number of commercially available abiotic stress solutions on the market:

Agrisure Artesian

genuity
DROUGHTGARD HYBRIDS

Optimum
AQUAmax

Multiple commercially available biotic stress solutions (partial list):

HERCULEX
Insect Protection

Enlist
Soybeans

TwinLink

Optimum
Intrasect
ABOVE

Optimum
Leptra

LIBERTY
LINK

POWERCORE

Roundup
Ready
CORN 2

Agrisure Duracade

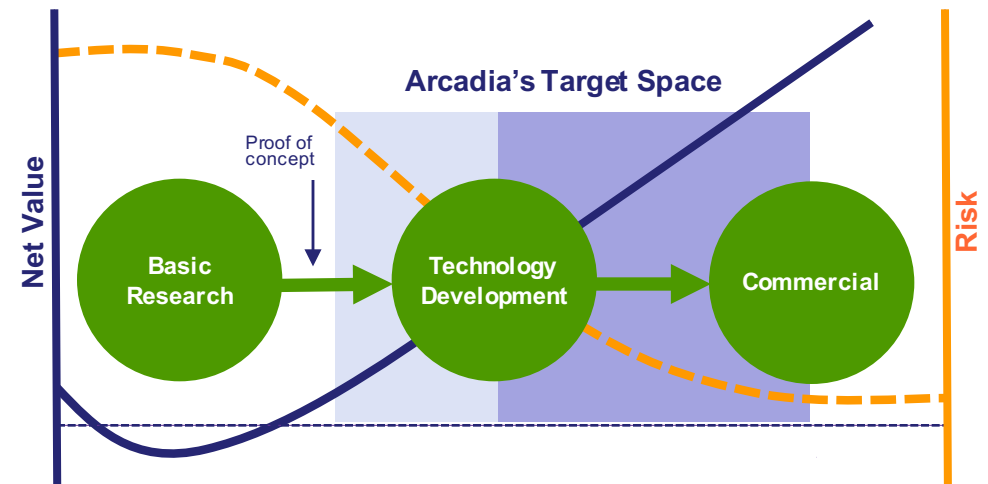
REFUGE ADVANCED

genuity
SMARTSTAX
ROUNDUP READY 2 YIELD
SOYBEANS

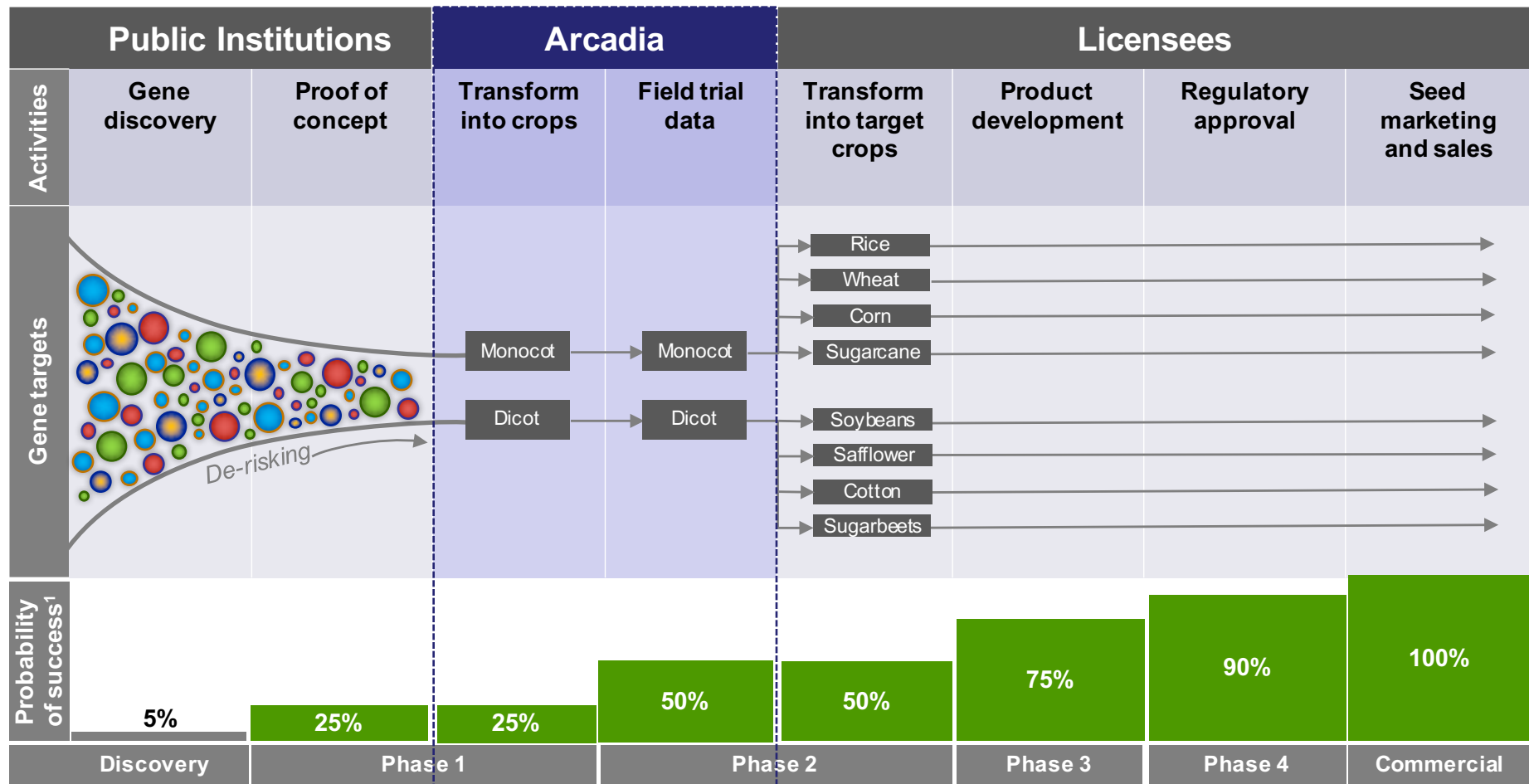
- GM seed market of approximately \$20B based primarily on biotic stress management – highly competitive, multiple products; zero-sum play
- Abiotic stress management has greater value potential, minimal current products, and opportunity for major market expansion

Bridging the gap between basic research and commercial development

- Capitalizing on a decade of investments, moving GM and non-GM product candidates closer to commercialization
- Focusing on product development, regulatory and commercial needs
- Managing resource allocation to drive mid-term revenue and successful product launches
- Targeting large-acre, high value crops: such as corn, rice, soybeans and wheat



Arcadia's business model reduces risk and leverages third-party capital and capabilities



Source: Company information, Phillips McDougall, Seed Industry June 2014.

¹ Based on industry standard probabilities of success in technical feasibility

Partnered with leaders in target crops, markets and geographies

Soybeans		<ul style="list-style-type: none"> Owned by ~300 of largest soybean farmers in South America 	<ul style="list-style-type: none"> Verdeca JV partner Commercial partner
		<ul style="list-style-type: none"> Leader in crop protection traits Development and regulatory expertise 	<ul style="list-style-type: none"> Development and commercial partner
		<ul style="list-style-type: none"> Leading South American seed company 	<ul style="list-style-type: none"> Development and commercial partner
		<ul style="list-style-type: none"> Brazilian soybean seed company representing ~35% of sales in South America 	<ul style="list-style-type: none"> Development and commercial partner
Corn		<ul style="list-style-type: none"> Leader in crop protection traits Development and regulatory expertise 	<ul style="list-style-type: none"> Development and commercial partner
		<ul style="list-style-type: none"> Leading seed retailer in US 	<ul style="list-style-type: none"> Development and commercial partner
Wheat		<ul style="list-style-type: none"> Leading global wheat seed breeder and marketer Fourth largest global seed company overall 	<ul style="list-style-type: none"> Investor JV partner Commercial partner
Rice, Cotton, Wheat		<ul style="list-style-type: none"> Biotech trait leader in SE Asia Cotton trait leader in India 	<ul style="list-style-type: none"> Commercial partner
Nutritional Oils		<ul style="list-style-type: none"> Leading nutrition and medical foods company 	<ul style="list-style-type: none"> Commercial partner
Grain Quality		<ul style="list-style-type: none"> Leading global grain miller 	<ul style="list-style-type: none"> Commercial partner

- Commercial agreements enable and incentivize sub-licensing and stacking to maximize trait market share
- Arcadia provides traits and services to achieve high value capture
- Licenses generally extend for 20 years from commercial launch, with value shared independent of patent life

Partial list

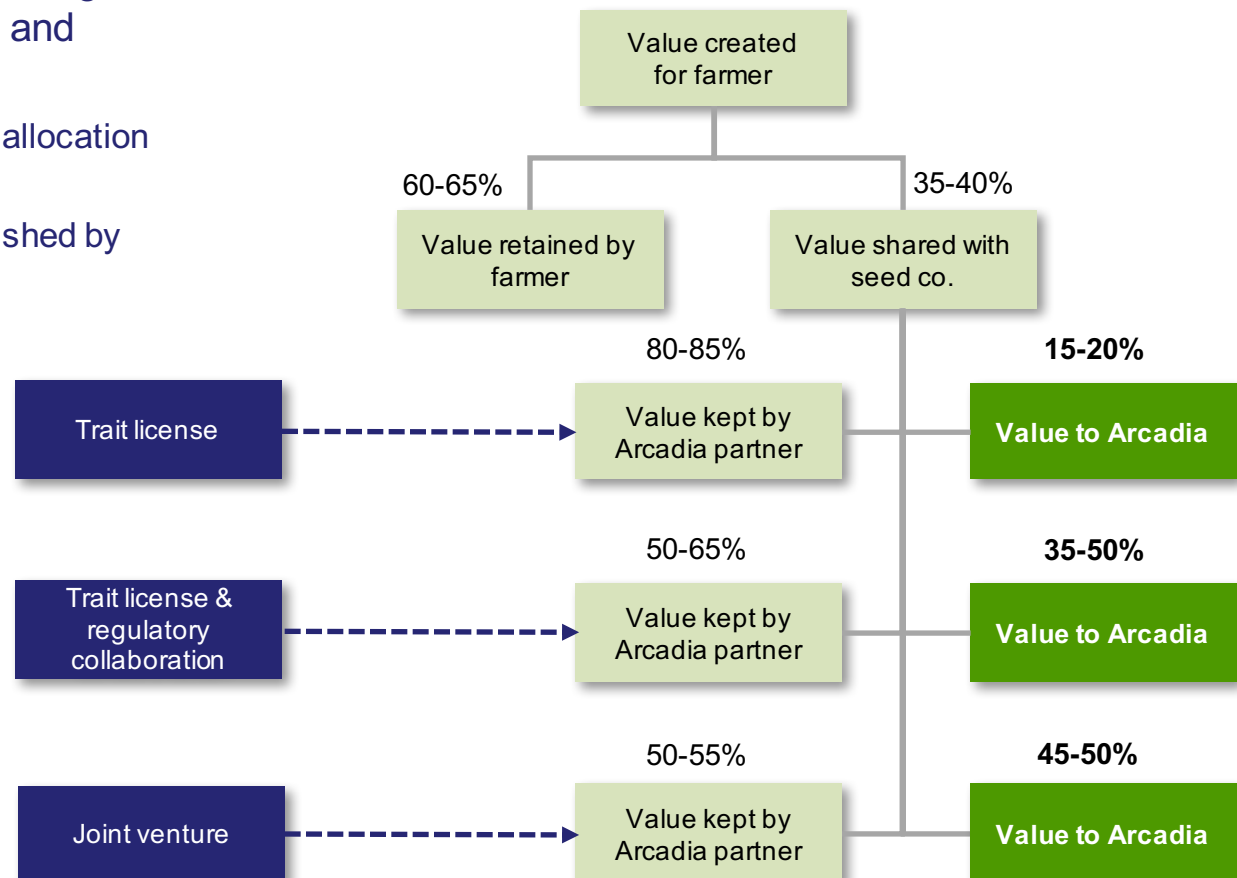
Traits and capabilities lead to high value capture

Value-sharing

- Arcadia has licensed key technologies to partners for most major crops and countries

- Farmer – seed company value allocation based on partner experience
- Arcadia value allocation established by contract

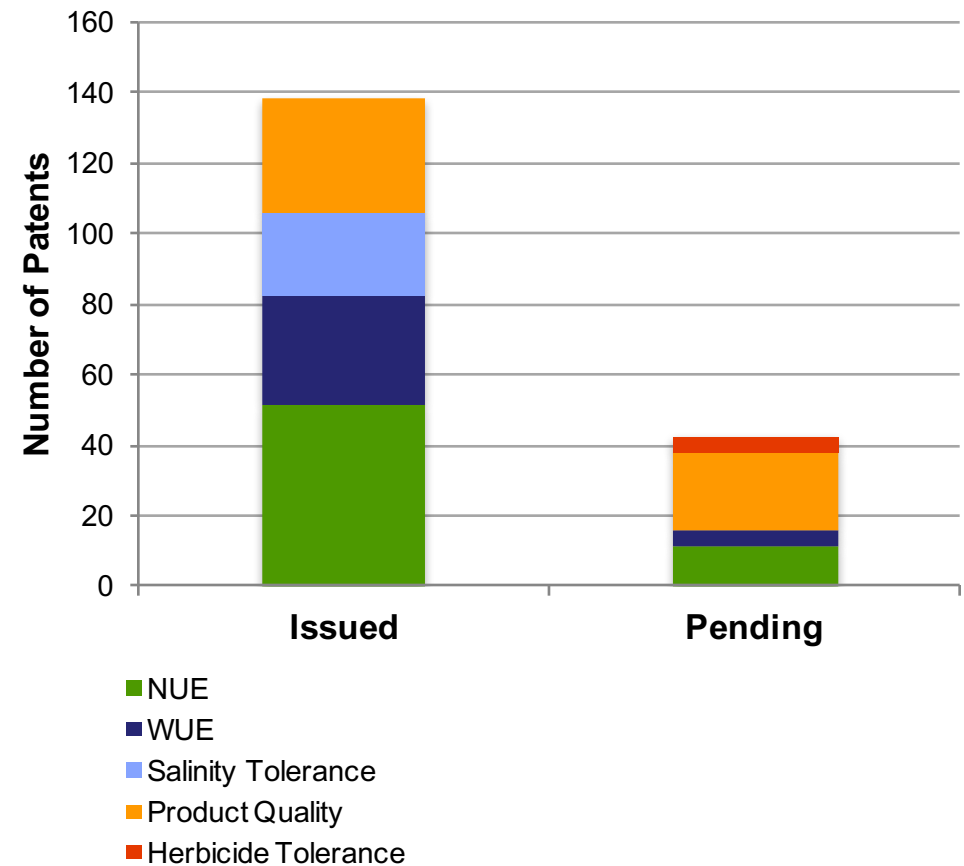
- Three primary license types:



Robust and growing patent portfolio

- Own or exclusively control 137 issued and 45 pending patent applications worldwide
- Numerous additional intellectual property rights in-licensed exclusively or non-exclusively, but without direct control over the relevant patent portfolios
- Since January 1, 2015
 - 25 new patents have issued
 - 19 new patent applications have been filed

Patent portfolio



TILLING as a source of non-GM traits

Targeting Induced Local Lesions IN Genomes Discovery of new genetic diversity

Source of novel phenotypes

- Starch composition
- Fiber
- Oil content
- Oil composition
- Other quality traits
- Yield

Benefits


- **Non-GM**, single nucleotide changes
- Insight into gene function and pathways
- Wide allelic diversity all in same genetic background

Effective applications



- Knockout gene function
- Modulate expression, kinetic properties or allosteric regulation
- Increase activity as dominant in some cases

Arcadia TILLING Libraries

Current Libraries

Soybean	Pasta Wheat	Bread Wheat	Indica Rice	Canola
				
1/100 kb	1/45 kb	1/24 kb	1/220 kb	1/68 kb

Previous Experience

Tomato	Lettuce	Other
		<ul style="list-style-type: none">• Castor Bean• Corn• Cotton• Peanut• Pepper• Cypress Rice

Non-GM resistant starch wheat product addresses nutrition and health needs

Resistant Starch Wheat (non-GM)

DEVELOPMENT PHASE / PROBABILITY OF SUCCESS¹

D	1	2	3	4	C
5%	25%	50%	75%	90%	

Market Potential

- Global
- \$2B market opportunity

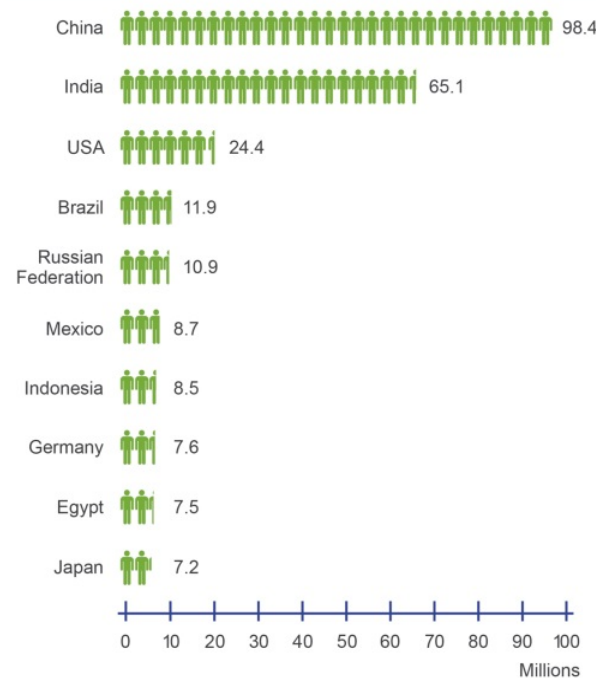
Value Creation

- Based on delivery of greater total dietary fiber in wheat products
- Trait share potential: Medium

Resistant Starch Wheat Highlights

- Resistant starch wheat leads a series of products that provide breakthroughs in wheat nutrition and functionality
- Increases dietary fiber and decreases glycemic index, important in obesity and diabetes mitigation
- Scaling-up production to meet pilot testing to support our partners' processing, formulation and commercial launch plans
- Trait introgression into commercial germplasm is underway
- Converging breeding and partner product development efforts to support commercial launch in the next few years

Top 10 countries with people with diabetes (ages 20-79), 2013



Source: International Diabetes Federation, Company information

¹ Based on industry standard probabilities of success in technical feasibility

HB4 stress tolerant soybeans lead pipeline in regulatory and breeding advancements

Stress Tolerance – Soybeans

DEVELOPMENT PHASE / PROBABILITY OF SUCCESS¹

D	1	2	3	4	C
5%	25%	50%	75%	90%	

Market Potential

- Global: 272M acres
- 4th largest global crop
- Focus: Americas, Asia

Value Creation

- Each 10% yield increase creates added value of ~\$40 per acre
- ~\$4B globally in annual trait value
- Trait share potential: High

Soybean Highlights

- Joint venture with Bioceres a company owned by ~300 of the largest soybean farmers in South America 
- ~80% historic trait adoption in soybeans, highest of any crop
- Introgression underway with breeders covering more than 35% of soybean seed sales in South America
- Regulatory approval completed in Argentina, pending in Uruguay
- Regulatory dossier submitted to China, and planned for largest single markets:
 - Production: US and Brazil
 - Consumption: Europe

Stress Tolerant Soybean Field Trials



Source: FAO, Phillips McDougall, Company information

¹ Based on industry standard probabilities of success in technical feasibility

Corn strategy leverages partner expertise and assets to advance yield and stress pipeline

Yield and Stress Traits – Corn

DEVELOPMENT PHASE / PROBABILITY OF SUCCESS ¹					
D	1	2	3	4	C
5%	25%	50%			

Market Potential

- Global: 433M acres
- Most valuable trait crop
- 53% of market value in the US
- Focus: Global

Value Creation

- Each 10% yield increase creates ~\$62 of added value per acre
- ~\$11B in annual trait value
- Trait share potential: High

Corn Highlights



- Leading global commercial development partner
- Proven crop protection products and pipeline complements Arcadia yield and stress platform
- Strong track record of broad trait licensing and collaboration
- Collaboration resulted in two product candidates in Phase 2 of development



- Largest family-owned retail corn seed company in the US
- Leadership position in key market segments
- Transformation, testing and product development capabilities




Source: FAO, Phillips McDougall, Company information

¹ Based on industry standard probabilities of success in technical feasibility

Gamma Linolenic Acid (GLA) Oil was developed and commercialized in <6 years

GLA Safflower Oil						Market Potential	Value Creation
DEVELOPMENT PHASE / PROBABILITY OF SUCCESS ¹						<ul style="list-style-type: none"> Global \$20M-100M market opportunity 	<ul style="list-style-type: none"> Anti-inflammation, skin health and weight control benefits Market share potential: High
D	1	2	3	4	C		
5%	25%	50%	75%	90%			

GLA Highlights

- Abbott: Technology and commercial partner 
- Currently used as an ingredient in nutritional supplements of major retailers
- Higher concentration of GLA than traditional sources
- Successful FDA process in 2009 demonstrates regulatory capabilities
- FDA regulatory approval pending for use in pet food – new market opportunity
- Applications in nutritional supplements, medical foods, infant nutrition and cosmetics



GLA Source	% GLA	Price / lb GLA
Evening Primrose Oil	10%	Higher
Borage Oil	20%	Medium
GLA Safflower Oil	40%	Lower

Source: Company information

¹ Based on industry standard probabilities of success in technical feasibility

NUE rice addresses world's most important food crop; driving double-digit yield increases

Nitrogen Use Efficiency – Rice

DEVELOPMENT PHASE / PROBABILITY OF SUCCESS

D	1	2	3	4	C
5%	25%	50%	75%		

Market Potential

- Global: 400M acres
- Most valuable global crop
- 3rd largest global crop by acres
- Focus: Asia

Value Creation

- Each 10% yield increase creates added value of ~\$63 per acre
- ~\$10B in annual trait value
- Trait share potential: High

Rice Highlights

- Partnered with major seed company and trait leader in India 
- Completed US FDA Early Food Safety Evaluation
- Multiple field tests demonstrate double-digit yield increases in major rice types
 - 30% average yield increase based on 4 years of field trials in multiple environments at CIAT in Colombia
 - 19% average yield increase based on 2 years of field trials in multiple environments
 - Introgression underway in Indica and Japonica rice varieties covering most of rice production worldwide



Source: FAO, CIAT, AATF, Phillips McDougall, Company information

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Recent Financials

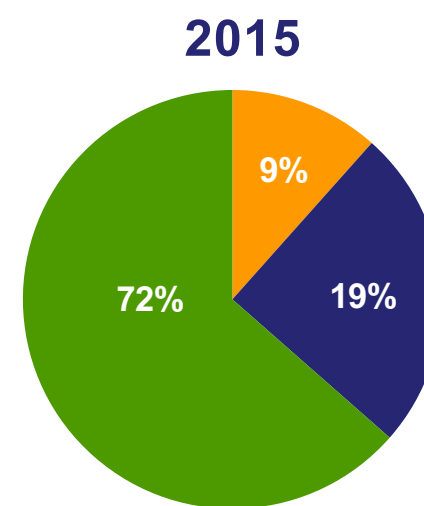
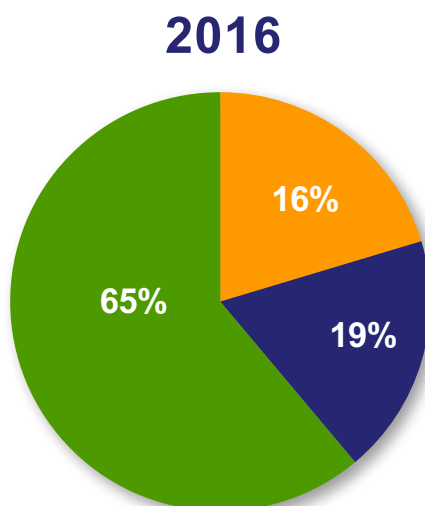
Revenue

	Third Quarter			First Nine Months		
	2016	2015	% Favorable/ (Unfavorable)	2016	2015	% Favorable/ (Unfavorable)
Product revenue	102	123	(17%)	422	383	10%
License revenue	218	214	2%	510	773	(34%)
Contract research and government grants	755	1,486	(49%)	1,716	2,912	(41%)
Total revenues	1,075	1,823	(41%)	2,648	4,068	(35%)

\$ in thousands; Unaudited

First nine months revenue mix comparison:

- Product revenue
- License revenue
- Contract research and government grants



P&L highlights



	Third Quarter			First Nine Months		
	2016	2015	% Favorable/ (Unfavorable)	2016	2015	% Favorable/ (Unfavorable)
Total revenues	1,075	1,823	(41%)	2,648	4,068	(35%)
Cost of product revenues	60	61	2%	242	223	(9%)
R&D expense	2,255	3,179	29%	6,673	7,097	6%
SG&A expense	2,687	2,818	5%	8,882	8,241	(8%)
Loss from operations	(3,927)	(4,235)	7%	(13,149)	(11,493)	(14%)
Net loss	(4,175)	(4,619)	10%	(13,916)	(14,099)	1%
Net loss attributable to common stockholders	(4,175)	(4,619)	10%	(13,916)	(16,870)	18%
Net loss per share attributable to common stockholders	(0.09)	(0.11)	N/A	(0.31)	(0.72)	N/A
Cash used in operating activities				(12,778)	(11,163)	(14%)
Basic and diluted shares outstanding (weighted average)	44,370,061	43,647,180		44,336,324	23,318,262	

\$ in thousands, except share and per share data
Unaudited