



# Arcadia

B I O S C I E N C E S

## Company Overview

April 2018

# 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 regarding these and other factors that could affect the company’s financial results is included in filings the company makes with the Securities and Exchange Commission from time to time, including the section entitled “Risk Factors” in the company’s Annual Report on Form 10-K for the year ended December 31, 2017. 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](http://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 Biosciences overview



Arcadia Biosciences develops agricultural products that create added value for farmers, enhance human health and improve the environmental sustainability of agriculture.

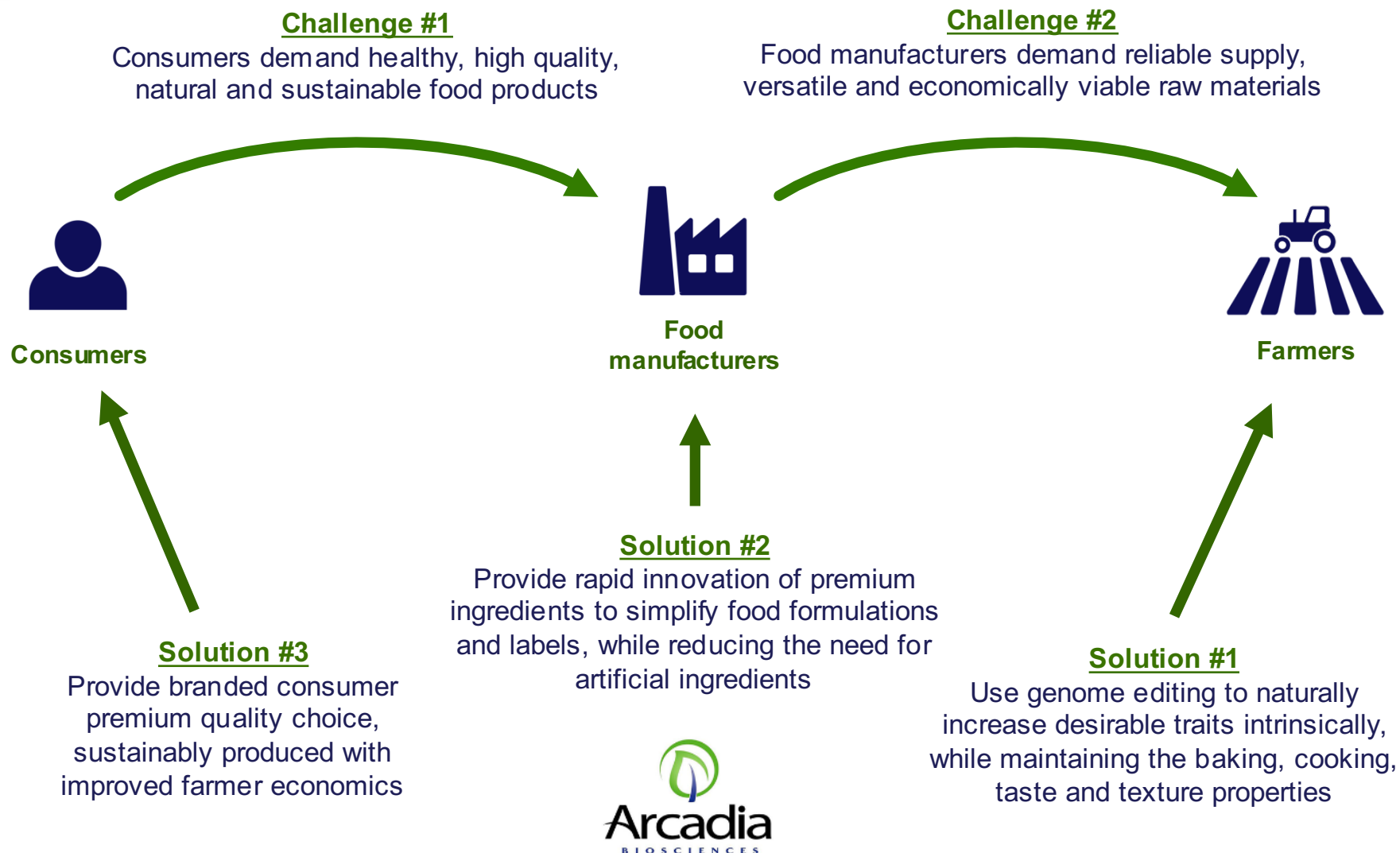
Arcadia's nutrition traits and products are aimed at creating healthier ingredients and whole foods with lower production costs.

Arcadia's agronomic performance traits are aimed at making agricultural production more economically efficient and environmentally sound.

- ④ Founded in 2002
- ④ Public company – 2015  
(Nasdaq: RKDA)
- ④ Headquarters in Davis, California

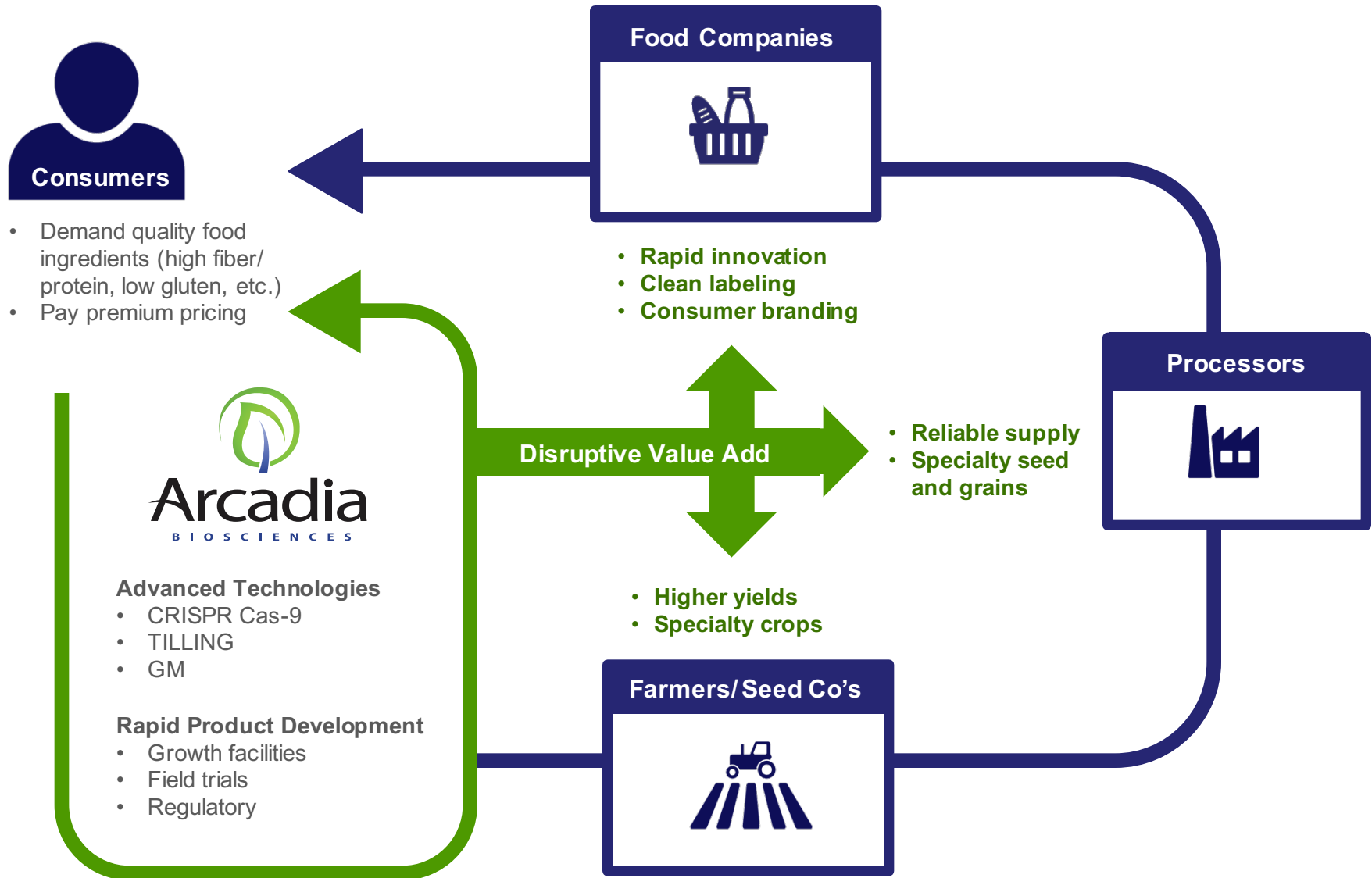


# How Arcadia addresses today's challenges in the food and agriculture value chain



Arcadia aims to build trusted and sought after consumer brands to maximize value capture at the consumer level. This in turn enables economic sharing throughout the value chain, starting with the farmer

# Arcadia business model: Transitioning to ingredient provider

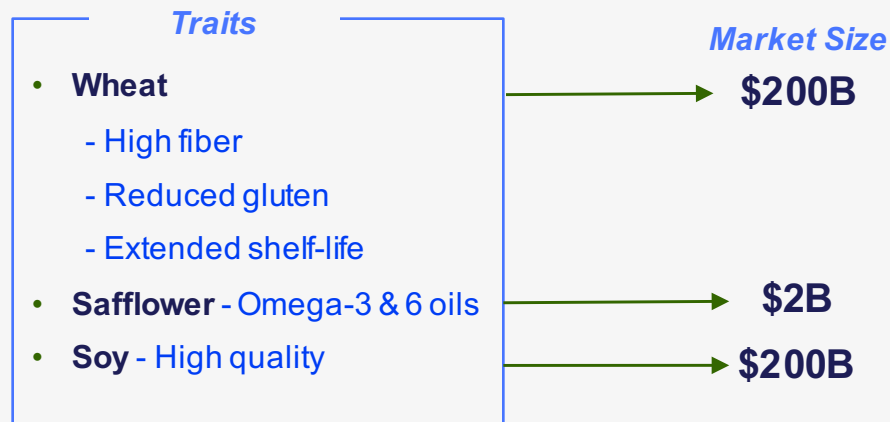


# Primary growth driver: Health & Nutrition ingredients

Building on over 15 years of industry expertise

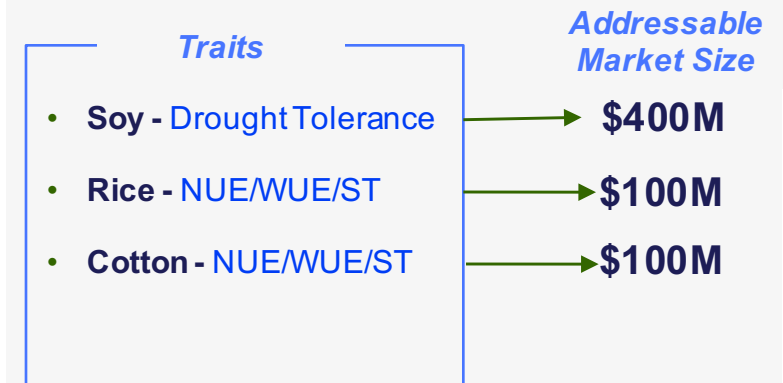
## Health & Nutrition

Increasing nutrient density and trait quality in crops to meet evolving consumer health demands



## Ag Productivity

Addresses crop productivity through intrinsic yield and abiotic stress reduction



Partnerships - Strategic alliances with global players to develop and commercialize traits



### Active Targets

- Consumer Packaged Goods Co's
- Expanded milling/processing partner coverage in EU, Japan, & Australia



# Successful results in 2017 set the stage for expanded growth in 2018

## 2017 focused on path to profitability and shift in strategy

- Sharpened focus on non-GM wheat nutrition traits and commercial launch strategy
- Continued to advance commercialization of agricultural productivity traits through regulatory approvals and field trials
- Licensed CRISPR-Cas9 gene editing technology to accelerate development of non-GM trait portfolio
- Reduced operating expenses by 16% and reduced operating loss by 23%

## In 2018, exciting results of strategic shift

- Two major milestones in RS wheat: high amylose and high fiber
- Launched a consumer ingredient brand to capture more downstream value
- Bringing in expertise to guide us through strategic evolution
- Closed \$10M in private equity financing to execute growth strategy

# Introducing GoodWheat™ ingredient brand!

- GoodWheat brand includes:
  - High fiber Resistant Starch wheat
  - Extended Shelf Life wheat
  - Reduced Gluten wheat
  - Future wheat innovations
- Delivers distinct market differentiation for consumer food companies to provide specialty products to discerning consumers
- Working with Ian Miller, brand ingredient strategist
  - Architect of NutraSweet brand along with hundreds of other well-known consumer brands





# Path to commercialization of RS wheat

## Achieved key technical milestones

- 94% amylose, compared to 25%-30% in traditional wheat
- High fiber levels that meet FDA requirements for “high in fiber” and “good source of fiber” designations

## Breeding into commercial germplasm

- Planting increased acres of wheat to supply customers for testing

## Building partnerships across wheat value chain

- Seed production
- Logistics
- Processors
- Food companies

## New Chief Commercial Officer – Sarah Reiter

- 20 years of business strategy and marketing experience in agriculture and food industries



# Ag Productivity traits continue to advance through field trials and regulatory progress

## **HB4 Drought Tolerant soybeans**

- Second year of commercial germplasm trials are underway
- Drought conditions in Argentina are ideal for testing trait
- FDA approval in 2017, regulatory studies for submission for Europe approvals in progress



*Control*

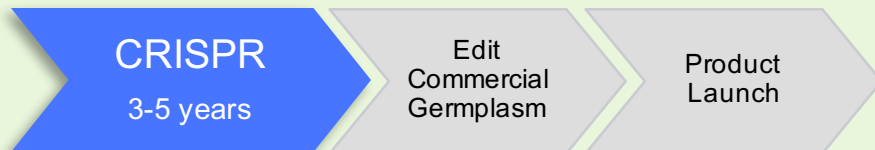


*HB4 Soybeans*

## **Nitrogen Use Efficiency and Salinity Tolerance traits**

- NUE and ST rice and cotton trials currently underway in India
- Restructuring license agreements with Mahyco

# World-class research and development platform with capabilities across multiple technologies

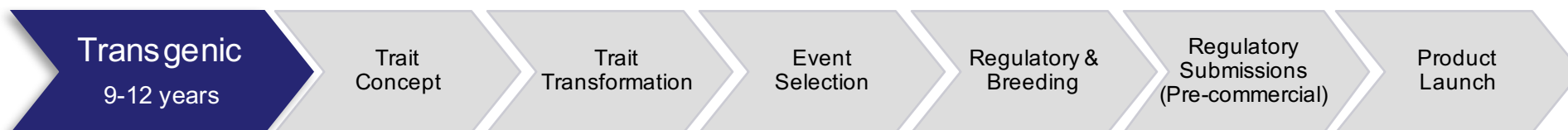


- Reduced gluten wheat
- Work advancing in wheat commercial germplasm

*Majority of forward investment will utilize non-GM technology platforms*



- High fiber, resistant starch wheat
- Extended shelf life wheat
- Reduced gluten wheat



- Drought tolerant soybeans

# Experienced and highly committed senior R&D team



**Claire  
McCallum**  
Director  
R&D

- Joined in 2005
- 16-year experience in agricultural biotech
- Co-founder of TILLIGEN, previous experience includes Anawah and the Fred Hutchinson Cancer Research Center
- Inventor of TILLING
- Specializes in genetics, molecular biology, agronomic yield
- Registered 1 patent
- PhD in molecular and cellular biology at University of Washington



**Zhongjin  
Lu**  
VP Product  
Development

- Joined in 2002
- 30-year experience in agricultural biotech
- Previous experience includes Seaphire International, Monsanto, University of Arizona
- Specializes in plant breeding, field trial design and analysis
- PhD in plant physiology from Technion Institute of Technology (Israel)



**Ann  
Slade**  
Senior  
Scientist

- Joined in 2005
- 30-year experience in agricultural biotech
- Previous experience includes Anawah, Targeted Growth, Calgene
- Specializes in TILLING, wheat quality
- Registered 8 patents
- PhD in molecular and cellular biology/ zoology at University of Washington



**Jos van  
Boxtel**  
Principal  
Scientist

- Joined in 2003
- 27-year experience in agricultural biotech
- Previous experience includes CIRAD, John Innes Center, UC Davis
- Specializes in plant transformation, tissue culture, breeding
- PhD in agricultural sciences at Wageningen UR, Netherlands and CIRAD, Montpellier, France



**Daniel  
Facciotti**  
Oils  
Consultant

- Retired from Arcadia in 2017, consulting on nutritional oils
- 36-year experience in agricultural biotech
- Previous experience includes Anawah, Calgene, Monsanto
- Specializes in nutritional PUFA oils, input/output traits in soybean mutants, generation of mutant TILLING libraries
- Registered >10 patents
- PhD in plant physiology at University of Lausanne, Switzerland

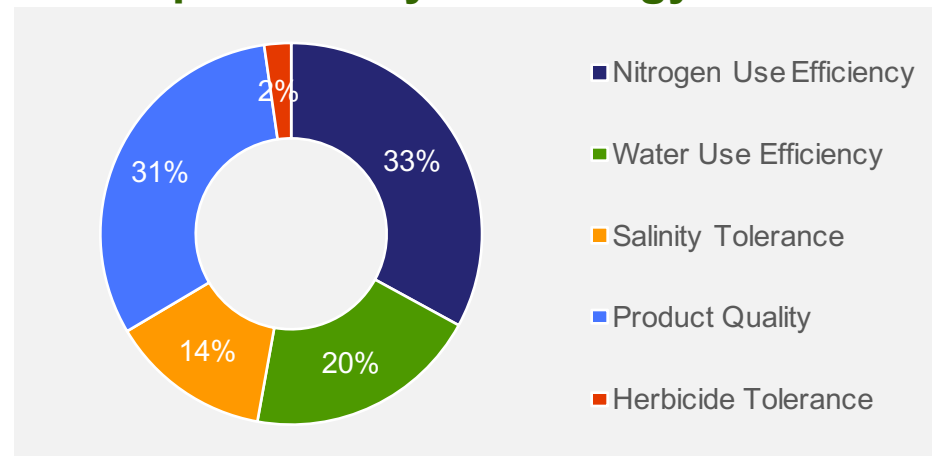
**Core Competence** - Leveraging 100 years of combined plant transformation experience across best in class technology platforms to best meet individual application needs

- ✓ *Non-GM gene editing* – Utilizing CRISPR-Cas9 gene editing
- ✓ *TILLING transformation* – Unparalleled efficiency in mutation productivity
- ✓ *Genetic transformation* - Demonstrated transformation capabilities across crops

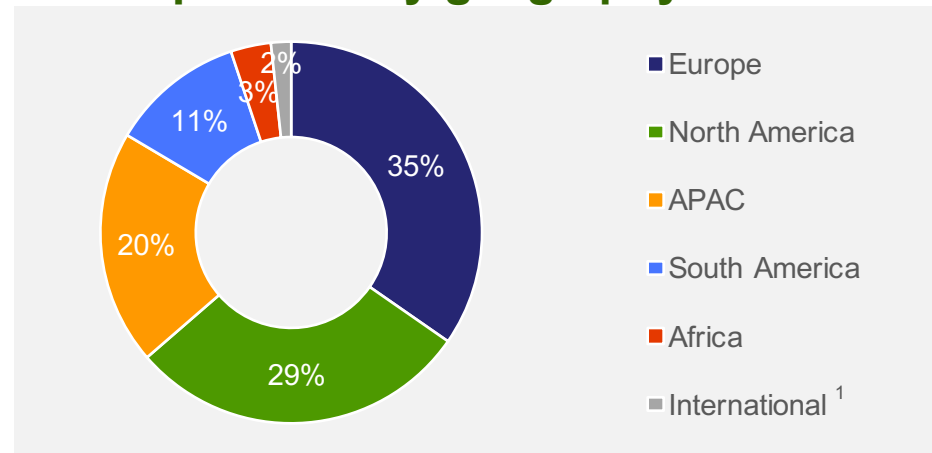
# Strong patent portfolio addressing a variety of trait technologies

- Owns or exclusively controls 176 patents worldwide in 32 families
- Issued 24 patents and filed 14 new patent applications since January 2015
- Owns patents in most key production markets for specific crops
- Unique ability to achieve full control over mutation enables the company to obtain patents on non-GM traits

## Patent portfolio by technology



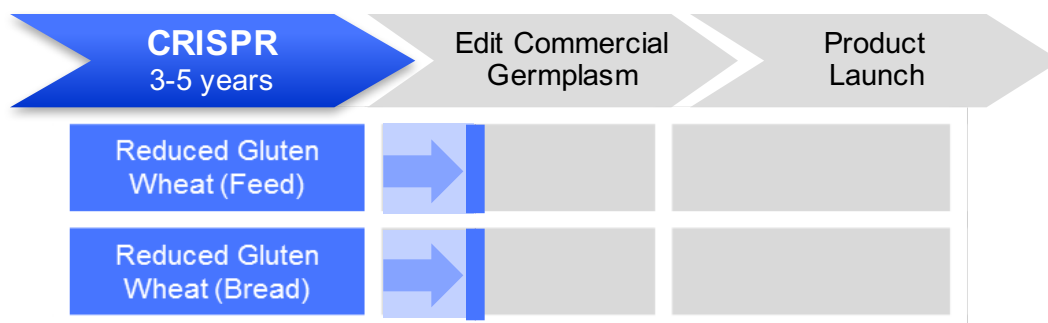
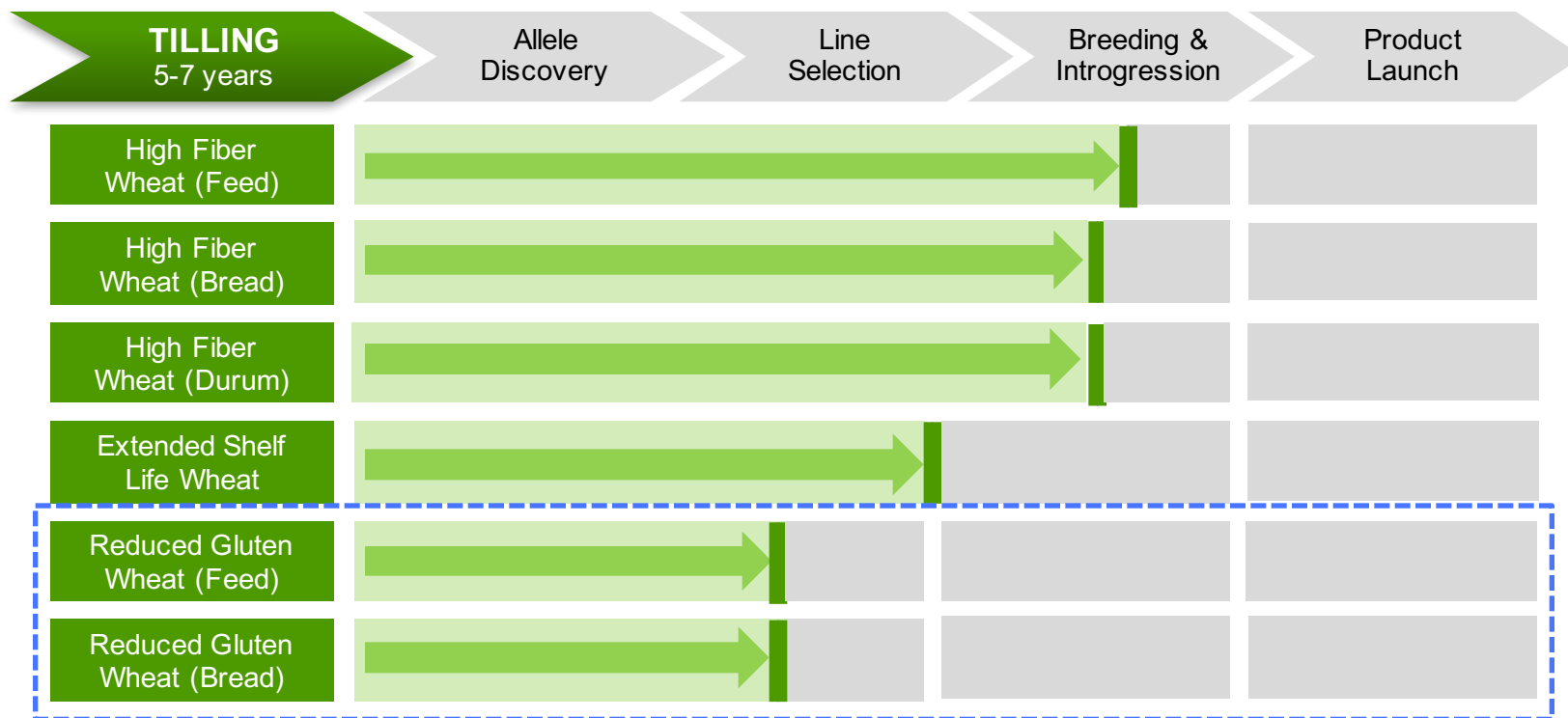
## Patent portfolio by geography



Note 1: International applications filed under the Patent Cooperation Treaty



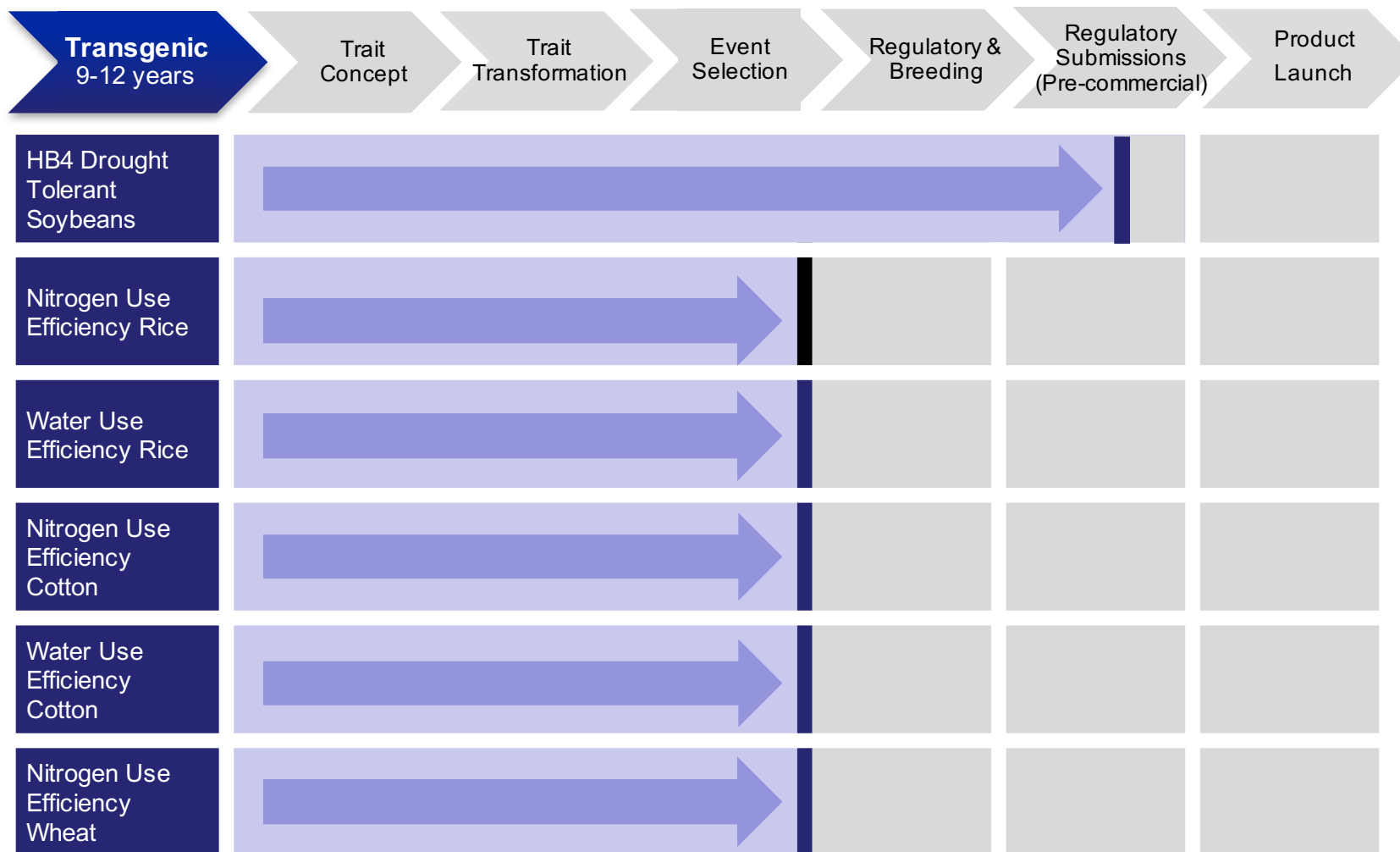
# Health & Nutrition products will be accelerated using TILLING and CRISPR-Cas9



CRISPR-Cas9 will accelerate new and existing product development

Note: D=Discovery; 1=Proof of Concept; 2=Greenhouse/Early Field Trials; 3=Additional Field Trials/Product Development; 4=Regulatory / Pre-Commercial; C=Commercialized

# Ag productivity traits advancing with field trials approved and planted in India and Argentina



Note: D=Discovery; 1=Proof of Concept; 2=Greenhouse/Early Field Trials; 3=Additional Field Trials/Product Development; 4=Regulatory / Pre-Commercial; C=Commercialized  
 Other Traits:: Salinity Tolerance (Wheat: Phase 2; Rice: Phase 3; Cotton: Phase 2), Yield (Wheat: Phase 2; Corn: Phase 3; Soybean: Phase 2);

# Key financial results



	Full Year Comparison			
	2017	2016	Favorable/(Unfavorable)	
			\$	%
Total revenues	4,026	3,188	838	26%
Cost of product revenues	283	895	612	68%
R&D expense	7,407	8,663	1,256	15%
SG&A expense	10,651	12,250	1,599	13%
Loss from operations	(14,315)	(18,620)	4,305	23%
Interest expense, tax provision and other income and loss, net	(1,392)*	(1,004)	(388)	(39%)
Net loss and net loss attributable to common stockholders	(15,707)	(19,624)	3,917	20%
Net loss per share attributable to common stockholders	(7.28)	(8.85)	1.57	N/A
Basic and diluted shares outstanding (weighted average)	2,156,201	2,218,341		

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

*\* Includes \$900K nonrecurring charge for extinguishment of debt during the quarter*



# Arcadia's growth strategy



*Commercialize leading platform of non-GM health & nutrition ingredients marketed directly to consumer packaged goods companies*



*Build trusted and sought-after consumer brands to maximize value capture at the consumer level*



*Accelerate development of non-GM trait portfolio through the application of gene editing technology*



*Advance commercialization of GM traits in regions where regulatory processes are predictable*

# Key milestones for 2018

## **Wheat**

- Scale production of RS wheat
- Secure CPG and processor alliances for wheat ingredients
- Test market RS wheat in bread, pasta and/ or feed
- Begin internal testing of RG wheat
- Execute branding strategy

## **Soy**

- Submit HB4 EU regulatory dossier
- Announce efficacy data results

## **Strategy & Organization**

- Build out commercialization expertise and refine go-to-market strategies
- Continue cost containment