

# Arcadia Biosciences

NobleConXV – January 2019

# 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 is improving the nutrition and quality of food ingredients while improving crop productivity

**Using advanced plant breeding and gene editing technologies**

TILLING  
CRISPR-Cas9  
Transgenics



**Accelerating innovation through partnerships with industry leaders**



**Developing consumer-desired specialty ingredients**



Founded in 2002   ■   Public company in 2015 (Nasdaq: RKDA)   ■   Headquarters in Davis, CA

# Consumer demands and challenges in the food supply chain create opportunities for innovation



## Food production systems are stressed

- Climate and pests mount challenges
- One third of all crops grown for consumption become food waste
- Commodity prices remain low
- Government regulators, NGOs and consumers demand reduced crop inputs



## Consumers expect more from their food

- Clean labels
- Authentic, natural foods
- Functional foods with health benefits
- New protein alternatives
- Reduced environmental impact

# Arcadia Biosciences innovations address the challenges facing our food systems



## IMPROVE

- Shelf life
- Dietary fiber
- Nutrient profile
- Amino acid
- Plant proteins
- Flavor and color



## REDUCE

- Allergenicity
- Calories
- Added fibers and sugars
- Environmental impact



## MANAGE

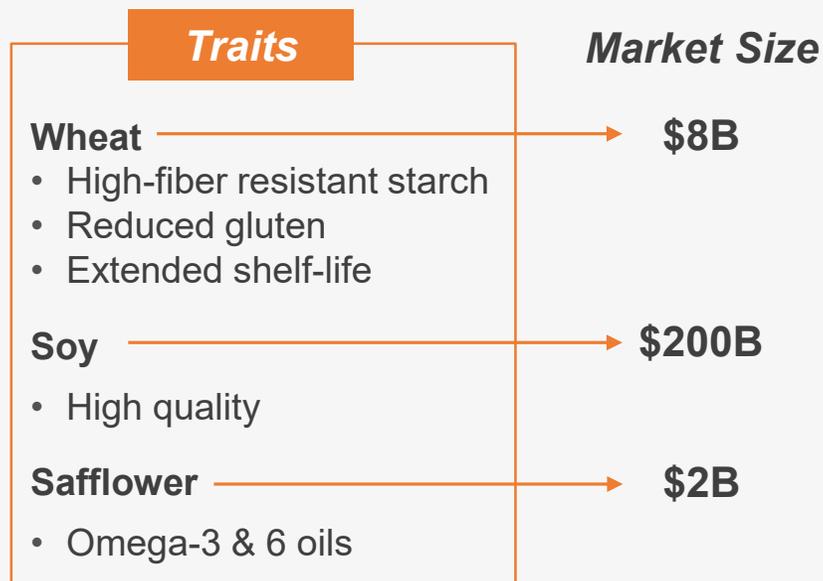
- Increased yield
- Reduced pesticide
- Herbicide tolerance
- Reduced nitrogen
- Manage drought and salt stress

Using our non-GM breeding platform and proprietary libraries or GM techniques

# Arcadia's product portfolio addresses a large global market opportunity

## Health & Nutrition

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



## Crop Productivity

Addressing crop productivity through intrinsic yield and abiotic stress reduction



Building on over 15 years of industry expertise

# Collaborating with partners for significant advantage

## Health & Nutrition



### Active Targets

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

## Crop Productivity



Além da produtividade



Strategic alliances with global players to develop and commercialize traits

# Health & nutrition business model extracts value throughout the food supply chain



**Consumers**

- Demand quality food ingredients (high fiber/ protein, low gluten, etc.)
- Pay premium pricing



**Food Companies**

- Consumer product testing with 4 mid/ large food companies
- Targeting 10 more companies in the next 12 months



**Processors**

- Testing with multiple millers
- Testing with one of EU's largest millers



**Farmers/ Seed Co's**

- Breeding into commercial public varieties
- Testing production in multiple locations
- Identified seed producers
- Expanded access to grower base via FBN



Building partnerships across value chain

**Advanced Technologies**

- CRISPR Cas-9
- TILLING
- GM

**Rapid Product Development**

- Growth facilities
- Field trials
- Regulatory

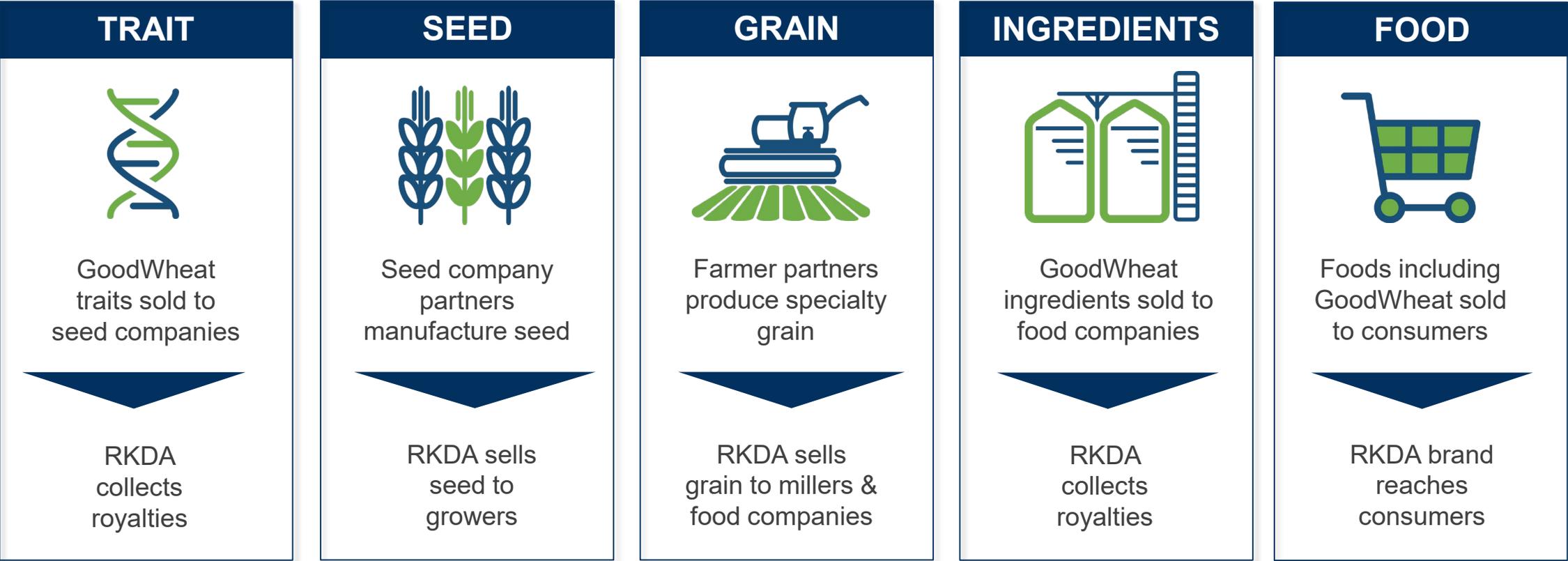


# GoodWheat™ redesigns wheat as a functional food, with new value throughout the chain



- Adds value to the wheat supply chain by enabling a wider range of choices to meet consumer demands
- Allows consumers to enjoy unique health benefits in their favorite foods
- Delivers distinct market differentiation for consumer food companies to provide specialty products to discerning consumers

# GoodWheat business model presents multiple opportunities for revenue capture



# Arcadia's competitive advantages allow for accelerated market entry



## In-house trait discovery

- Unique patent-protected, portfolio of traits for diverse crops
- Leading TILLING researchers, unmatched in their years of experience
- Proprietary TILLING libraries for key broad-acre crops, fruit & vegetables
- CRISPR-Cas9 gene editing capabilities



## Accelerated breeding processes and germplasm

- Up to four generations per year through accelerated breeding
- Proprietary heirloom wheat, durum and oilseed varieties
- Germplasm partnerships with leading public programs in North America



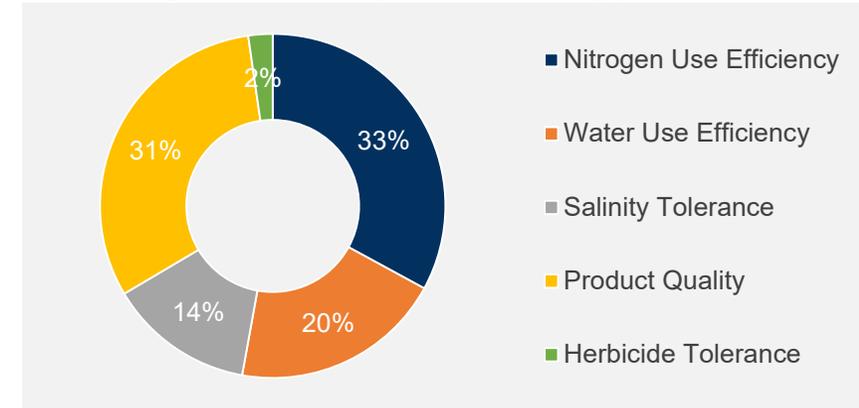
## Field trial, regulatory and production capabilities

- Home based in USA, global capabilities
- Diverse facilities including: Lab, Greenhouse, Field Research Farm
- In-house oilseed production optimized for best cost position
- Secured partners for seed bulking and grain/oil production

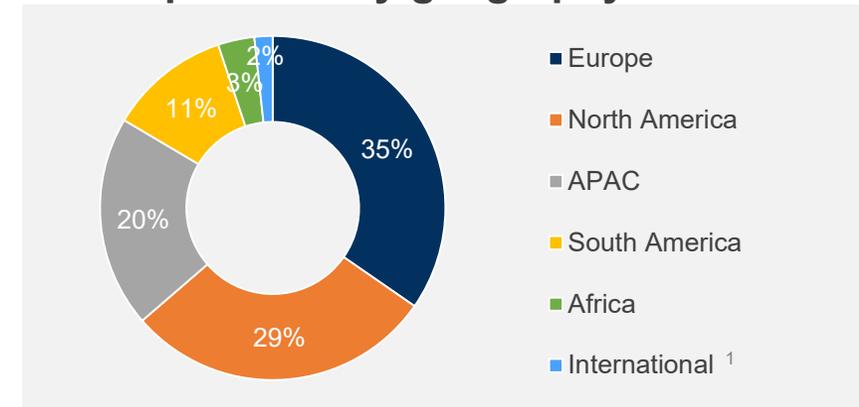
# Strong patent portfolio addressing a variety of trait technologies

- Owns or exclusively controls 195 patents worldwide in 30 families
- Issued 37 patents and filed 50 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

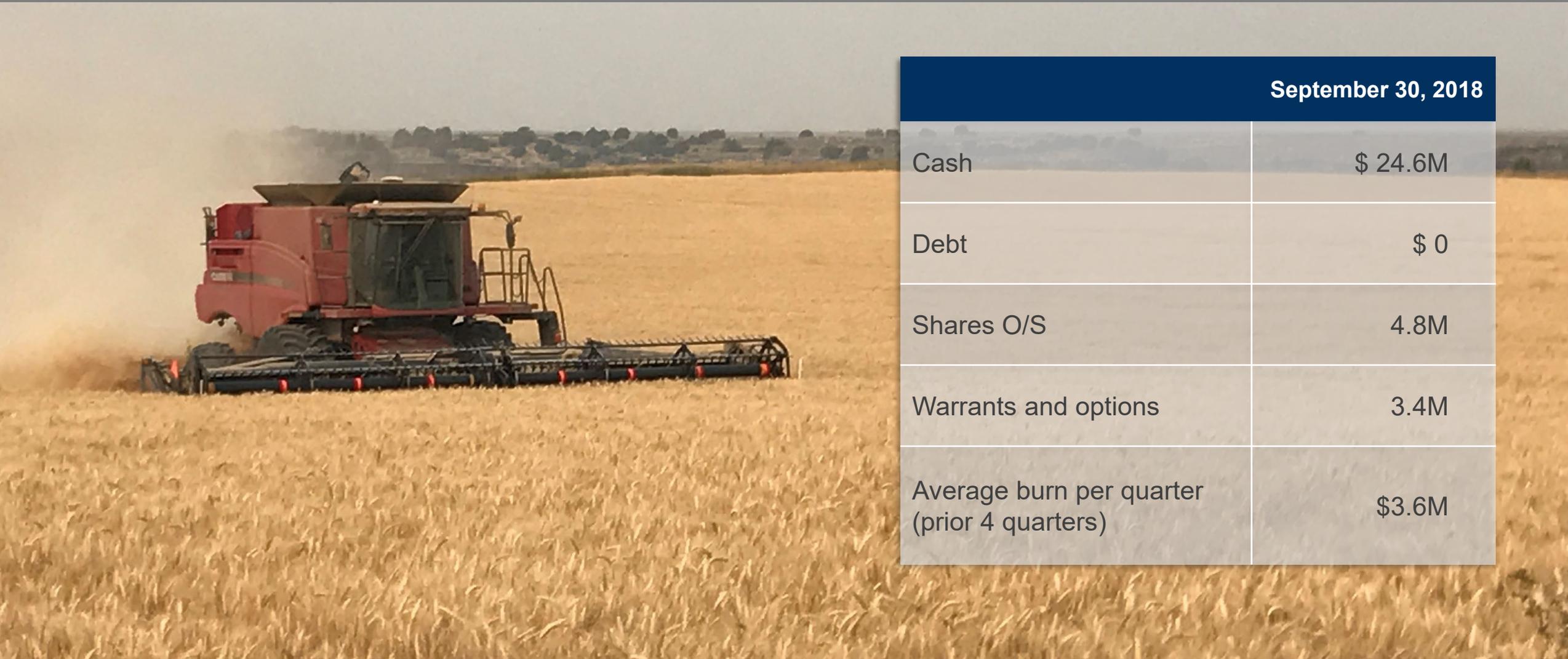


## Patent portfolio by geography



Note 1: International applications filed under the Patent Cooperation Treaty

# Financial highlights: Solid cash reserves and no debt



	September 30, 2018
Cash	\$ 24.6M
Debt	\$ 0
Shares O/S	4.8M
Warrants and options	3.4M
Average burn per quarter (prior 4 quarters)	\$3.6M

# In 2018, we've made significant advances towards commercialization of Resistant Starch GoodWheat

## Achieved key technical milestones

- 94% amylose (vs. 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

- Arrangements with public breeding institutions to introduce trait into commercial germplasm
- Produced increased acres of wheat across several states in US to supply customers for testing

## Building partnerships across wheat value chain

- Grain millers
- Food companies
- Seed production
- Logistics – identity preservation



Development phase:

1

2

3

C

# HB4 drought tolerant soybeans are advancing through field trials and regulatory progress



- Developed through Verdeca joint venture with Bioceres 
- Two years of trials in commercial germplasm completed
- Data shows increased yield in low yielding and drought prone areas
- Approved in Argentina, submitted for import approval in China
- FDA approval in 2017, submitted for USDA approval
- Regulatory studies in progress for submission in Europe

Development phase: **1** **2** **3** **4** **5** C

# Advancing non-GM Extended Shelf Life tomatoes with partner in India



- Shriram Bioseed is a private hybrid seed development company in India
- Technical milestone achieved in Q3
- Results showed significant and consistent improvements in field yield and fruit quality, such as firmness, shelf life and color development
- New hybrids are in pre-commercial, wide area testing
- Targeting additional milestones in 2019
- Bioseed expects to commercialize in Q4 2019

Development phase:

1

2

3

C

# We are focused on delivering key milestones in 2019

## **GoodWheat**

- Scale-up production of GoodWheat
- Secure CPG and processor alliances for wheat ingredients
- Test market GoodWheat in bread, pasta and/ or feed
- Execute branding strategy

## **HB4 Drought Tolerant Soybeans**

- Prepare for launch in Argentina in 4Q 2019, pending approval in China
- Submit EU regulatory dossier

## **Strategy & Organization**

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



# Arcadia's progress positions the launch of 3 products in 3 crops in the next 12-18 months



- Non-GM GoodWheat in the Americas
- HB4 Drought Tolerant Soybeans in Argentina
- Non-GM Extended Shelf Life Tomatoes in India (launched by Shriram Bioseed)

Thank you!