UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

DIVISION OF
CORPORATION FINANCE

December 5, 2014

Via E-mail
Eric J. Rey
President and Chief Executive Officer
Arcadia Biosciences, Inc.
202 Cousteau Place, Suite 200
Davis, CA 95618

Re: Arcadia Biosciences, Inc.
Draft Registration Statement on Form S-1
Submitted November 12, 2014
CIK No. 0001469443

We have reviewed your draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

General

1. Your Exhibit Index indicates that you intend to seek confidential treatment with respect to some of your exhibits. Please confirm your understanding that all requests for confidential treatment must be resolved prior to a request for acceleration.

2. To the extent that you have relied on any reports or studies that you commissioned from third party sources to support your disclosure, please provide the consents of these third parties with your next amendment or tell us why you believe that you are not required to do so.

3. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications.

Prospectus Summary, page 1

Overview, page 1

4. You disclose here and in several other places that you are a "leading independent" agricultural biotechnology trait development company. Please provide a basis for your statement that you are "leading." Please also clarify what is meant by "independent." Further, we note the discussion in the Competition section on page 93 of "small," "medium" and "large" companies. Please clarify here the size that best characterizes your company.

5. We note your disclosure that you have 13 traits in "advanced stages of development or on the market," as well as your discussion of products or traits in the "advanced development" stages. Please clarify throughout your document what you mean by "advanced stages of development" and discuss the requirements and timelines involved in moving a trait or product from the "advanced stage" to the commercial phase. In this regard, we note the description of "Advanced Development" on page 66.

6. It appears that you are in the business of researching, developing and commercializing seed traits and products. With a view toward disclosure, please explain why your relevant target market is a portion of the "$2.6 trillion annual farm revenue from agricultural crops" rather than the $39.4 billion seed market.

7. Here and where it appears elsewhere in the document, please expand your disclosure to briefly explain what you mean when you say that you "reduce risk and avoid most of the costs associated with basic research by acquiring trait technologies that have already achieved proof of concept through basic research carried out elsewhere." Please explain here what it means to achieve proof of concept. In this regard, we note the description of Phase 1, Proof of Concept, in the chart on page 66.

Our Strengths, page 4

8. Please explain how your pipeline of agricultural productivity "provides access" to multiple large, potentially high growth markets.

9. In the third bullet point of this section, you discuss technologies that have achieved proof of concept in the first sentence, while the caption discusses advanced development stage products. Please clarify the stages that most of your products have reached, and provide the reasons that you believe this progress substantially reduces the risk and time to market referenced in the caption.

10. In the fourth bullet point of this section, with a view towards disclosure, please tell us how your regulatory expertise would enable expedited regulatory review.

Risk Factors, page 11

Changes in laws and regulations…and disrupt our business, page 20

11. Please revise this risk factor to include the information that a number of states have legislation pending that would limit the use or require the labeling of GM crops in those states, and briefly state the risk presented by such legislation to your business, or tell us why you do not believe the legislation is material.

Components of our Statements of Operations Data, page 46

Revenues, page 46

12. We note that the percentage of revenues attributable to contract research and government grant revenue has risen for each reportable period since December 31, 2012, reaching a high of 79% for the six months ended June 30, 2014. Please tell us whether this is a material trend that warrants enhanced disclosure in MD&A.

Liquidity and Capital Resources, page 52

13. Please revise to disclose in greater detail the demands on liquidity that will accompany the implementation of your business plan. Discuss expenditures such as field testing, seeking regulatory approval for, and other expenses associated with developing and marketing your products, the timing of such demands, and the amount of funding required, short-term and long-term, the expected sources of funding and the impact on the company if the funding cannot be obtained. In addition, provide specific information about the timelines accompanying each proposed step in your business plan so that an investor can get a clearer picture of how and when you expect to reach revenue generation and the associated costs.

Industry Overview, page 66

Innovation and Commercialization Process in Biotech Seed Traits, page 66

14. Refer to the table on page 66, and to the disclosure about Monsanto on page 70. Please explain why the outcomes that Monsanto achieved would be relevant for GM trait research performed by other companies, or explain what would account for any differences in outcome. Clarify the reasons that the Monsanto 2011 Investor Toolkit is germane to the outcomes that Arcadia expects.

Business, page 68

Agricultural Productivity Traits, page 74

Agronomic Trait Stacks, page 79

15. Expand this section briefly to clarify why a molecular trait stack that is applicable to one crop would necessarily be feasible in another crop.

Financial Statements, page F-1

16. Please update your financial statements pursuant to Rule 8-08 of Regulation S-X.

Exhibits

17. We note your disclosure on pages 49 - 50 that USAID accounted for 18% and 41% of your total revenues for the six months ended June 30, 2013 and 2014, respectively, and that NIH accounted for 3% and 14% of your total revenues for the six months ended June 30, 2013 and 2014, respectively. Please provide an analysis as to whether you are required to file your agreements with these entities. Please also provide an analysis as to whether you are required to file any agreements with respect to your two joint ventures, Limagrain Cereal Seeds LLC and Verdeca LLC.

You may contact Stephen Kim at (202) 551-3291 or Doug Jones at (202) 551-3309 if you have questions regarding comments on the financial statements and related matters. Please contact Julie Griffith at (202) 551-3267 or me at (202) 551-3611 with any other questions.

Sincerely,

/s/ A.N. Parker

Anne Nguyen Parker
Assistant Director

Cc: Karen Dempsey
Orrick, Herrington & Sutcliffe LLP