



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

DIVISION OF  
CORPORATION FINANCE

August 1, 2013

Via E-mail

Randal J. Kirk  
President and Chief Executive Officer  
Intrexon Corporation  
2875 South Ocean Boulevard, Suite 215  
Palm Beach, Florida 33480

**Re: Intrexon Corporation  
Amendment No. 1 to Registration Statement on Form S-1  
Filed July 29, 2013  
File No. 333-189853**

Dear Mr. Kirk:

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

Please respond to this letter by providing the requested information. If you do not believe our comment applies to your facts and circumstances, please tell us why in your response.

After reviewing the information you provide in response to this comment, we may have additional comments.

Summary consolidated financial data, page 8

1. Please explain why the amounts for "Pro forma shares used in the computation of pro forma net loss per share, basis and diluted" differ from the corresponding amounts on pages F-5 and F-64. This comment also applies to your selected consolidated financial data pro forma share amounts on page 54.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comment, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

Randal J. Kirk  
Intrexon Corporation  
August 1, 2013  
Page 2

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Franklin Wyman at (202) 551-3660 or Donald Abbott at (202) 551-3608 if you have questions regarding comments on the financial statements and related matters. Please contact Johnny Gharib at (202) 551-3170, John Krug at (202) 551-3862 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler  
Assistant Director

Via E-mail  
David I. Meyers, Esq.  
Troutman Sanders LLP  
1001 Haxall Point  
Richmond, Virginia 23219