

Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Development
Agricultural Development & Diversification Program (ADD)

Grant Project Final Report

Contract Number: 17025

Grant Project Title: Commercial Scale Pen Studies to Improve the Value of Wisconsin Egg Producers

Project Beginning Date: July 1, 2002 Project End Date: August 1, 2003

Amount of Funding Awarded: \$24,000

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August, LLC
WDATCP Contract No. 17025
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August 13, 2003

Background

August, LLC (August or Company), a Wisconsin limited liability company, has exclusive rights from the Wisconsin Alumni Research Foundation (WARF) to commercialize patented egg antibody technology. The purpose of the project is to increase Wisconsin egg production by proving the efficacy of the egg antibody product and generating the statistics necessary for market entry, which will substantially increase Wisconsin egg production.

The project took a major step forward in significantly increasing Wisconsin egg production by conducting large-scale field trial pen studies for product efficacy on the premises of a leading national broiler producer. These results provided information necessary for eventual commercialization.

Since the creation of August, a low-cost source of antibody-creating phospholipase A₂ (PLA₂) has been found and new aPLA₂ antibodies have been created. This grant provided the resources for a necessary feeding trial with aPLA₂ antibodies. The field trial work was an important step in the product development stage, making broiler producers aware of the potential of aPLA₂ and demonstrating the efficacy.

The project was a part of the product commercialization process that will eventually address major problems and needs affecting U.S. agriculture. The first need is for improved feed efficiency and enhanced growth. The second need is to provide an alternative to the use of growth promoting antibiotics.

Objective

The ultimate objective of the trial funded by this grant was to create significant additional demand for Wisconsin egg production by proving the efficacy of the aPLA₂ antibody product and entering the broiler market.

The expected benefits of the project are to expand the Wisconsin egg industry over time and to improve feed efficiency and enhance growth of animals in Wisconsin and elsewhere by moving the aPLA₂ antibody product and its related technology closer to commercialization and providing a complement and/or alternative to growth antibiotics.

How the Project Met the Objective

The project took place on the premises of a leading national broiler company. That company tested the efficacy of the aPLA₂ antibody product as measured by the impact upon feed efficiency and body weight. Eventual successful tests of this kind will lead to market entry, meeting the Objective and realizing the benefits of expanding the Wisconsin egg industry over time, improving feed efficiency and growth enhancement of

Wisconsin animals and reducing or eliminating the need for growth antibiotics in animal feed.

Specific Objectives

The project objective was to measure the aPLA₂ antibody's impact upon feed efficiency and body weight in a large-scale trial. The desired result was that aPLA₂ would improve feed efficiency and body weight by 5%.

Intended Impact on Wisconsin Agricultural Industry

The direct impact of successful trials will be commercialization, which is expected to increase Wisconsin annual egg production and revenue. Further, the aPLA₂ antibody product is expected to ultimately improve feed efficiency and growth by 5% for Wisconsin broilers, ducks, turkeys and swine. In addition, the aPLA₂ antibody product may serve as a complement and/or alternative to the use in Wisconsin of antibiotics in animal feed and as a growth promoter which will allow the Wisconsin agricultural industry to be with or ahead of the nation should there be a health requirement to minimize or eliminate the use of growth promoting antibiotics.

Specific Expected Outcomes

The pen study project was expected to provide product efficacy verification leading to near-term market entry and an immediate increase in egg production revenues in Wisconsin.

The economic benefits were expected to be increased Wisconsin egg industry production and revenue, improved feed efficiency and growth enhancement for the Wisconsin broiler, turkey, duck and swine industry, and the Wisconsin agricultural industry being advantageously positioned to withstand the reduction or elimination of the use of growth antibiotics.

Detailed Description of How the Proposed Project Was Carried Out

The project consisted of large-scale field trial pen studies occurring on the premises of a leading national broiler company.

Preparation for the pen studies included acquisition of laying hens, injection with PLA₂, harvesting aPLA₂ antibody eggs for 2 months, spray-drying the eggs, encapsulation, packaging and irradiation. The aPLA₂ was encapsulated to provide heat stabilization to protect activity level through the trial's pelleting process. August shipped the encapsulated aPLA₂ antibody test product to the pen studies site where it was pelleted through the site's feed mill.

The pen studies lasted 49 days and consisted of four treatments - a control treatment and three aPLA₂ treatments. The three treatments were as follows: using aPLA₂ for the first 28 days, using aPLA₂ for days 29 through 49, and using aPLA₂ for the entire study period. Each treatment used 9 pens of 100 broilers and body weight and feed efficiency were measured.

Study Results

The study indicated no statistically significant aPLA2 benefit for the full study period. However, the 28-day measurement indicated that aPLA2 provided a 2.5% improvement in body weight as compared to the control.

Timeline

The timeline runs from July, 2002 through August, 2003 (dates are approximates).

Trial design discussions with leading national broiler company	7/02	3/03
Developing encapsulation technology	10/02	2/03
Creating inventory of encapsulated test product	2/03	4/03
Experiments	4/03	6/03
Analysis	6/03	8/03

Accomplishments

A number of significant accomplishments were realized during the study that will serve to move the commercialization process forward. They are:

1. August has furthered the relationship with the company providing the trial; this company is interested in conducting a follow-on trial of aPLA2 with August and is a likely candidate for market entry.
2. Conducting the trial has provided August with experience in processing its product so that it was usable in the trial. This provided information that will be of use in commercialization.
3. Conducting the trial required the development of encapsulation technology which will be useful for commercialization.
4. The trial results indicated that aPLA2 beneficially impacts body weight for a part of the life of the bird. This knowledge may lead to selective feeding of aPLA2 during that stage of the bird's life.
5. The trial provided important information that will be useful when conducting later trials that are necessary for commercialization.

Next Steps

August is continuing with the development of the technology. In that regard, a follow-on trial started in July and additional trials are scheduled to start in the months of August and September.