

# Poultry Farming

## Business Scenario

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Bag`fk & Co. incurred qualified research expenses under IRC Section 41 relating to the design and development of various cultivation, support, processing and separation equipment during the 201+-20S" fiscal years. Its biggest R&D project was the [ bāhW Wēfa Bag`fk K[W9S[ .

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In order to qualify for the Research and Development Tax Credit, Bag`fk & Co. needed to determine the eligibility of its proposed R&D activities. The qualified research must meet four main criteria, known as the Four-Part Test. Bag`fk & Co.'s qualified R&D activities included the following.

## Eligible R&D Activities:

Design and development of a series of prototypes to achieve the technical objectives (design of the aspirator system).

Trials and analysis of data to achieve results that can be reproduced to a satisfactory standard (development and testing of the aspirator system).

Nut & Co.'s hypothesis for this activity stated that it was possible to develop a revolutionary piece of shelling equipment that could remove the meat from the pecan shell by using a suction method instead of the normal blowing method.

The main objective for this activity stated that with improved knowledge of the intrinsic factors related to the extraction of pecans from their shells, it was possible to identify mechanisms for improving the current shelling process.

The experiments that Nut & Co. conducted in the design phase predominantly entailed conceptual engineering drawings, mathematical calculations and testing of different materials. These experiments could only be proven effective or ineffective in the prototype development and testing phase. Following the experiments in that phase, during which the product was built and tested in various applications, the design was modified and retested until the desired outcome was achieved.

Details of this experiment included testing of different materials ultimately concluding that stainless steel wasp, off-fall tanks and galvanized piping needed to be used for the system to ensure efficiency, accuracy and safety.



Background research to evaluate current knowledge gaps and determine feasibility (background research of the development of the aspirator system).

Prior to 2013, the shelling equipment existing on the market was cumbersome and expensive. Thus, besides the lack of comparable solutions available, the outcomes of activities in this research could not have been known or determined in advance due to a number of specific technical challenges.

Nut & Co.'s eligible R&D activities during this phase of experimentation included:

- Literature search and review, including maintaining up-to-date knowledge on relevant certification and standards.
- Consultation with industry professionals and potential customers to determine the level of interest and commercial feasibility of the product.
- Preliminary equipment and resources review with respect to capacity, performance and suitability for the project.
- Consultation with key component/part/assembly suppliers to determine the factors they considered important in the design and to gain an understanding of how the design needed to be structured accordingly.

The background research conducted by Nut & Co. was directly related to the main objective of designing the aspirator system, therefore qualifying as R&D.

Ongoing analysis of customer or user feedback to improve the prototype design (feedback R&D of the aspirator system).

Nut & Co.'s eligible R&D activities for this phase of its project included:

- Ongoing analysis and testing to improve the efficiency and safety of the product.
- Ongoing development and modification to interpret the experimental results and draw conclusions that served as starting points for the development of new hypotheses.
- Commercial analysis and functionality review.

These activities were necessary to evaluate the performance capabilities of the new design in the field and to improve any flaws in the design, therefore qualifying as R&D.

## Commentary

### Qualified research defined

Qualified research consists of research for the intent of developing new or improved business components. A business component is defined as any product, process, technique, invention, formula, or computer software that the taxpayer intends to hold for sale, lease, license, or actual use in the taxpayer's trade or business.

## THE FOUR-PART TEST

Activities that are eligible for the R&D Credit are described in the "Four-Part Test" which must be met for the activity to qualify as R&D.

1. **Permitted Purpose:** The purpose of the activity or project must be to create new (or improve existing) functionality, performance, reliability, or quality of a business component.
2. **Elimination of Uncertainty:** The taxpayer must intend to discover information that would eliminate uncertainty concerning the development or improvement of the business component. Uncertainty exists if the information available to the taxpayer does not establish the capability of development or improvement, method of development or improvement, or the appropriateness of the business component's design.
3. **Process of Experimentation:** The taxpayer must undergo a systematic process designed to evaluate one or more alternatives to achieve a result where the capability or the method of achieving that result, or the appropriate design of that result, is uncertain at the beginning of the taxpayer's research activities.
4. **Technological in Nature:** The process of experimentation used to discover information must fundamentally rely on principles of hard science such as physical or biological sciences, chemistry, engineering or computer science.

## What records and specific documentation did Nut&Co. keep?

Similar to any tax credit or deduction, Nut & Co. had to save business records that outlined what it did in its R&D activities, including experimental activities and documents to prove that the work took place in a systematic manner. Nut & Co. saved the following documentation:

- Project records/ lab notes
- Innovation Log
- Conceptual sketches
- Design drawings
- Background research
- Records of changes
- Testing protocols
- Results of records of analysis from testing/trial runs
- Records of resource allocation/usage logs
- Staff time sheets
- Invoices
- Receipts

By having these records on file, Nut & Co. confirmed that it was "compliance ready" — meaning if it was audited by the IRS, it could present documentation to show the progression of its R&D work, ultimately proving its R&D eligibility.

## R&D Tax Credit Summary

Nut & Co. shows continuous improvements through research and development in the following areas:

- Improvements to production time and efficiency
- Improvements in reliability of products
- Decrease in labor and production costs
- Production innovation sourced from:
  - Internal ideas
  - Existing customers who have business needs which require new solutions

Nut & Co. eliminated uncertainty by:

- Testing across all supported releases to determine reliability and user-friendliness
- Experimentation with possible fixes until an adequate solution was determined

Therefore, Nut & Co. satisfies the four-part test and qualifies for both the Federal and Texas research and development tax credit. By filing both the federal and state research and development tax credits, Nut & Co. was able to obtain a significant amount of credit for tax years 2013-2016.

| Total QREs | Federal Gross Credit | State Gross Credit | Total Savings |
|------------|----------------------|--------------------|---------------|
| \$852,865  | \$51,172             | \$30,530           | \$81,702      |