

**Reedsburg Egg Company**

**Proposed Egg Processing Operation**

**Feasibility Study Report**

**Prepared for:**

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**Submitted to:**

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## ***I Introduction***

### Project Background

In August 2002, Reedsburg Egg Company (REC) contracted with Cooperative Development Services (CDS) to analyze the feasibility of expanding from a shell egg washing and grading operation to an egg breaking and processing operation. The Wisconsin Department of Agriculture, Trade, and Consumer Protection's Agricultural Diversification and Development (ADD) program funded the feasibility study.

Reedsburg Egg Company, a family owned business which has been in operation since 1927, cleans, sorts, grades, and packages about 240,000 dozen eggs per week, including 50,000 dozen organic eggs. About 6% of these organic eggs are not suitable for sale as fresh eggs and so are further processed into frozen and dried products for manufacturers at other plants, both in Wisconsin and out of state.

REC currently lacks the capacity to break and separate eggs. Thus, its organic customers must periodically ship its surplus and below fresh-market grade organic eggs to other plants for additional value-added processing. Obvious efficiencies for the state organic egg processing industry could be obtained if this type of processing were available at REC. Thus Steve Goodman, vice president of REC, initiated this feasibility study.

### Report Organization

This report contains three primary sections:

1. Market analysis, which explores the current and estimated future markets for processed organic eggs;
2. Technology and Facility analysis, which identifies the processing equipment needed and the engineering and remodeling work required at the REC plant to accommodate the proposed expansion;
3. Conclusions and Recommendations, which summarizes the research team's suggestions and identifies possible courses of action for REC.

In addition to the above sections, a financial analysis was submitted to Reedsburg Egg Company. This section of the report contains proprietary information and thus is not available for public review.

## ***II Market Analysis***

This section of the report provides an analysis of the market for organic shell and processed eggs as it relates to the proposed expansion at REC. To provide context, the section begins with a brief outline of the organic market in general, then a very short summary of the conventional egg industry. This is followed by a discussion of the organic shell and processed egg markets. The Market Analysis section concludes with a summary of expected future trends in the organic egg market, based on the available data and preceding discussion.

### Organic Foods Market

According to the Organic Trade Association (OTA), retail sales of organic products have grown steadily for the past ten years, showing a compound annual growth rate of nearly 23% between 1991-2001. Sales in 2001 were over \$9 billion and OTA projects that annual sales will reach \$20 billion by 2005.

Newsweek reported in its September 30, 2002 issue that although organic foods represent less than 2% of the nation's food supply, nearly 40% of consumers buy organic food at least occasionally. A study released in December 2002 by the Food Marketing Institute and Prevention magazine reported that 72% of organic consumers buy organic foods at their regular grocery store rather than at a specialized natural foods store.

The introduction of the new Organic Rule by USDA in October 2002 represents a potentially major development in the organic market. The long-awaited rule provides national standards for the production and labeling of all organic foods, including ingredients of manufactured foods. The Rule was developed over the past decade in response to consumer and industry concerns over a lack of clarity regarding the term organic

Many observers believe the Rule will build consumer confidence in organic foods by ensuring that reliable national standards are being enforced. The supermarket industry expects to see increased growth in organic sales as a result of the Rule from consumers who previously were distrustful of the term "organic." They believe the Rule is likely to encourage shoppers who had previously never tried organic foods to do so.

Although the fruits and vegetables category remains an important part of overall organic sales, other categories are growing at faster rates. Fruits and vegetables are growing at about 8% per year, while overall organic sales exceed that rate by a considerable margin. For example, dairy-including eggs-was among the fastest growing organic categories during the 1990's, showing 500% growth between 1994 and 1999.

### Conventional Egg Market

Prior to the 1940's, small backyard flocks of a few hundred hens produced most of the eggs consumed in the U.S. Today, however, the conventional egg producing industry is dominated by large commercial operations of a million or more laying hens. In total, these operations produced more than 72 billion eggs in the U.S. in 2001.

Such operations require major capital investments for start up. This need for capital has contributed to a rapid consolidation in the industry into fewer, but much larger, egg producing farms. The American Egg Board reports that in 1987 there were 2,500 egg operations with 75,000 birds; in 2002 there were only 280 of that size.

Approximately 70% of conventional eggs produced today in the U.S. are sold as shell eggs, with the remaining 30% going into further processing. The ratio of shell eggs to processed eggs has changed over the years as food manufacturers continuously discover new uses for the functional properties of eggs.

### Organic Egg Market and Processed Organic Eggs

The organic egg industry represents a very small percentage of the total eggs produced in the U.S. Little consumer or retail research has been conducted to date on this segment of the organic market, making it difficult to assess the past or predict the future. However, based on available information, it can be noted that:

- An estimated 4-5 million organic eggs were produced in the U.S. in 2001 (compared to 72 billion conventional eggs, as noted above).
- The Nutrition Business Journal reports that in 2000, the organic egg category grew more than any other organic food category.
- A representative of Organic Valley estimates that the organic egg market has been growing at 25% per year for the last few years, but expects that level to slow to about 10% - 15% in the next few years.

Though detailed data are not available, it is estimated that less than 10% of fresh organic eggs are sold for processing. Processed organic egg products are sold almost exclusively to organic food manufacturers for use in a variety of organic products, including salad dressings and mayonnaise. A wide variety of egg products are available to manufacturers, including whites, yolks, whole (blended) with or without citrus acid, sugar or corn syrup added whites and yolks, and salt added whites and yolks, in both frozen and dried forms.

The retail consumer market for processed organic egg products is almost nonexistent at this time, although interviews conducted for this report identified one company that is currently developing a processed retail organic egg product. Thus, the market for processed organic eggs is driven by food manufacturing companies.

At this point in time the impact of the new Organic Rule on the processed organic egg market is difficult to assess. Interviews were conducted for this report with a sample of organic food manufacturers who purchase processed organic eggs. *These interviews indicate that the new Organic Rule will not have a significant impact on the needs of these food manufacturers for processed organic eggs in the foreseeable future.* Although these interviews indicate that the needs of these particular manufacturers for organic eggs will not grow significantly in the foreseeable future, it is possible that the impact of the new Organic Rule on the organic egg market will increase over time, and thus its long-term impact will be significant.

### Competition Analysis

Interviews were conducted for this report with several organic egg marketing and/or processing companies. This section of the market analysis reviews the major findings of these interviews. The major organic egg producers/processors in the Midwest include: Abbotsford, Egg Innovations, Garden Valley Organic, Organic Valley, and Primera.

### Overview of Organic Egg Processing in the Midwest

All of the companies interviewed, with the exception of Abbotsford, currently produce and/or market organic shell eggs and process them under contract, at certified organic plants that co-pack under the company's private label.

Primera owns four processing facilities in the Midwest where it processes its own eggs. An interview with Primera revealed that they do not co-pack or private label for other organic egg companies. However, research indicates that Primera's organic egg volume is too small to do an organic run more often than once every 1-3 months.

Egg Innovations markets only shell eggs under its own label and sells its breaking eggs to a processor, which markets them under a different label.

Abbotsford appears to be a common co-packer for all of the organic egg marketing companies in the Midwest (except Primera). Abbotsford reported that they have capacity for additional organic processing and are interested in expanding their volume in that market. They have plans to add drying capacity to their facility in the near future.

The two most significant players are Organic Valley and Garden Valley Organic. An executive for Garden Valley estimated that Organic Valley and his company combined supply 95% of the processed organic egg market.

### Processing Capacity

The most striking theme that emerged from these interviews is that there simply *is not sufficient volume of organic eggs* at this time to make organic egg processing a cost-effective operation if it is done exclusively.

In general the processors aren't given enough volume to make organic egg processing pay for itself, and tend to have underutilized organic processing capacity. At the same time none of the organic egg producers have sufficient volume to make processing efficient at any available plant. Their options for processing are limited. Neither group is happy with the current situation.

The fractured nature of this market, combined with a slow growth outlook for processed organic eggs, means that it will be some time before the volume grows enough to make processing efficient. Until that time, it may be that only by combining resources will processors gain the volume necessary to achieve cost effectiveness.

This idea was echoed by a knowledgeable industry observer who purchases organic eggs for a company that co-packs organic salad dressings and mayonnaise. In his opinion, whoever is first to really give organic egg buyers what they want, in the volume they need, will capture the market for processed organic eggs. He suggests sharing the costs of setting up an egg processing plant with other organic egg producers, rather than one company taking on the burden alone.

### Pricing

As part of the interviews with processing companies, researchers attempted to determine a market price for breaking and separating organic eggs. However, the price charged for processing is contingent on many factors, including the volume of an organic processing run as well as the condition, size and age of the eggs in that run. Each processor sets a price for each individual run, based on these factors. Thus there does not appear to be a "going rate" for breaking and separating organic eggs, and no such price can be provided in this report.

## **Major Organic Market Trends**

This section of the report discusses the major market trends that were identified through the research, both primary and secondary, conducted for this report. Although the effects of these trends cannot always be tied directly to the processed organic egg market, they are included here for their potential long-term impact on that market.

- The history of the organic industry indicates that as it matures, it tends to mimic the conventional industry in terms of lead order times, reliability of supply, and meeting the buyer's quality and delivery standards. Interviews with knowledgeable observers and food manufacturers indicate that the organic egg market is slowly evolving in this direction as well. As the industry matures, larger, more sophisticated organic food manufacturers will increasingly expect their organic egg suppliers to provide the convenience and service they can get from the conventional market.
- Some industry observers believe that the new USDA Organic Rule will increase the involvement of mainstream players such as General Mills and Kellogg's in the organic food product market. Mainstream food giants have been buying up smaller natural and organic food manufacturers at a rapid rate the past several years. One result of these trends is that organic products are now being produced in large, state-of-the-art manufacturing facilities owned by multi-national corporations. These processing and operational advantages lead to production efficiencies that far outstrip the capabilities of smaller, traditional organic manufacturers.
- One interviewee believes that in the long run, the entry of mainstream manufacturers will also decrease the price differential between organic and conventional products on retail store shelves. According to Janice Jones, Food Marketing Institute director of research, FMI's study released in December 2002 indicates that organic prices are still a barrier for many mainstream consumers, and that over time organic prices will fall. If this is an accurate prediction, it will serve to force down the prices of processed organic egg products used by food manufacturers.

## ***III Technology and Facility Analysis***

This section of the report analyzes the technological and transportation issues relating to the proposed expansion at Reedsburg Egg Company. It has three sections:

- A. Analysis of the equipment that will be necessary to perform egg processing.
- B. Overview of the construction and remodeling necessary at the REC facility to accommodate the proposed egg processing operation.
- C. Discussion of USDA regulatory issues that must be considered by Reedsburg in a shell breaking and processing operation.

### Equipment Necessary for Proposed Expansion

This section provides an analysis of the specialized machinery and auxiliary equipment needed to accomplish the proposed expansion. As part of this analysis, researchers obtained comprehensive equipment proposals for a typical egg processing plant from two equipment manufacturing firms, Sanovo Engineering USA and Ovobel NV. Like much of this industry,

these proposals were geared toward much larger operations, and so were modified for this analysis.

### Steps in Processing Eggs

As background information, this section provides a brief overview of the steps involved in processing organic eggs into liquid and/or frozen product. Each step includes a description of the equipment necessary to perform this function. For additional information, please see Sanovo Engineering's website for a flowchart that displays the various steps involved in egg processing. No financial information is included here for proprietary reasons.

- Washing and Sorting: REC already has a fully automated washing and sorting operation in place, in which eggs (which have been cooled to the proper temperature) are removed from filler flats and transported into the egg washer, rinsed, sanitized, and candled (sorted by human inspectors), then graded by computer. At that point the majority of the eggs - those suitable for retail - are packaged according to grade.
- Breaking: After eggs have been sorted and the "checks" have been removed for processing, the next step is breaking the eggs and separating the yolk, whites, and shells. This is accomplished by a breaking machine, the most sophisticated of which are capable of breaking 200,000 eggs per hour. REC intends to purchase an older, used machine with a much smaller capacity suitable for REC's egg processing volume. Research conducted for this report identified used machines that break about 1,000 eggs per hour.
- Filtering/Chilling: The separated egg whites and yolks are filtered to remove any bits of eggshell or other impurities, then chilled. After being filtered, the whole eggs are mixed prior to chilling. In addition to three filters (one for whites, one for yolks, and one for whole eggs), three separate self-cooling storage tanks are necessary for this step, as well as pumps and pipes for transporting egg products to the filters and storage tanks.
- Pasteurization: All egg products are fully pasteurized to reduce bacterial content and eliminate the possibility of salmonella. Time and temperature combinations vary according to the product. After pasteurization, the egg products are cooled.

### Regulatory Issues

Currently, Reedsburg Egg Company voluntarily complies with an inspection program for its shell egg washing and grading operation. An inspector is on site at the plant during all operating hours. The Company provides an office for the inspector and pays for all costs associated with this program.

The proposed egg processing operation must have a mandatory USDA inspector in the plant in addition to the current shell egg-grading inspector. The costs of this program are covered by USDA rather than the egg plant operator. However, REC will be required to provide a separate office for the additional inspector.

It is critical that *the USDA Madison office be notified as soon as possible* regarding any proposed expansion. According to the Egg Products Inspection Act (S.I part 590), "any person desiring to process egg products under continuous inspection service must receive approval of such plant and facilities as an official plant prior to the installation of such service." Contact Dr. Linda Madsen at 608-240-4080.

The most critical regulatory component on the horizon is Hazardous Analysis Critical Control Points (HACCP). USDA will require all egg processing plants to develop and adopt HACCP and Standard Sanitation Operating Procedures (SSOP) in the near future. USDA will publish its proposed HACCP rule for egg processing sometime in 2003, and implementation of the new rule is expected in 2004-2005.

In addition, REC must be certified organically as an egg processing plant.

#### ***IV Conclusions and Recommendations***

Based on the previous analysis, the report authors would like to offer a few suggestions and recommendations.

- We recommend that REC consider the possibility of entering into a joint venture with another organic egg company in order to process eggs. Although such a joint venture would be a complex undertaking, the advantages likely outweigh the disadvantages. Advantages would include sharing the financial exposure required to capitalize the operation, as well as the opportunity to increase volume by combining customers. Current market conditions are such that, if done right, such a joint venture could capture the market for processed organic eggs.
- Research conducted for this report was unable to identify a market price for breaking eggs. Thus, the price per pound charged by REC for egg breaking must be negotiated on a per run basis based on the age, condition, and size of the eggs and the size of the processing run.
- The market for processed organic eggs will continue to grow during the next several years, but that growth will be slow. The sales projections include growth of 10% per year, a conservative estimate. The federal Organic Rule will not result in large sales increases in the near future. The slow sales growth outlook suggests that REC should explore the possibility of breaking and separating conventional eggs as well as processing organic eggs for as many customers as possible.
- As noted in the report, the research team tried to accommodate the possibility of future growth and expansion of the processed egg operation by including equipment that has greater capacity than is currently needed by REC. We recommend that REC keep the likelihood of future growth clearly in mind when planning the expansion.