



Alternative Opportunities for Small Farms: Alligator Production Review¹

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Alligators have long been popular for their skins and meat. As early as 1890 alligators were hunted in Florida, and an alligator farm was established as a commercial enterprise in 1891. However, in recent years alligator farming has received renewed interest as a growing aquacultural industry. This is especially so in Florida where several new alligator farms have become established within the last ten years.

Alligator farming as a viable agricultural industry has several distinct advantages. It offers an efficient way to directly utilize meat and meat products which are not suitable for human consumption.

Alligator farming also offers a potential income to farmers for a product that has not been exploited, and allows the use of land that in the past has been a nonproductive or marginal wetland. Alligator farming does not have adverse effects on the environment, and does not require large quantities of land or water.

Marketing Situation

The world market for crocodilian hides should be approximately 2,000,000 by the year 2000. This projection is based on a reported world market for 300,000 crocodilian hides in 1980 and a modest annual

increase in demand of approximately 10% to 15%. The value of raw products from a 6' to 7' alligator is considered to be approximately (+ -) \$300. Value of the finished products may be in excess of five to ten times the raw product value. Finishing and merchandising of raw alligator products offers the opportunity for a major industry. An important added benefit with the alligator industry is that marginal or at present non-productive land can be utilized.

Demand for alligator hides and meat is well established in our society since the last century and doubtless will continue in the future.

Labor and Capital

Those who are interested in establishing an alligator farming operation are advised to have a thorough knowledge of the business and method of operation before committing themselves and their capital to this enterprise. Specific areas one should have knowledge about are: state and federal regulations, land requirements, building requirements, operating expenses, marketing methods, handling and harvesting of alligators, supply sources for food and equipment and long and short term financing.

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Establishment

The American Alligator (*Alligator mississippiensis*) appears similar to other reptiles in the physiology of reproduction. The development of the ovarian cycle occurs once each year between March and May in the northern Hemisphere. Egg laying occurs during June and July with hatching in August and September after approximately 65 days of incubation. Ideal temperature for egg incubation is 86°F. The female alligator must mate each breeding season in order to lay fertile eggs. Follicles that are not ovulated during a breeding season undergo regression. Ovulated follicles are fertilized and travel via the oviduct to be laid 45 days later. All eggs are laid at one time.

Alligator reproductive rates in the farming environment have not reached the efficiency which occurs in the wild population. In order to attain a hatching rate of 1000 young alligators each year, it is estimated that 70 females and 25 males will be required in the breeding herd. Current figures from present day farms allow some assumptions to seem likely. That is: 70 percent of the females will nest each year and average 35 eggs per nest which will have a 60 percent hatching success rate.

These alligators should reach a length of 5 to seven feet within a time frame of 36 to 42 months. A thousand hatchling alligators are produced each year with a mortality rate not to exceed 10% over the three year growth period. This relates to nine hundred marketable alligators each year after the third year of operation. In a heated growout environment, the food consumption will be approximately 30 pounds of meat per year during the first year of growth; 125 pounds of meat in the second year and 250 pounds in the third year. Animals in the breeding herd will consume approximately 400 pounds of meat per animal per year.

Alligators are cold blooded reptiles which become dormant or inactive in cold weather. Alligator farming as a commercial enterprise is most suited for the Southern and Southeastern areas of the United States. However, it is feasible that some areas in other States with the correct facilities may be adapted to a farming enterprise.

Facilities

There are two different approaches to alligator farming. The first method is to have a completely integrated operation which maintains its own breeding stock, hatching facility, nursery facility and a growout

house. Following laying, the eggs are collected, artificially incubated and the hatchling alligators are then raised in the growout house to a marketable size which is between 5 and seven feet.

The second method is to have just a growout operation (sometimes referred to as a feedlot). With this operation, hatchling alligators are purchased from a farm or ranch specializing in the production of hatchlings. Hatchlings may also be available from State agencies which regulate the wild population.

The following specifications and costs for a low-cost alligator farm are based primarily on actual practices of some alligator farms. The farmers are able to have lower costs by doing much of the construction work themselves, buying used equipment, using less space per alligator, and using lower cost building designs. The low-cost farm requires four years to reach full production and should produce 900 alligators per year.

A utility building of 800 square feet is constructed at the beginning of the first year of operation. The building has an incubation room, space for a cooler and freezer, and a storage room. There is no office or nursery. The hatchlings are transferred to the grow-out building immediately after hatching.

This farm also has three grow-out buildings. The first one is built at the beginning of the second year in order to house the alligators during their first year. The building is of concrete construction with two rows of pens. The height of the building is less than four feet and access is through hinged roof panels from the perimeter of the building rather than through a central walkway. The total area of the building is 2,000 square feet.

A second grow-out building of 7,300 square feet is built at the beginning of the third year and a third building of 10,300 square feet is built the fourth year. The design and construction of these buildings are the same as for the first one.

Summary

Operating an alligator enterprise is very expensive. Large capital investments are required over a period of three to four years while no income is being generated. Because of the newness of the industry, there is no certainty that the production methods used will achieve the goals desired.

In the alligator industry, there appears to be potential for making money, provided that production efficiencies are improved and costs are minimized. Therefore, every effort must be made to increase reproduction rates, selectively breed animals for good hide, meat, and growth rates, improve feed conversion rates, and incorporate improved technologies. At the same time, continuing efforts must be made to keep costs low.

Alligator farming is not a "get rich quick scheme" but rather one which requires careful planning and dedication to the principles of quality agricultural production. While there appear to be opportunities to make money, it must be recognized that additional quantities of meat and hides produced may depress prices unless efforts are made to develop the markets for these products. This is especially true for alligator meat. The American consumer is not accustomed to eating alligator meat, so market development activities may have to be undertaken to ensure adequate demand at a good price. For hides, a limited market already exists, therefore some market development may be necessary to ensure a good price. One must remember that the price of skins is dependent on many factors throughout the world. International prices and the world economy can serve to decrease hide prices as well as increase them.