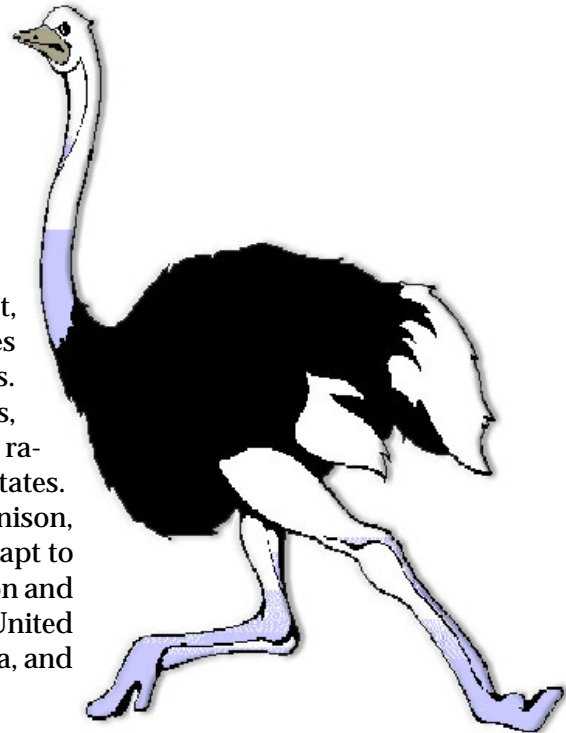


RATITE PRODUCTION: OSTRICH, EMU AND RHEA

CURRENT TOPIC

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Abstract: *This publication discusses the history of ratite production as an alternative livestock enterprise, and goes into many of the issues a beginning producer needs to consider before starting to raise ratites. It also lists ratite-related associations, websites, magazines, and books.*



Introduction

The Ratite family includes flightless birds with a flat, keelless breastbone (the keel is where the flight muscles connect). Most of their muscle is in their legs and thighs. In the wild, ratites eat seeds, herbaceous plants, insects, and small rodents. Ostriches, rheas, and emus are the ratites most commonly raised as livestock in the United States. Ratites produce red meat that is similar to beef or venison, and the hide makes fine leather products. The birds adapt to most climates, so long as they are given proper protection and management. Other ratites less commonly raised in the United States are the cassowary from Australia and New Guinea, and the kiwi from New Zealand.

Regulations

Before purchasing any ratites, would-be producers should first contact their state Department of Agriculture, their local Extension service, and a ratite association (see **Further Resources**) to determine whether there are any requirements for permits or licenses, or other regulations concerning ratites, in their state or locality. In many states, the ostrich, the emu, and sometimes the rhea are classified as livestock rather than as exotic animals, so that no permits or licenses may be required. For assistance in finding state Department of Agriculture phone numbers and addresses, the National Association of State Departments of Agriculture has a state-by-state directory at its website:

<http://www.nasda.org/>

The USDA/Food Safety and Inspection Service (FSIS) announced that as of April 26, 2001, all ratites slaughtered and processed

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for human food are subject to the inspection and sanitary requirements mandated by the Poultry Products Inspection Act (PPIA). This means that inspection is no longer voluntary, with the cost of inspection being paid by the producer/processor, but is mandatory, *with the cost of inspection being paid by the USDA*. A state inspection may be sufficient for marketing meat products *within* certain states that have USDA-recognized state poultry inspection programs. However, ratite meat must be processed under Federal mandatory inspection if it is to be sold through interstate or international markets (1).

Ostriches

The ostrich, the world's largest bird and one of the oldest (having existed as a species for over 40 million years), is adapted to living in open, arid country. Four distinct geographic subspecies are recognized, ranging from the Arabian and Saharan deserts southward throughout Africa. The two subspecies imported to the United States are the Red Neck of northern Africa and the smaller Blue Neck of southern Africa. The first ostrich farm was founded in 1838 in South Africa, and that country is still the dominant producer of ostriches. South Africa protects its ostrich industry by prohibiting the export of fertile ostriches and eggs.

The ostrich is the only bird that has two toes; the other ratites have three or four. Ostriches can live up to 75 years, with 50 years being the average. Adult males can reach eight feet in height and weigh as much as 400 pounds. The male is black, with white wing tips and tail plumes. The female is somewhat smaller than the male and duller in color, with light-brown and gray plumage. Young birds are mottled brown, and molt several times before attaining adult plumage.

The ostrich will start breeding at about two to three years of age and may continue for up to 20 years. Ostriches will set up breeding "attachments," usually pairs or one male and two females. Ostriches will start laying eggs around the first of April and continue laying as late as the end of August. Eggs are laid about every other day, with an average of about 40 eggs laid per year. Incubation takes about 42 days.

Rheas

The rhea, native to South America, is smaller than the ostrich but similar in appearance, with feathered necks and heads but with three toes. Rheas reach four to five feet in height and weigh 50 to 80 pounds. The rhea family consists of two separate species: the white rhea and the common or gray rhea (gray or light brown with white bottom). Rheas will start breeding at about two to four years of age, with males having up to five mates. Egg-laying usually starts around the first of May and continues through the beginning of August. The number of eggs per year varies from 20 to 60. The incubation period is 32 to 42 days. Production practices for rheas are generally the same as for ostriches. However, differences do exist, so it is best to get as much specific information on rheas as possible before starting production.

Emus

The emu, native to Australia, can reach five to six feet in height and weigh up to 140 pounds. Its life span is between 30 and 40 years, and it starts its reproduction cycle at about two to three years of age. Production practices for emus differ only slightly from those for ostriches. Emus breed and lay eggs mainly during the winter months, while ostriches and rheas breed and lay eggs in late spring, summer, and early fall. Sometimes starting as early as October and ending as late as June, the females lay an egg about once every three days, and will lay, on average, 25 eggs per year. The emu has dark-green eggs that cannot be candled (examined in front of light to check fertility and chick growth) during incubation. Incubation is approximately 50 days.

Production Practices

There are many things to consider before beginning ratite production. Choice of breeding stock, pen and building construction, nutritional requirements for various age groups, health practices, handling and hauling of birds, incubation of eggs, and brooding and care of newly hatched and juvenile chicks are some of the issues that need attention. A Producer “Info-Pak” Manual, designed to provide introductory information to new producers, is available free of charge from the Ostrich Association of Alberta (Canada) at <http://www.ostrich.ca/pages/infopk.htm>. Another source of free introductory information is the *Oklahoma State Ostrich Book* located at <http://www.cvm.okstate.edu/instruction/kocan/ostrich/ostbk2.htm>.

In addition, Alberta’s Ministry of Agriculture, Food, and Rural Development has two new publications on the commercial ostrich and emu industry. These have excellent information on marketing, production, and economics, including budgets. It should be remembered that dollar amounts are stated in Canadian dollars, currently valued at about 66 cents to the U.S. dollar. *Commercial Ostrich Industry* can be found at http://www.agric.gov.ab.ca/agdex/400/484_830_1.html. *Commercial Emu Industry* can be found at http://www.agric.gov.ab.ca/agdex/400/484_830_2.html.

Additional information on the various aspects of ratite production is available from ratite associations, books, websites, videos, and magazines (see **Further Resources**).

PASTURING OSTRICHES & EMUS

By Chris Penrose, Athens Co. OSU Extension Agr. Agent &
Dean Slates, Holmes Co. OSU Extension Agr. Agent

As ratite producer incomes get squeezed to the limits, cost cutting efforts may raise otherwise unthinkable alternatives to the forefront. Pasturing of birds for “feed purposes” may be a viable idea for ostrich and emu producers who have a land resource that is adaptable for that purpose.

“True pasturing” is not the accepted norm for Ohio ostrich and emu, but these birds can consume considerable quantities of forages depending on: the physiological stage of the birds, size of birds, the environment, temperature, access to water and grit, maturity of the plants, supplemental feeding, etc. Adult birds will consume 1-2.5% of their body weight in forage (dry matter) each day, depending on many factors. As with any grazing animal, producers must continually assess body condition and provide supplemental energy as needed to attain growth and production goals.

It is crucial that birds have easy access to clean fresh water while on pasture. Consumption of 2-3 gallons of water is normal for a pastured adult ostrich. Granite chip grit must be available to facilitate digestion of forages that are eaten. Pasture plants have adequate calcium, so oyster shells should be avoided. They are softer than granite and contain calcium that will potentially disrupt the calcium-phosphorous balance of the diet.

The risk of acute impactions has made many growers reluctant to graze their birds. Transitioning birds to quality pasture (from dry feeds) over a 10-14 day period, and assuring grit and water, will minimize the risk of acute impactions. **

The most difficult aspect of grazing ratites is their propensity to devastate a pasture. Given the oppor-

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tunity, they will devour every speck of plant life. Provision must be made to rotate birds to prevent overgrazing. Then pasture paddocks must be allowed adequate “rest” before another graze is initiated. The issues of grazing ostrich, emu, or rhea are essentially the same ones faced by producers of other livestock species: setting up grazing groups; determining pasture carrying capacity, duration of graze, and length of rest periods; determining stocking rates; paddock layout; fencing; supplying adequate water; supplemental feeding; parasite control; predation protection; etc.

It is obvious that ratite producers must address each of those issues with solutions that are appropriate to their respective operations and species, but development of a pasture resource can provide economical, quality feed. The central question is not, “Will pasture work for ostrich and emus?” The real question is, “Can I adapt my management to feed my birds pasture?” (2)

** Impactions are a frequent problem in raising chicks up to adulthood. Moving to new pens, changing diets or excess stress may initiate abnormal eating habits and increase the problem. There are two types of impaction. Acute impactions generally result from the chick eating too much unusable materials very rapidly. This can occur on sand, dirt, rocks, gravel, grass, etc. The chick may die quickly when the proventriculus (ostrich glandular stomach that empties into the ventriculus or muscular stomach, which contains the grit, rocks, and other materials to break down food) is overextended and becomes non-functioning. Chronic impaction can develop in birds that have a partially impacted proventriculus that only allows some materials to pass into the ventriculus. For additional information on impactions, go to

<http://www.cvm.okstate.edu/instruction/kocan/ostrich/ostbk2e4.htm>.

Marketing Options

The market for ostriches, emus, and rheas is limited and variable. The birds are no longer being sold only for breeding stock or, like cassowaries, as exotic pets. A commercial market for meat, hides, feathers, and emu oil is developing. The number of slaughtering facilities and marketing cooperatives in the U.S. is increasing. Some national and state associations, as well as other groups (see **Further Resources**), list market reports on their websites.

Meat from ostriches and emus is gaining recognition in the restaurant trade as a very lean red meat similar to beef or venison. However, ratite meat has a limited market depth, and must compete with beef, chicken, and pork for consumer acceptance. Ostrich hide has a well-established market, but emu hide tanning is not as consistent, so the market is smaller. Emu oil is gaining attention in the cosmetic and pharmaceutical industries, but ostrich oil has no market as of yet. Each emu, when slaughtered, can yield five or more liters of fat. When properly rendered, emu oil is a deep-penetrating oil that can be used as a moisturizer, or as a treatment for muscle aches.

Even though the price of ratites has decreased greatly over the last few years as the industry shifts from a more limited breeding market to a commercial market, the death or theft of a bird can still be a financial blow. Learning how to raise ratites is time-consuming and will probably be very difficult for someone with no other livestock experiences. However, the cost of production is dropping, as the rate of egg-laying per breeder bird increases, and as a larger survival rate to slaughter age is attained. With better production and culling practices, more producers will be able to make a profit selling their ratites. Some producers are starting to split aspects of production with other producers to improve efficiency; one specializes in egg hatching and brooding, while the other specializes in feeding birds for slaughter.

Anyone interested in getting into the ratite business should exercise considerable caution, and not expect to make big, quick profits. Consider ratite production as a very risky, long-term enterprise. It would be hazardous to borrow a lot of money or use retirement funds to begin any high-risk business. Before starting a ratite enterprise, carefully calculate the costs and returns possible, and decide whether the potential return on investment compares with alternative options, such as savings, stocks, or mutual funds. The ratite market will continue to be very risky until the meat becomes a more stable niche product for restaurants and is available from other non-specialty markets such as groceries and fast-food restaurants.

The new ratite producer should find an established producer to work with. The established producer can extend valuable advice and help in setting up and beginning the new operation. It is important to work with producers who can be trusted and are willing to work with the new producer. It is especially hard for inexperienced buyers to judge the quality of birds themselves. Many inexperienced and even experienced producers have bought birds that are not of the expected quality, or were too closely related to be good breeding stock. It is easy to lose a lot of money on an inappropriate purchase.

It is very important to research your marketing options and consider such factors as market stability; cost of production including both variable and fixed costs; and state and federal regulations.

SOME MARKETING OPTIONS TO CONSIDER ARE:

- SALE TO PROCESSOR FOR SLAUGHTER
- SALE OF BREEDING STOCK TO OTHER PRODUCERS
- SALE OR PURCHASE OF YOUNG BIRDS TO RAISE FOR SLAUGHTER
- STARTING OR JOINING A MARKETING COOPERATIVE
- PROCESSING THE BIRDS AND DIRECT-MARKETING THE PRODUCTS

Conclusion

It is very important that all aspects of the ratite business are researched since a lot of money, personal time, and energy will be invested into this 365-day-per-year enterprise. There will be rewards and profits for successful breeders; there are also great potential risks and many difficulties in starting any new business enterprise. The bottom line is: Projected income should be greater than the costs of producing the birds. The ability to produce birds is important, but the ability to sell them should be the key factor in your decision to undertake this enterprise. Make sure the birds produced can be sold at a profit.

References:

- 1) Derfler, Philip S. 2001. Ratite and squab mandatory inspection. Attachment to FSIS Constituent Update, April 20, 2001. April 18. <<http://www.fsis.usda.gov/oa/update/042001att3.htm>>. 2 p.
- 2) Penrose, Chris and Dean Slates. 1999. Pasturing ostriches & emus. Amazing Graze. May. <<http://forages.osu.edu/News/Archive/1999/amazegrazemay99.html>>. p 2-3.

Further Resources

Associations:

State associations often work with the national associations. Contact the national to find out about any state or local associations.

American Ostrich Association
Carol Twyman, Secretary/Treasurer
12180 Clint Parker Road
Conroe, TX 77303
(817) 624-3322; Fax: (817) 624-2047
Email: ostriches@mindspring.com or caroltwyman@cs.com
<http://www.ostriches.org/standardbodypage.htm>

Helps with the exchange of information between producers, registers birds, holds an annual convention, plans meetings and seminars, and publishes a bimonthly newsletter. The annual membership cost is \$150.

American Emu Association
P.O. Box 740814
Dallas, TX 75374-0814
(208) 983-7928; Fax: (520) 962-9430
Email: info@aea-emu.org
<http://www.aea-emu.org>

Was established in the spring of 1989. Membership for family, ranch, etc. is \$300. yearly, which includes a quarterly newsletter. The association also holds an annual convention. For a listing of affiliated state associations, see <www.aea-emu.org/states.asp>.

North American Rhea Association
Richard Gideon
Phone/Fax: (712) 277-8357
Email: rgideon@willinet.net
<http://www.nara.net>

Was formed in 1992 and is dedicated to establishing rhea production as a viable agricultural specialty. Contact the association for additional information on their organization or about rheas.

Websites:

USDA National Agricultural Library
Special Reference Briefs Series 97-6, *Raising Emus and Ostriches*
http://www.nal.usda.gov/afsic/AFSIC_pubs/srb9706.htm

References associations, electronic resources, and publications.

Canadian Ostrich Association
<http://www.ostrich.ca/pages/infopk.htm>

Includes their on-line Producer "Info-Pak" Manual, providing introductory materials to new producers.

Oklahoma State Ostrich Book

<http://www.cvm.okstate.edu/instruction/kocan/ostrich/ostbk.htm>

Ostriches On Line

<http://www.ostrich.com/>

Free information on raising ostriches; free newsletter.

Missouri Alternatives Center

<http://agebb.missouri.edu/mac/links/index.htm>

List of Extension publications and guidelines from university research centers on many subjects. For emu publications go to E, for ostrich publications go to O, and for rhea publications go to R.

Iowa State University Nutrition Guidelines for Ostriches & Emus

<http://www.extension.iastate.edu/Publications/PM1696.pdf>

University of Florida

Ratite Industry Current Status

http://edis.ifas.ufl.edu/BODY_PS004

Magazines:

Emu Today & Tomorrow

P.O. Box 7

Nardin, OK 74646-0007

(580) 628-2933; Fax: (580) 628-2011

<http://www.emutoday.com>

Published monthly for \$25.00 per year.

Small Farm Today

3903 W. Ridge Trail Road

Clark, MO 65243-9525

(800) 633-2535; Fax: (573) 687-3148

Email: smallfarm@socket.net

<http://www.smallfarmtoday.com>

Published bimonthly for \$23.95 (occasionally features ratite articles).

Ag Ventures

11950 W. Highland Avenue

Blackwell, OK 74631

(580) 628-4551; Fax: (580) 628-2011

Email: AgVentures@aol.com

<http://www.agventures.com>

Published bimonthly for \$21.00 (occasionally features ratite articles).

Books:

(see next section below for book distributors' contact information)

A Manual on Emu Farming, Emu Farmer's Handbook by Phillip & Marie Minnaar
Available from: WXICOF and Stromberg's Chicks

Emu Farmer's Handbook Volume 2: Commercial Farming Methods for Emus, Ostriches, and Rheas by Phillip & Marie Minnaar
Available from: WXICOF, Stromberg's Chicks, and Amazon

Guide to Hatching and Raising Emus Economically by Janice Castleberry
Available from: Janice Castleberry

Ostrich and Ratite Chick Rearing – A Stockman's Guide by Charles Deeming
Available from: Amazon

Ostrich Opportunity and Ostriches: Still Your Great Opportunity Video by Dale Coody
Available from: Stromberg's Chicks

Ratite Management, Medicine, and Surgery by Thomas N. Tully Jr. and Simon M. Shane
Available from: Krieger Publishing Company and Amazon

What Is A Rhea? Clifford Johnson
Available from: WXICOF

Practical Incubation by Rob L. Harvey
Available from: Hancock Wildlife Research Center, WXICOF, and Amazon

Ratite Egg Incubation by Dr. D. C. Demming
Available from: Amazon

Book Distributors:

Amazon.Com
<http://www.amazon.com>

Hancock Wildlife Research Center
1431 Harrison Avenue
Blaine, WA 98230
(800) 938-1114

Janice Castleberry
Triple C Ranch, Inc.
Route 2, Box 234-B1
Lampasas, TX 76550
(512) 556-5910
Email: janice@triplecranchinc.com

Krieger Publishing Company
P.O. Box 9542
Melborne, FL 32902-9542
(407) 724-9542; Fax: (407) 951-3671
Email: info@krieger-publishing.com
<http://www.krieger-publishing.com>

Stromberg's Chicks
P.O. Box 400
Pine River, MN 56474
(800) 720-1134; (218) 587-222; Fax: (218) 587-4230
<http://www.strombergschickens.com>

WXICOF
Coreen Eaton
914 Riske Lane
Wentzville, MO 63385
(636) 828-5100; Fax (636) 828-5431
Email: coreen@wxicof.com <http://wxicof.com/Books/birds/Ratite/ratite1.htm>

The Electronic version of **Ratite Production: Ostrich, Emu and Rhea** is located at:
HTML
<http://www.attra.org/attra-pub/ratite.html>
PDF
<http://www.attra.org/attra-pub/PDF/ratite.pdf>

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