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Eva Wallner-Pendleton
University of Nebraska - Lincoln

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Biosecurity and Disease Prevention for the Ratite Grower

This NebGuide acquaints the ratite grower with management techniques that can help reduce the likelihood of disease introduction and spread on the farm.

Dr. Eva Wallner-Pendleton, Extension and Diagnostic Avian Veterinarian

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Introduction

Infectious diseases always concern people who raise animals, including ratite and poultry producers. In general, the larger the number of animals concentrated in a given area, the more potential there is for diseases to occur. This potential is greatly increased if new animals are frequently introduced. Other ways diseases are spread include allowing visitors near the animals, raising multiple ages close to each other or allowing contact with other species.

As the ratite industry matures, farms will inevitably become larger and more specialized. This change requires more sophisticated disease prevention techniques to protect the valuable investment each grower has in the operation. The biosecurity measures discussed below are those implemented by the poultry industry which, with some modifications, can be geared toward the unique characteristics of ratite husbandry. In the long run, diseases are far easier and more economical to prevent than to treat.

Basic Biosecurity Measures

Quarantine New Acquisitions

All new birds should be isolated from the rest of the stock for at least 30 days. The isolation area should be a good distance away from the rest of the birds. These birds should be cared for as the last part of the day's chores. During this isolation time, a veterinarian can perform tests for parasites, serology (AI, Pullorum, mycoplasmosis), complete blood count and serum chemistries, and salmonella cultures. The birds should be observed daily for signs of diarrhea, reduced feed intake, weight loss, or breathing difficulty. After the quarantine period, healthy birds may be added to the flock.

Prevent Disease Spread Between Groups

Diseases are spread many different ways: by direct bird to bird contact, by people carrying agents on clothing, hands or footwear from one pen to another, contaminated equipment going from one place to another, rodents, wild or domestic free roaming birds, cats, dogs, raccoons, etc.

Frequently, after a bird has seemingly recovered from a disease, it may still be a disease carrier and pose a threat to the rest of the flock.

Diseases can also be spread by infected eggs. Purchasing fertile eggs on the open market and mixing eggs of many sources in an incubator is very risky. One diseased egg can threaten the health of all the others in the machine. If eggs are to be purchased in this manner, it is important to buy only from people who can document good fertility, hatchability, and survivability of their chicks. They should be willing to show their records and give a list of their clients as references.

Similarly, it is a risky practice to custom hatch eggs for multiple clients in one machine. An egg may look perfectly sanitary on the outside but be harboring bacteria or viruses on the inside. If the embryo in the egg dies, it is often difficult to determine if the death was due to poor egg quality or incubator problems. It is far safer for ratite operations to produce their own hatching eggs and hatch them in their own incubators at this time.

Divide Farm Into Disease Control Units

Preventing the introduction and spread of disease is easier if one divides the farm into physically separated functional units. Typical units might include:

- **Breeder farm** — This includes facilities housing breeding animals, as well as the building which contains the incubator and hatcher. It is a functional unit since the same individual that cares for these birds would also be in charge of gathering eggs and monitoring the machines.
- **Brooder farm** — This unit includes all young chicks from one day of age to 3 months. This age group often suffers the highest death loss and their care is more labor intensive. Birds in this age group have little immunity to diseases and are best kept isolated from the older birds.
- **Grow-out farm** — The grow-out unit would be comprised of birds from 3 months of age until market, or sale.
- **Quarantine area** — An area needs to be set aside where newly purchased birds can be placed for an observation and testing period. Individuals should attend to these birds last. Ideally, the area should be a good distance away from the rest of the operation. A one-quarter mile is recommended, as this is believed by some to be the maximum distance diseases may be carried through the airborne route.

People going from one unit to another should change footwear, have a set of coveralls available, and wash hands. Having pull-on boots available in front of each unit is very helpful. Coveralls and pull-on boots should not be shared between one unit and the next. Besides dividing the farm into functional units, leaving some physical distance between units is desirable. Ratite operations on small acreages may have difficulty doing this. Obviously, the biggest investment is in the breeding stock. Disease prevention is critical here. If at all possible, a separate individual should care for the breeder unit, and others for the rest of the farm.

Lastly, domestic animals, especially poultry and gamebirds should not be allowed to mingle with the ratites. It is highly recommended to not have these animals on the farm. Poultry in particular can spread many diseases to ratites that may affect reproduction and health. Waterfowl can be carriers of avian influenza, which may prevent the grower from obtaining health certificates for the birds. Cats can spread toxoplasmosis, a frequently incurable protozoal disease. It is the opinion of the author that keeping these other animals constitutes unacceptable risk when raising such valuable birds.

Of equal importance is the practice of regular rodent and predator control. Stored feed should be kept in rodent-proof containers as rodent droppings can frequently harbor disease-causing organisms.

Visitor Policy, Sale Barns, and Miscellaneous

Since buying and selling these animals is important to the ratite business, a way is needed to advertise birds and get customers. One should advise all visitors that protective clothing will be provided before they can set foot on the farm. Visitors should be asked not to go near other birds before they visit. The safest method is to design an attractive video for prospective buyers which they can view without stepping foot on the farm.

If birds are taken to a sale barn, they should not be returned to the rest of the flock later. They should be treated as new birds and taken to the quarantine area for observation. The comingling of birds from many different sources at these sales unfortunately make them ideal places to acquire disease. One should always weigh the risks with the benefits before attending these sales.

Basic Sanitation of Facilities

Regular cleaning of facilities is helpful to prevent bacterial build-up in the pens. Drinkers should be scrubbed and cleaned every day. Water should be changed daily. If well water is used, a sampling and analysis of the water for bacteria, nitrates, pH, hardness, etc. should be performed on an annual basis. Enough feed should be placed in front of the birds to allow emptying of the feed trough regularly. Feed should never be allowed to get wet, as it may become moldy. Feed troughs should be mounted off the ground. While sterility of the birds' environment is not possible, or even desirable, basic cleanliness is important to health. The bedding should not be allowed to become wet. Wet bedding and manure build-up can lead to sore feet. Wet bedding can also become moldy which is harmful to the birds. Wet bedding should be removed from the pens and replaced with dry material. Good ventilation is probably the most important factor in keeping indoor pens dry.

If possible, an all-in, all-out policy should be practiced. For instance, if a pen of birds have become old enough to be moved to larger pens, all the birds should be moved at once. This allows pens to periodically become empty, and ready for thorough clean-out and disinfection. After the clean-out is complete, new birds may be placed. This procedure allows for a break in the disease cycle. Poultry producers call this procedure "depopulating a building." Besides breaking the disease transmission cycle, it is frequently observed that overall bird quality improves if a house can stay empty for a while. Many disinfectants are available for use in livestock buildings. Most are very effective. However, all require that organic material (manure, feed, bedding, feathers etc.) be removed before disinfection takes place.

Educating Employees/Partners on the Importance of the Above Procedures

These procedures for disease control only work if every one is 100 percent committed to following the plan. The old adage "a chain is only as strong as its weakest link" especially applies here. Half-hearted, half-way adoption of this plan will guarantee failure and only convince everyone that the plan was a waste of time and money. However, prevention of even one catastrophic disease outbreak will more than justify the extra labor and initial investment involved. But it will only work if everyone follows the procedures **each and every time** they go out to the birds!

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