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# Features of safe and healthy BEHAVIOR OF OSTRICH CARE WORKERS

**Abstract.** *The historical aspects, significance, peculiarities of ostrich behavior and occupational safety of ostrich farm workers are analyzed. It is noted that ostrich farming began in the world in the late XIXth century. The authors study the domestic and foreign practice of stausivnytstva. Describes the significant contribution of the industry in obtaining ostrich products – leather, meat, eggs, feathers. The value of staus products in comparison with other species of animals is noted. It is emphasized that during the care, feeding and observation of ostriches it is necessary to follow the established precautions. An ostrich can kick from bottom to top with a force of 30 kg per 1 sq. km. With one blow it can easily injure the worker. It has been established that ostriches are quite aggressive during the reproductive period – they can take the employee as an opponent with all the negative consequences. It is noted that during work with adult ostriches (transfer to another place, loading into vehicles, carrying out of medical and preventive actions, etc.) for calming of a bird apply a special hook not less than 2 m long by means of which its head presses to the earth, and then put on an opaque hood on his head. Ostriches can be caught in the appropriate gutters, grabbing them by the head with a hook or hands. Experienced handlers use a number of specialized tools, including boards, hooks and limiters. Due to the risk of injury to birds or humans, ostriches should be handled by an experienced worker. It is noted that it is better to walk a bird to three workers, one holding each wing and one pushing from behind. Ostriches require a very good fence, as they can slip through or go over strung-wire stock fences. Measures to prevent injuries to workers during the care and breeding of poultry are described. It is noted that breeding ostriches is one of the most profitable businesses in agriculture.*

**Ключові слова:** *ostriches, history and production of ostriches, aggressivity of a bird, safety of labour, injury prevention measures, hook, hood*

The flightless ostrich is the world's largest bird. Common ostriches have inspired cultures and civilizations for 5000 years in Mesopotamia and Egypt. A statue of Arsinoe II of Egypt riding a common ostrich was found in a tomb in Egypt. In Eastern Christianity it is common to hang decorated common ostrich eggs on the chains holding the oil lamps. In Roman times, there was a demand for common ostriches to use in games or cooking. They have been hunted and farmed for their feathers, which at various times have been popular for ornamentation in fashionable clothing. Their skins are valued for their leather (Osterhoff, 1979).

In the XVIIIth century they were almost hunted to extinction; farming for feathers began in the XIXth century. Ostriches have been farmed in South Africa since the beginning of the XIXth century. The first commercial ostrich farm was established in South Africa in about 1860 solely for harvesting the feathers every six to eight months. Ostrich farms began to spread gradually to other countries, particularly Egypt, Australia, New Zealand, the United States and

Argentina, until the total number of ostriches raised commercially reached over 1 million by 1913. With the First and Second World Wars, however, the ostrich feather market crashed and the number of ostrich farms dropped significantly. The industry, nonetheless, managed to survive on a much smaller scale in South Africa. By keeping ostriches not only for their feathers but also for their meat and hides, it grew steadily thereafter. The shortage of ostrich skins caused prices to rise. This made ostrich farming an attractive proposition and a number of farms were established in Europe and more in the United States in an attempt to fill part of the ever-increasing international demand. The world ostrich industry had finally begun and continues to grow steadily. The English are credited with first taming common ostriches. Farmers captured baby common ostriches and raised them successfully on their property, and were able to obtain a crop of feathers every seven to eight months instead of killing wild common ostriches for their feathers (Cooper et al., 2009). Commercial farming for feathers

and later for skins and meat became widespread during the 1970s. It is claimed that common ostriches produce the strongest commercial leather.

Common ostriches are so adaptable that they can be farmed in climates ranging from South Africa to Alaska. The wild common ostrich population has declined drastically in the last 200 years, with most surviving birds in reserves or on farms.

The ostrich is undoubtedly the world's largest living bird. Adult males stand 2.4 m tall and can weigh well over 100 kg; the hen is slightly smaller. Ostriches are flightless birds, with their great body size and reduced wing size rendering them incapable of flying. They have a long neck, long bare legs and two toes. Their strong legs allow them to run up to 70 km per hour when necessary, with strides of up to 8 m. Neck and thigh muscles are well developed and unfeathered. Ostriches can easily tolerate temperatures up to 30 degrees below zero. Ostriches are comfortable living in the weather conditions of Ukraine (An ostrich farm in Ukraine).

The ostrich meat tastes similar to lean beef and is low in fat and cholesterol, as well as high in calcium, protein and iron. Uncooked, it is dark red or cherry red, a little darker than beef. The nutritive value of ostrich meat compared with traditional meats is given in Table 1 (Tawanda Karombo. 2019).

Comparison of some parameters of cattle and ostriches is given in Table 2.

Ostriches live in small herds that typically contain less than a dozen birds. Alpha males maintain these herds, and mate with the group's dominant hen. The male sometimes mates with others in the group, and wandering males may also mate with lesser hens. All of the group's hens place their eggs in the dominant hen's nest – though her own are given the prominent center place. The dominant hen and male take turns incubating the giant eggs, each one of which weighs as much as two dozen chicken eggs.

Contrary to popular belief, ostriches do not bury their heads in the sand. The old saw probably originates with one of the bird's defensive behaviors. At the approach of trouble, ostriches will lie low and press their long necks to the ground in an attempt to become less visible. Their plumage blends well with sandy soil and, from a distance, gives the appearance that they have buried their heads in the sand.

Common ostriches typically avoid humans in the wild, since they correctly assess humans as potential predators. If approached, they often run away, but sometimes ostriches can be very aggressive when threatened, especially if cornered, and may also attack if they feel the need to defend their territories or offspring.

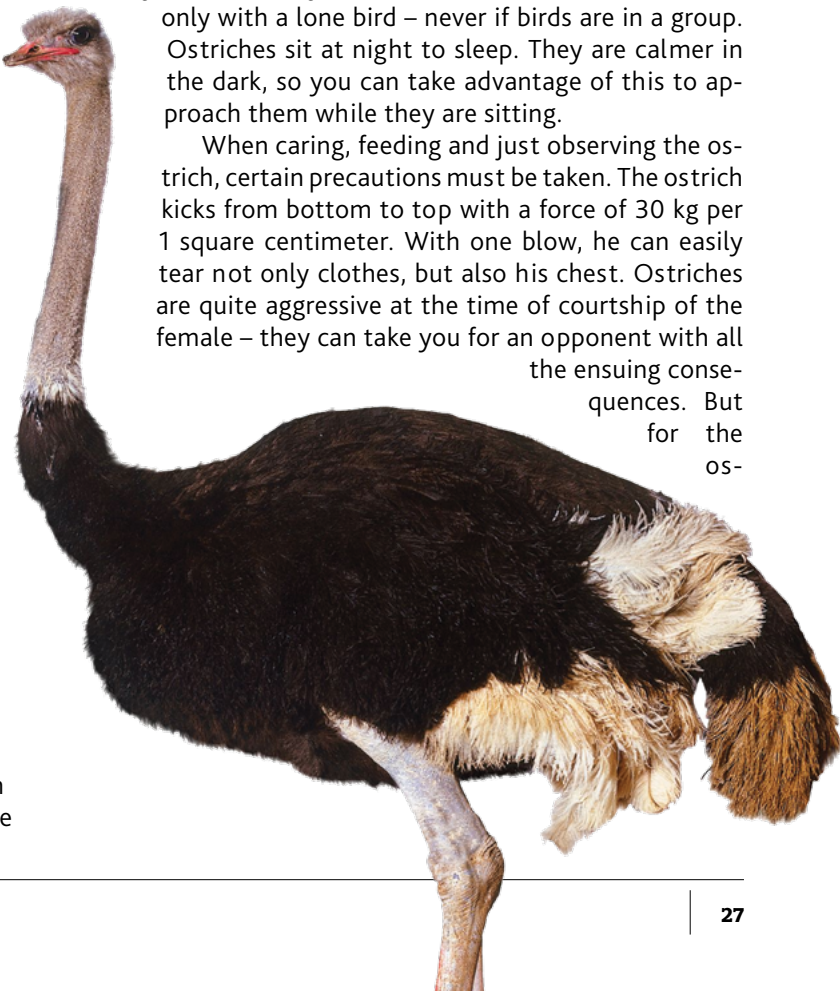
Similar behaviors are noted in captive or domesticated common ostriches, which retain the same natural instincts and can occasionally respond aggressively to stress. When attacking a person, common ostriches deliver slashing kicks with their powerful feet, armed with long claws, with which they can disembowel or kill a person with a single blow. In one

1. The nutritive value of ostrich meat compared with traditional meats

100 g raw meat	Ostrich	Beef	Chicken
Protein (g)	21.9	20.0	21.4
Fat (g)	1.0	15.6	2.6
Cholesterol (mg)	63	86	74
Energy (cal)	114	276	163
Calcium (mg)	5.2	9.0	13.0

study of common ostrich attacks, it was estimated that two to three attacks that result in serious injury or death occur each year in the South Africa, where a large number of common ostrich farms are set next to both feral and wild common ostrich populations (Brand and Gous, 2006). Ostriches and other flightless birds are called "ratites." These birds all require specialized handling skills. Their natural defences are their beaks, large sharp talons and powerful wings. They can easily outrun a person. Ostriches can be prone to panic and can shift from calm to agitated very quickly. Be alert to anything that may change the environment around these birds, because it's easier to control their surroundings than it is to manage a group of agitated large birds. The safest place for a handler is to the side of one of these birds, so the approach must not cause alarm. Facing an ostrich head-on makes you vulnerable to a kick. These birds are curious and can often be enticed by their curiosity to move. However, use bait as a lure only with a lone bird – never if birds are in a group. Ostriches sit at night to sleep. They are calmer in the dark, so you can take advantage of this to approach them while they are sitting.

When caring, feeding and just observing the ostrich, certain precautions must be taken. The ostrich kicks from bottom to top with a force of 30 kg per 1 square centimeter. With one blow, he can easily tear not only clothes, but also his chest. Ostriches are quite aggressive at the time of courtship of the female – they can take you for an opponent with all the ensuing consequences. But for the os-



2. Comparison of some parameters of cattle and ostriches (Tawanda Karombo. 2019)

Parameters	Ostriches	Cattle
Gestation/incubation period (days)	42	280
Offspring per year	40	1
Period from conception to slaughter (days)	407	645
Meat (kg)	1 800	250
Leather (m²)	50.4	2.7
Feathers (kg)	36	–

trich, the one who is higher is stronger and more important. Therefore, if you raise a stick and crown it with a hat, you can not be afraid: the giant will treat you with respect. When fleeing, the ostrich flattenes itself on the ground, craning its neck to be lost sight of, but as soon as the danger approaches, it instantly jumps up and runs away at a speed of 70 km per hour.

Ratites (especially ostriches) are very dangerous to handle, and it is important that veterinarians respect their ratite patients and use proper restraint techniques to examine and treat them. Experienced handlers should be the only people around adult ratites that are being captured.

Young ostrich and emu chicks should be supported in a sternal position with the legs tucked under the bird in the arms of the handler, thereby reducing their struggles. Young birds should never be carried upside down by the legs because of their susceptibility to musculoskeletal damage. Ostriches of any age can be sedated by 'hooding' – placing a cloth bag or sleeve over the bird's eyes. For

larger birds, the handler may wear a sweatshirt sleeve that can be removed once the beak is captured, and placed over the bird's head. Young birds can be transported in large pet carriers that have substrates with traction to prevent leg injuries.

Juvenile and adult birds are captured and restrained in a similar manner. Emus should be captured by using a swing gate or by running the birds into a narrow chute. Once the bird is captured the holder should stay behind it, using one hand to grab the chest and resting the other on the dorsum of the back. Adult emus are strong, and kick hard and high. Using emu wings as handles may be effective, but these vestigial wings fracture easily during restraint and, although not life-threatening, the wing fractures affect the general appearance of the bird. It is important that handlers always stay behind captured ratites, to protect both themselves and the birds.

Ostriches are very big and may be aggressive during the breeding season. A head hook has been manufactured to aid in moving and capturing ostriches quickly, and is extremely useful. This hook may cause injury, as an ostrich's first instinct when captured is to back up; if the head is pulled at the same time, muscle damage may occur. Ostriches may be captured in appropriate catch pens or chutes by grabbing the head with a hook or the hands. If the head is controlled, then the animal is controlled. A bird with its head captured will back up in order to kick forward, and the bird should therefore be led by the head with one or two people pushing from behind.

Experienced handlers use a number of specialized tools, including boards, hooks (shepherd's crooks) and restrainers like brooms. Because of the risk of injury to the birds or people, handling techniques must be learned from someone more experienced. Birds that have become accustomed to human contact are much easier to work with, so young birds should be handled gently. When trying to catch an adult bird, try to have a quieter bird between you and the one you are hoping to catch, as you approach. This will prevent an alarm reaction. To catch a bird, take the top of its neck and slowly lower the head close to the ground, or catch its head. Place a hood over the eyes and neck and lower the head toward the ground. The bird can be carefully led with a bag on its head. Moving the bird can be easier with the bird unable to see and may allow you to lead it without incident. Be aware, though, that the bird may try to run blindly and without thought, hitting objects, other animals or the handler. These heavy birds can cause injury through this type of panicked movement. Try to walk the bird with three handlers, one holding each wing and one pushing from behind. Birds that can be approached and are quiet, can have a rope placed around the chest to slow down flight. Use extreme caution in this and always be prepared to let go of the rope if the bird starts coming directly towards you. If the bird is accustomed to being handled, it may be possible for one experienced person to rope and then move it, by pushing gently from the back of the bird and steering it. If the birds must be moved in a group or herd, use an established object like a fence or a wall to help guide them (Lebedev, 2018).





Ostriches require very good fencing, as they can slip through or go over strung-wire stock fences. Use page fencing and make sure it is well above the height of the birds' chests. The key zoonotic disease that can be transmitted from ostriches and emus to people is salmonella.

## CONCLUSIONS

In the last few years, ostrich farming has progressed dramatically and the world ostrich industry has achieved some economic stability. On many farms, however, the management of the birds, particularly the young chicks, is still relatively primitive. There is considerable scope for improvement in the areas of artificial incubation, chick nutrition, environmental requirements and selective breeding. Unfortunately, despite its great potential, the ostrich has received and continues to receive little attention from scientists. If ostrich production is to provide the meat of the future, a scientific approach is the only way forward. Experts say that growing and breeding ostriches is one of the most profitable businesses in agriculture. It can also be called "zero waste". ■

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## Особливості безпечної та здорової поведінки працівників зі страусами

**Анотація.** Проаналізовано історичні аспекти, значення, особливості поведінки страусів та безпеку праці працівників страусових ферм. Відмічено, що фермерське розведення страусів розпочалося у світі наприкінці XIX сторіччя. Авторами досліджується вітчизняна та зарубіжна практика страусівництва. Описано значення галузі в отриманні продукції страусівництва – шкіри, м'яса, яєць, пір'я. Відмічена цінність продукції страусів порівняно з іншими видами тварин. Наголошено, що під час догляду, годівлі та спостереження за страусами необхідно дотримуватись встановлених запобіжних заходів. Страус може бити ногою знизу вгору з силою 30 кг/см<sup>2</sup>. Одним ударом він легко може травмувати працівника. Встановлено, що досить агресивними страуси бувають у репродуктивний період – вони можуть прийняти працівника за суперника з усіма негативними наслідками. Відмічено, що під час проведення робіт з дорослими страусами (переведення в інше місце, завантаження в транспортні засоби, проведення лікувальних і профілактичних заходів тощо)

для заспокоєння птаха застосовують спеціальний гак довжиною не менше 2 м, за допомогою якого його голову притискають до землі, а потім на голову одягають світлонепроникний каптур. Страусів можна ловити у відповідні жолоби, схопивши їх за голову гачком або руками. Досвідчені користувачі використовують цілий ряд спеціалізованих інструментів, включаючи дошки, гачки та обмежувачі. Через ризик травмування птахів або людей, поводження з страусами має виконувати досвідчений працівник. Відмічено, що краще вигулювати птицю трьом працівникам, які по-одному тримають за крила, а інший штовхає ззаду. Страуси вимагають дуже хорошої огорожі, оскільки вони можуть просковзувати або проходити через огорожі з нанизаного дроту. Охарактеризовано заходи щодо недопущення травматизму працівників під час виконання робіт з догляду та вирощування птиці. Відмічено, що вирощування та розведення страусів – один із прибуткових бізнесів у сільському господарстві.

**Ключові слова:** страуси, історія та продукція страусівництва, агресивність птиці, безпека праці, заходи запобігання травматизму, гак, каптур

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## Особенности безопасного и здорового поведения работников со страусами

**Аннотация.** Проанализированы исторические аспекты, значение, особенности поведения страусов и безопасность труда работников страусовых ферм. Отмечено, что фермерское разведение страусов началось в мире в конце XIX века. Авторами исследуется отечественная и зарубежная практика страусоводства. Описан вклад отрасли в получении продукции страусоводства – кожи, мяса, яиц, перьев. Отмечена ценность продукции страусов по сравнению с другими видами животных. Отмечено, что при уходе, кормлении и наблюдении за страусами необходимо соблюдать установленные предупредительные меры. Страус может бить ногой снизу-вверх с силой 30 кг/см<sup>2</sup>. Одним ударом он легко может травмировать работника. Установлено, что достаточно агрессивными страусы бывают в репродуктивный период – они могут принять работника за соперника со всеми негативными последствиями. Отмечено, что при проведении работ со взрослыми страусами (перевод в другое место, загрузка

в транспортные средства, проведение лечебных и профилактических мероприятий и т.п.) для успокоения птицы применяют специальный крюк длиной не менее 2 м, с помощью которого его голову прижимают к земле, а потом на голову одевают светонепроницаемый капюшон. Страусов можно ловить в соответствующие желоба, схватив их за голову крючком или руками. Опытные пользователи используют целый ряд специализированных инструментов, включая доски, крючки и ограничители. Из-за риска травмировать птиц или людей, обращение с страусами должен выполнять опытный работник. Отмечено, что лучше выгуливать птицу трем работникам, которые по одному держат за крылья, а другой толкает сзади. Страусы требуют очень хорошего ограждения, поскольку они могут проскальзывать или проходить через ограждения с нанизанной проволоки. Охарактеризованы меры по недопущению травматизма работников при выполнении работ по уходу и выращиванию птицы. Отмечено, что выращивание и разведение

страусов – один из прибыльных бизнесов в сельском хозяйстве.

**Ключевые слова:** страусы, история и продукция страусоводства, агрессивность птицы, безопасность труда, мероприятия предотвращения травматизма, крючки, капюшоны

## References

- An ostrich farm in Ukraine: Exotics or a profitable business (2019). Site AGRICULTURE NEWS OF UKRAINE AND THE WORLD. Retrieved from <https://www.Fan-ostrich-farm-in-ukraine-exotics-or-a-profitable-business.html&usg=AOvVaw1ze16M5rFGceUXdsLVpCQN>. [in English].
- Brand, T.S., & Gous, R.M. (2006). Feeding ostriches. Feeding in Domestic Vertebrates. Wallingford, UK: Cabi Publishing, 136-155. [in English].
- Cooper, R.G., Horbańczuk, J.O., Villegas-Vizcaino, R., Kennou Sebei, S., Faki Mohammed, A.E., & Mahrose, K.M.A. (2009). Wild ostrich (*Struthio camelus*) ecology and physiology. *Tropical Animal Health and Production*, 42 (3), 363-373. [in English].
- Lebedev, N.A. (2018). Perspektivy razvedeniya strausov v Rossiyskoy Federatsii [Prospects for breeding ostriches in the Russian Federation]. *Selskoe hozyaystvo [Agriculture]*, 4, 12-16. [in Russian]
- Osterhoff, D.R. (1979). Ostrich farming in South Africa. *World Review of Animal Production*, 15, 19-30. [in English].
- Tawanda, Karombo. (2019). South African ostrich farmers try new strategies to stay afloat. Site The Poultry Site. Retrieved from <https://www.Fsouth-african-ostrich-farmers-try-new-strategies-to-stay-afloat&usg=AOvVaw3OTQsWY8xEU7ko4EQSYRn>. [in English].

## ЦЕ ЦІКАВО

### За пір'ям можна визначити кількість антибіотиків, що використовувалися при вирощуванні птиці



Експерти з Польського національного ветеринарного науково-дослідного інституту вважають метод аналізу пір'я як найкращу неінвазивну альтернативу взяттю

зразків тканин для спостереження за застосуванням доксицикліну на птахофабриках. На думку польських учених, вплив антибіотиків на птицю найкраще визначати під час тестування пір'я, оскільки антимікробні речовини можуть накопичуватися саме там. Антибактеріальні препарати зазвичай використовуються у птахівництві для лікування мікробних хвороб і для забезпечення здоров'я та благополуччя птиці. При інтенсивному веденні птахівництва ліки птиці часто вводять надмірно, що може призвести до розвитку стійкості у бактерій та їхнього потенційного поширення. У країнах ЄС застосування антибіотиків обов'яз-

ково контролюється для забезпечення безпечного виробництва продуктів харчування для споживачів. Програми моніторингу птиці перевіряють зразки матеріалів, зібраних після забою, такі як м'язи, печінка, шкіра та жир. Максимальні рівні залишків були в основному для антибіотиків, що використовуються при виробництві м'яса бройлерів. Посмертний аналіз вмісту антибіотиків у тому вигляді, в якому він проводиться нині, не відображає лікування протягом життя птиці. У результаті дедалі більше уваги приділяється пошуку альтернативних методів відбору проб тканин для визначення наслідків використан-