

# **OSTRICH FARMING**

## **OPPORTUNITIES IN PAKISTAN**

( A feasibility study)

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## OSTRICH INTRODUCTION:

Ostrich is a large flightless hardy bird of African origin. It belongs to running bird family. It has long neck and small head, with large eyes and short broad beak. It spreads small wings while running. The long powerful legs are used for defense. The feet have only two toes. It can survive in temperatures ranging from 2 degrees to 50 degrees Celsius. It can be reared on barren land and mainly consumes Lucerne and water. Male ostriches are black, with white wings and tail. The female is dull grayish brown. The females lay their yellowish white eggs together in a single large depression in the sand. The eggs weigh 1-2 kg. The male sits on them at night and the female incubates them by day. The ostrich has been farmed for around 150 years in South Africa, first for its feathers and recently for the hide and now for meat also. Ostrich farming is now an international industry, with South Africa still by far the major player.

Health consciousness in the modern world has led to diversified food habits. The tendency to go for low calorie foods has resulted in increased demand for ostrich meat and it ranks highest among health foods in Europe. The recognition of ostrich meat in terms of health value is attributed to "zero" percentage fat, low cholesterol and calories, rich in protein and iron. The unique tastes of ostrich meat have been developed into stir-fry and steak type meats. These meats have flooded the restaurants in Europe, Japan, Australia and China in a big way.

Besides meat, the ostrich produces high premium feathers, oil, luxury leather, and other by-products. The bleached dyed feathers are used as the raw material for fashion accessories, show business, brush industry and automobile accessories.

The first organized ostrich farm was established for feathers in 1863 in Karoo and Eastern Cape region of South Africa. Now the ostrich farms are found in Singapore, Hong Kong, Indonesia, Saudi Arabia, UAE, Israel, USA, England, France and in about 100 other countries.

The increased demand of ostrich over the past few years has given way to rearing birds under controlled systems. The intensive system became popular because of adoption of scientific technologies, reduced risk of diseases through improved bio security measures, genetic selection, nutritional innovations, health regimes, and extensive disease surveillance. Scientifically proven management practices resulted in low cost production and improvement in quality of ostrich products.

General Identification	Male	Female
Colour	Black	Grey
Height	8-9 Feet	7-8 Feet
Weight	150 Kg	130 Kg
Speed	70 Km/hr	70 Km/hr



### Breeding Specifications:

Social Life	1 Male for 2-3 Females
Duration of life	70 years
Breeding life	30 years
Puberty	Female 18 months to 2 years Male 2 to 2.5 years
Laying	60 Eggs Average Per Hen Per Breeding Year
Eggs per annum	60+ consistently
Egg Weight	1.5 Kg
Fertility	>95%
Hatchability	>95%
Survival	>95%
Mortality	Negligible after 3 months
Food	Balanced Grain Ration and Fresh Fodder
Growth	1 Foot Per Month During the 1st 6 Months
Feed/Live Weight Conversion - 9mths	<3.5:1
Feed/Live Weight Conversion - 12mths	<4:1
Slaughtering Age	10- 12 months
Meat Output	Net Carcass is 50% of Live Weight and 35-40 % Kg Pure Red Meat
Meat Yield – 9 months	>40kgs
Meat Yield – 12 months	>50kgs
Skin Output	14 sq feet

### Commercial Ostrich Farming:

Today, ostrich farms are considered to be among the most profitable agricultural projects. They are often referred to as "the farms of the future" because of the large variety of possible products and their expected high profit potential. Ostriches are raised commercially for their meat, hide and feathers. Currently commercial farming is going on in about 100 countries in all continents and regions. Some countries where this is done with official backing are: Saudi Arabia, China, Turkey, Iran, Egypt, Jordan, Israel, and many African countries.

Pakistan Ostrich Company is the pioneer of commercial farming in Pakistan. Initial experiments confirm the hypothesis that Pakistan is one of the most suitable places to undertake commercial farming. It has cheap labor, a suitable climate, inexpensive fodder, low business cost and a population of businessman/farmers/investors who are willing to enter into this new venture. The sector has seen very rapid growth and bird population is growing day by day.

### Environmentally Friendly Ostrich Farming:

Farming ostriches is environmentally friendly; steroid, antibiotic, hormone and forced-feeding free. Ostriches are free roaming livestock and feed off all natural Ostrich feed. Ostriches require little or no handling once they reach 4 or 5 months of age and are recognized as a genuine environmentally friendly animal.



## PRODUCTS UTILITIES:

Products	Characteristics	Outlets
Leather	Pearl or grain Suppleness, Rusticity	Luxury -Leather Goods Baggage, Brief Cases, High Fashion Shoes
Meat	Red, Tender, Tasty, Dietic	Roasted, Grilled, like young beef
Feather Tourism	Suppleness, Anti-Static	Decoration, Brushes, Festivals Show-Farm, Natural or Painted Egg Shells
Infertile Eggs	Light Yellow	Natural ,Carved ,Painted

## INCREDIBLE FEED TO WEIGHT GAIN RATIO:

Farmed animals such as cattle and swine eat steroid-, antibiotic- and hormone-laced feed and they eat an incredible amount of it. Cattle and swine can eat in excess of 20:1 in their feed-to-weight ratio. This means that they have to eat 20 pounds of feed to add 1 pound of weight.

The overall feed-to-weight ratio gain of an ostrich is 2:1 during the first few months of their lives and this climbs to only 3.5:1 during their normal development at 9 months or so. The benefits to you are considerable: less maintenance, less feed and of course less animal waste! It is indeed "the future animal". The overall feed to weight gain ratio of cattle is 7:1 and that of sheep is 5:1.

## MEAT:

In today's health conscious society Ostrich - the Healthy Red Meat is a great red meat alternative and should be added to everyone's menu.

Some characteristics are:

- Recommended by the American Heart Association
- Ostrich Meat is a Red Meat
- Less Calories
- Less Cholesterol
- Less Fat than Skinless Chicken or Turkey
- 99% Fat Free
- High in Protein
- Virtually no shrinkage when cooked
- Easy to prepare

An ideal permanent substitute for Beef, Lamb, Chicken and Turkey

Since this "red" meat has been proven to be quite healthier than traditional red meat, many health conscious consumers throughout the world, who are worried about the risk of heart attacks, high blood pressure, and heart disease, would be interested in the purchasing of ostrich meat.



## MEAT SPECIFICATIONS:

Meat 85 Grams	Calories	Fat Grams	Cholesterol mg
Beef ( Steak)	240	15	77
Chicken	140	3	73
Turkey	135	3	59
Ostrich	97	1.7	58

Ostriches produce red meat that is very similar in taste and texture to veal and beef depending on the age at which they are slaughtered. The study indicates quite clearly that ostrich meat is far better healthy meat as it contains far less fat, and particularly less cholesterol. With greater consumer awareness about risks associated with high cholesterol levels in the blood demand for ostrich meat is growing. When an ostrich is slaughtered, very little is wasted in the slaughtering process. The latest statistics show that current ostrich meat production is not enough to meet the increasing demand, whether in Europe, North America or Japan. It is expected that during the next decade, ostrich meat may gradually replace traditional types of meat. It has the potential of doing so as ostrich has the best feed-to-weight ratio gain of any land animal in the world.

Ostrich-based dishes are a popular Menu item in thousand of restaurants in Japan, Germany, Singapore and Far Eastern countries, USA and many EU countries.

## Ostrich Preparation Suggestions:

Ostrich meat is extremely versatile. It can be prepared in many different ways. Ostrich can be grilled, broiled, pan seared, stewed, fried, roasted, braised, or smoked. It can be served hot or cold. It can be used as an appetizer or entree. It is best cooked rare to medium-rare, due to its extremely lean fat content of only 2 grams of fat per 3 oz portion. Ostrich meat is very lean and high in moisture content. When cooking ostrich meat, use your favorite recipes for extra lean meat. Overcooking ostrich meat will dry it out and reduce its tenderness. Cooking only to medium or medium-rare produces the best results.

Frozen vacuum packaged ostrich meat maintains high quality for ninety days. Fresh vacuum packaged subprimals may be stored safely at refrigerated temperatures for up to fourteen days. Fresh vacuum packaged final cuts such as medallions or steaks have a three-day shelf life.

Thaw ostrich meat slowly under refrigeration to ensure top quality and maximize shelf life.

Due to the ostrich's ideal pH balance, the meat does not attract harmful bacteria like E-coli or salmonella, unlike chicken and other meats.



## OSTRICH PREPARATION TIPS:

Ostrich meat can be prepared in many ways and in many ways and with a variety of cooking methods. It can be grilled, smoked, stewed, braised, fried, roasted or skewered, served hot or cold, by itself or with a sauce and as hors d'oeuvres, canapes, appetizers, entrees or main courses. Best served rare - medium rare.

Method	Portion	Temperature	Time
Bake	4 oz.	375 F.	15 mins.
Barbecue	4 oz.	Medium	10 mins.
Boil	1-2 lbs.	High	20 mins.
Braise	2 oz.	Low	20 mins.
Broil/Grill	3/4"	High	10-13 mins.
Fry	2 oz.	425 F.	2-4 mins.
Parboil	1-2 lbs.	High	5 mins.
Roast	4-6 lbs.	325 F.	13-15 mins./lb.
Sautee	2 oz.	425 F.	1 min./side
Sear	4 oz.	High	30-45 sec.
Skewer	1" cubes	High	6-8 mins.
Soup	- -	Simmer	30 mins.

## Hide:

Ostrich skin (hide) is considered to be one of the most luxurious leathers, and some even place it on a par with crocodile and snake skin. Ostrich leather is thick, durable and extremely soft and can be manufactured into a variety of products, such as shoes, bags, purses and jackets. It is the most expensive part of an ostrich and one value-added hide can fetch upto 80% of total revenue earned from a single ostrich. Global ostrich-leather industry need is 20,000 ostrich hides per year.

## Feathers:

Ostrich feathers are used for cleaning fine machinery and equipment as well as for decorations and in the fashion industry. The quality of feathers produced from ostriches raised in Europe and North America differs from those produced in Africa. The best feathers come from the more arid regions of the world.

## Ostrich Oil:

The wonderful oil of ostrich comes from the fat of ostrich. There is increasing anecdotal evidence of the benefits of their wonderful oil in providing relief from certain skin irritations and other discomforts such as:

\* Sunburn \* Blisters \* Dry Skin \* Psoriasis \* Skin Cuts \* Bed Sores \* Skin Burns \* Chapped Lips\* Canker Sores\* Sore Muscles\* Skin Abrasions \* Radiation Burn Relief. As production increases, it will be possible to verify this evidence with full scientific studies.



## Other Usage:

In addition to their meat, skin and feathers, ostriches are being explored for medical and medicinal purposes. The tendons of the ostrich leg are used to replace torn tendons in humans as they are long and strong enough for the human leg, and recent research in ophthalmology points to the possible use of ostrich eyes in cornea transplants. Ostriches are able to see clearly for over 12 km, and the cornea is large enough to be trimmed down to fit the human eye. Furthermore, the ostrich brain produces a substance that is being studied for the treatment of Alzheimer's disease and other types of dementia. Ostrich nails are used in impotency medicine.

## COMPARISON OF BEEF CATTLE V/S OSTRICH:

The comparative economics of ostrich v/s beef cattle indicates that ostrich farming has an edge over cattle farming in terms of high returns on investments. Added to the high returns the operational advantages found are:

- The bird can be reared in paddock along with sheep, goat and cattle
- The birds need no dipping, drenching, milking and shearing.
- The adaptability of the bird is equally high on annual and perennial pastures.

Particulars	Beef Cattle	Ostrich
Land	30,000 sq feet per pair	4800 feet per pair
Gestation	280 days	42 days
Offspring per year	1	30
Meat Production Time	10 months	10 months
Meat Production Per Annum	120Kg	1350 Kg
No of Hides	1	30
Cost of Feed Per Day	Rs.40-60	Rs.25
Breeding years	10-11	40-45
Meat Price Per Kg	Rs. 200	\$ 15 Or Rs.1200 (current)

## PRODUCTION SYSTEM:

Is based on the basis of 2 different rearing techniques: Poultry and Cow Farming.

Production is a semi-intensive farming, indoors and outdoors (building and free space)

## PRODUCTION CYCLE (4 STEPS)

	Age	Housing
Starters(Chicks)	1 day to 3 months	Poultry Building-Adjoining Free Space
Fattening Ostriches	4-12 months	Cow or Sheep Building and Adjoining Free Space
Selection For Breeding	12-24months	Free Space, Building is Optional
Breeders	+ 24 Months	2-3 Kanals Land for one trio  ( Building is Optional )



The general practice is one male for two females (trio) for an average output of 60 eggs per female and 120 eggs for breeding season, and with good rearing techniques one can get 75 slaughter birds (10 months period).

### Space Requirements (Trio)

Age	Indoor	Outdoor
1-21 Days	Building 2 sq Feet/Bird	According to the Climate 10-15 Sq Feet /Bird
22-90 Days	3 sq Feet Per Bird	30 Sq Feet Per Bird Min 150 Sq Feet
90-300 Days	Open Shelter 3 sq feet Per Bird	300 Sq Feet Per Bird Min 2000 Sq Feet
Breeder/Selection	Only Open Space	1500-2000 Sq Feet/Bird
12 Months and Older	Open Shelter 15 Sq Feet Per Bird	Min space 2000 Sq Feet

The open shelter should offer protection on 3 sides with a door on the 4th side.

The opening should be minimum 4.5 feet wide. The shelter will be minimum 8 feet high.

The fence should be minimum 4.5 feet high for the birds and breeders (according to the farm and objectives) with a post for every 12 feet.

### SUGGESTED DIET:

Calculated Analysis	Starter	Grower	Layer
	0-8 wks	9 wks-17 months	18 months+
% Protein	18.0	18.0	24.5
% Crude Fat	3.0	3.5	3.5
% Calcium	1.35	1.35	2.40
% Available Phosphate	0.72	0.64	0.70
% Crude Fiber	6.0	11.0	11.0
Salt (NaCl)	0.90	0.50	0.60

### Water:

Your birds will need access to water 24 hours a day. In a cold climate, maintain a constant water temperature of 20 degrees centigrade for all groups of birds. Ostriches like to scoop and as a result of the feed in their beaks, the water trough gets dirty quickly and therefore needs cleaning regularly.

Birds need constant access to water as this will effect their consumption of dry feed. Water too cold or too hot will effect their water consumption and often result in reduced feed intake.

### Labor:

Adult birds should be fed twice a day, once in the morning, once in mid to late afternoon. Chicks should be attended at least 5 times a day. Another labor intensive task is the cleaning of the chick pen to prevent them





eating their own dirt (dependent upon stocking density, surface and age of chicks). Besides the farming tasks on hand, the majority of farming is supervision. Prevention is better than cure, and solving problematic areas before they occur can save time and expense. Constant supervision will help, but generally the breeders are best left to themselves except for feeding and egg collection.

It is possible to move a bird with one person, but with two or more it is so much easier and less stressful.

**COST - CHICK TO BREEDER FOR A TRIO** (one male 2 females)

Cost of One Trio Chick (4 weeks)	Rs. 36,000
Cost of One Trio Chick (6-8 weeks)	Rs. 45,000
Feed Cost First Year for three chicks(Rural areas)	Rs. 10,000
Feed Cost First Year for three chicks(Urban areas)	Rs. 15,000
2nd year for Three birds (Rural Areas)	Rs. 18,000
2nd year for Three birds (Urban Areas)	Rs. 24,000
Related expenses	Rs. 16,000
Expected Income per trio per year	Rs. 200,000

**Fancy Bird Price List**

Price in Euro	Bird Age (Pair)
€ 225	06 <b>1</b> month
€ 315	06 <b>2</b> months
€ 445	06 <b>3</b> months
€ 535	06 <b>4</b> months
€ 625	06 <b>5</b> months



## A SWOT Analysis

### Strengths

- ✎ Almost Virgin Market in Pakistan
- ✎ Potential for excellent product quality across a range of products
- ✎ Most Pakistanis like Meat including farming based chicken
- ✎ New and innovative investment opportunity for investors
- ✎ Potential for high production levels of breeder birds
- ✎ Potential for good food conversion efficiency in slaughter birds
- ✎ Longevity of breeder birds
- ✎ Long-term commitment of producers to the future of the farmed ostrich
- ✎ Opportunity to become leading Ostrich exporter of the world
- ✎ Highest immunity level in birds
- ✎ Environment friendly farming

### Weaknesses

- ✎ Lack of consumer awareness of ostrich meat and leather
- ✎ Lack of ostrich farming knowledge
- ✎ Lack of scientific research
- ✎ Limited supply of quality Breeders/chicks
- ✎ Low confidence level of investors
- ✎ Negligible government support

### Opportunities

- ✎ Large scale Market size
- ✎ Attractive investment opportunity for investors
- ✎ Established leather processing and manufacturing market in Pakistan
- ✎ Low feed cost per ostrich
- ✎ Best feed-to-weight ratio
- ✎ Low labor cost

### Threats

- ✎ Mortality in chicks (during first three months)
- ✎ Lack of professionalism



## CONCLUSION:

The environmental benefits, the excellent feed-to-weight ratio gains and the breeding proliferation of ostriches make commercial ostrich farming worthy of investigation.

We also know that ostrich handling after 4 - 5 months is very low and a good farm manager can easily take care of a farm of 100 breeding ostriches and hundreds of offspring.

From a consumer and marketing point of view, people are eating a much healthier diet and are turning to ostrich meat as a beef/mutton alternative. Production of low fat and low cholesterol meat will allow consumers to have energy protein with out fear of heart and other health problems. The demand for luxurious and easily recognized ostrich leather continues. The cosmetic industry continues its never ending search for eternal youth and exotic ostrich oil is beginning to receive its long overdue recognition. And, of course, ostrich feathers are a permanent fixture in the world's carnivals, Mardi Grass and festivals everywhere. After the success of poultry industry during last two decades ostrich farming can open new vistas for development in Pakistan, very soon we can be the world leader in ostrich farming.

In short, Farming ostriches can certainly be financially rewarding.

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