WORLD OSTRICH ASSOCIATION

OSTRICH BENCHMARK PERFORMANCE TARGETS

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Introduction

Benchmark Figures are an important management tool in any agriculture sector.

Mainstream production specie has decades of data and millions of production animals every year. The leading companies improve their performance year on year through improving management techniques and technology. Over the past couple of decades, they have not only succeeded in dramatically improving production, they have also succeeded in reducing their costs significantly.

No meaningful Ostrich production records exist, but there is now sufficient experience and knowledge to be able to establish achievable target production figures.

Improvements in performance come as a result of a number of factors working together – Nutrition, Feed Management, Farm Management and Genetics. A failure in any one of these sectors will impact on performance and profitability.

When these factors are correctly in place steady improvements will be seen year on year. These benchmark measurements are achievable goals when the correct management techniques are employed. In time a centralised collection system can be developed, as is now happening amongst members of other agriculture industries, whereby members can provide their data. The database processes that data and publishes the best, average and worst figures. The benefit of this system is enabling producers to measure their performance against industry performance to help improve profitability.

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Definitions

Season:	The 12 month laying period: Northern Hemisphere: January to December Southern Hemisphere: July to June
Egg Production:	Includes all whole eggs laid by hen, including those that are chipped, broken, misshaped or chalky in a 12 month laying season.
Eggs Set:	Eggs laid that are placed in the incubator in a 12 month season. Can be expressed as a percentage of total production.
Egg Fertility:	The number of eggs that are fertile expressed as a percentage of the total number of eggs set in an incubator in a 12 month laying season.
Egg Hatchability:	The number of eggs that are successfully hatched into chicks, with or without assistance, expressed as a percentage of the stated base. i.e. eggs laid, eggs set or eggs fertile. The only meaningful figure is percentage of Eggs Set.
Day Old Chick:	The Total number of chicks that have survived to 1 day of age. Includes all live chicks both defective and non-defective
Yearling:	12 Months of Age
Chick Mortality:	Percentage of chicks that die for any reason in the stated period, including humanely destroyed as a result of defective at hatch.
Liveweight:	Gross weight alive. The benchmark figures are Liveweight immediately prior to slaughter.
Killout Weight:	Killout Weight is the Carcass Weight of the bird.
Carcass Weight/Hanging Carcass Weight/Rail Weight	Hanging Carcass Weight, Rail Weight, Killout Weight and Carcass Weight are all terms that mean the same.
Killout Percentage:	Killout percentage is the Carcass Weight of the bird expressed as a percentage of the Total Live Weight of the bird. Please see “Dressout Percentage” below for the Carcass Weight Standard.

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Dressout Percentage:	Dressout percentage is the Boneless Meat Weight of the bird expressed as a percentage of the Total Carcass Weight of the bird using the Standards of Boneless Meat Weight & Carcass Weight.
Carcass Standard:	All fat trimmed off the carcass as reasonably as possible, Neck no longer than 6 inches (15 cm) in length, leg bones sawed no longer than 6 inches (15 cm) below the hock, rib cage, wings and tail left on carcass, breast plate removed.[1]
Hot Carcass	Hot Carcass weight is the weight of the carcass prior to chilling. The benchmark figures assume hot carcass weight.
Cold Carcass	Cold Carcass weight is the weight of the chilled carcass. Carcass can lose approx. 1% of weight of meat per day through drip loss/evaporation.
Boneless Meat/Deboned Meat:	Deboned Meat Weight is the total weight of the Drum Muscle assembly without the leg bone, the Thigh muscle assembly without the Thigh bone and OS1060 muscle.
Boneless Meat Standard:	Silver/Blue skin left on the meat, Major Tendon ends removed. Not included in the weight are: Rib Cage meat, Neck meat, Organ meat or Fat.
Fat Pan:	The Fat Pan is located on the belly of the bird between the legs and towards the rear of the bird.
Fat Pan Thickness Standard:	The thickness of the Fat Pan is measured vertically from a cut cross-section of the Fat Pan nearest the approximate centre of the Fat Pan.
Feed Conversion Ratio:	Feed conversion ratio (FCR) is calculated from the number of kilos of feed that are used to produce one kilo of unit over a given period. Unit can be Liveweight, Dressing Weight, Boneless Meat etc.

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Breeder Bird Benchmark Performance Targets

BREEDER BIRDS	5yrs	8yrs	10yrs
Key Measurements of Performance			
Slaughter Birds/Yearlings per hen – Number	>30	>60	>80
Meat Production per hen per season – Kilograms	>1200kg	>2500kg	>4000kg
Breeder Feed Cost per Slaughter/Yearling produced	<US$14	<US$7	<US$5
Important Measurements of Performance			
Eggs Laid per hen - Number	>65	>70	>80
Eggs Set - %	>95%	>95%	>95%
Eggs Fertile - %	>90%	>95%	>95%
Hatched - % of Eggs Set	>95%	>95%	>95%
Day Old chicks – Number pen Hen	>55	>60	>67
Chick Mortality to 21 days - % Day Old Chicks	<7%	<4%	<2%
Chick Mortality to 13 weeks - % Day Old Chicks	<2%	<1%	<1%
Chick Mortality Hatch to Slaughter/Yearling - % Day Old Chicks	<10%	<7%	<5%
Eggs Laid per Slaughter Bird/Yearling produced	<1.3	<1.2	<1.18

Breeder Bird – Comments

1. Key Measurements of Performance: These measurements are key indicators to profitability

2. Slaughter Bird/Yearling/Hen: The numbers of live chicks in a season that survive to slaughter or go onto become breeders. Eggs are only of value when fertile and producing healthy chicks able to convert feed efficiently.

3. Meat Production per Hen: 40 slaughter birds/hen producing 50 kilos of boneless meat will produce more boneless meat than 60 chicks per hen producing 30 kilos of boneless meat.

4. Breeder Feed Cost per Slaughter/Yearling: Breeder birds consume a fixed amount of feed in year and this is the major cost.
   The production value of feed influences number of eggs, the fertility and hatchability of those eggs, contributes to survivability and growth rate of progeny.
   The more chicks per breeder group the lower the cost to produce a chick.

5. Important Measurements of Performance: These are important measurements of performance and can highlight an area that may be particularly weak and contributing to failure to meet the Key Measurement targets.

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6.	Egg Laid Per Hen (number):	The total number of eggs laid per hen. See Number 2 above.
7.	Eggs set %:	Eggs are not set for a number of reasons, such as: Broken, Poor Shell Quality, Early or late Season (not viable numbers), Too small etc. The Database should be able to highlight the reasons for not setting
8.	Fertile Percentage:	Percentage of Eggs Set that are Fertile
9.	Hatched Percentage of Eggs Set:	Percentage of Eggs Set that Hatch
10.	Day Old Chicks – Number:	Chicks survived to one day of age
11.	Chick Mortality to 21 Days:	Currently the period of highest mortality and directly influenced by quality of chick at hatch.
12.	Chick Mortality to 13 Weeks:	The most vulnerable rearing period
13.	Chick Mortality from Day old to Slaughter or Yearling:	Total mortality
14.	Eggs per slaughter Bird/Yearling:	The average number of eggs laid to produce a slaughter or Yearling.

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Slaughter Bird Benchmark Targets

SLAUGHTER BIRD PRODUCTION	5yrs	10yrs	10yrs
Key Measurements of Performance			
Days to Slaughter	**280**	**280**	**210**
Feed Conversion – Liveweight	3.7	3.03	2.17
Feed Conversion – Boneless Meat	10.6	8.4	6.5
Total Boneless Meat	40kg	50kg	40kg
Feed Costs to Slaughter	US$140	US$140	US$86
Feed Costs per Kilo Boneless Meat	US$3.5	US$3.00	US$2.15
Carcass Grade	Prime	Prime	Prime
Important Measurements of Performance			
Liveweight – Kilograms	>115kg	>135kg	>115kg
Killout Weight – Kilograms	>60	>70	>60
Killout Percentage	>53%	>55%	>50%
Fat Pan Thickness – cm	2.5 – 5.0cm	2.5 – 5.0cm	2.5-5.0cm
Fat Weight	+/- 6% Liveweight	+/- 6% Liveweight	+/- 6% Liveweight
Fat Colour	White	White	White

Slaughter Bird Comments

1. Key Measurements: These measurements are key indicators to profitability

2. Days to Slaughter: Number of Days to Slaughter. Earlier slaughter reduces costs but limits potential meat yield. Markets are currently looking for larger sized muscles.

3. Feed Conversion Ratio – Liveweight : Kilos of all feed consumed from Day Old to slaughter to produce 1 kilogram of Liveweight.

4. Feed Conversion – Boneless Meat: Kilos of all feed consumed from Day Old to Slaughter to produce 1 kilogram of boneless meat.

5. Total Boneless meat: Total Boneless Meat. Note 2nd column is same time to slaughter as column 1, but increased boneless meat.[2] 3rd column is time taken to produce 5yr target meat yields 70 Days earlier.

6. Feed Costs to Slaughter: Total cost of all feed, including grazed feed (when grazing), including any supplementary vitamins, licks etc.[3]

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7.	Grade	Grade according to WOA Meat Grading System[4]
8.	Important Measurements of Performance:	These are important measurements of performance and can highlight an area that may be particularly weak.
9.	Liveweight :	Weight at Slaughter immediately before stunning and bleeding.
10.	Killout Weight Kilograms:	Also known as Carcass weight. There are a number of different definitions of carcass. When making comparisons ensure comparing like with like.
11.	Killout weight percentage:	Carcass weight expressed as a percentage of Liveweight. As in point 10 – ensure comparing like with like as there are a number of different ways to define a carcass.
12.	Fat Pan thickness – cm	The Fat Pan is a key indicator to bird health – too much fat costs the producer unnecessary dollars. Too little also costs the producer dollars in lost meat revenue.[5]
13.	Fat Pan Weight	A further measurement
14.	Fat Colour	A key indicator to bird health and meat quality.

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Meat Muscle Benchmark Targets – 280 Days

US Muscle Name and International Number	5 Year Target	10 Year Target
Fan #OS1046	2340 grams	2925 grams
Oyster #OS1045	1115 grams	1394 grams
Outside Strip #OS1036	635 grams	794 grams
Inside Strip #OS1050	820 grams	1025 grams
Tenderloin #OS1060	900 grams	1125 grams
Top Loin #OS1047	660 grams	825 grams
Round #OS1035	2090 grams	2613 grams
Outside Drum #OS1012	1565 grams	1956 grams
Inside Drum #OS1011	900 grams	1125 grams
Mid Drum #OS1013	1905 grams	2381 grams

Muscle Weight Comments

The targets set for Year 5 were being achieved in the mid 1990's in the United States, thus proving them to be very achievable targets.

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[1] Processing units vary in method of dressing a carcass. These benchmark figures are based on these standards.
[2] Note weights referenced have been recorded and therefore achievable. At this time current industry average is only 25kgs in +365 days
[3] To achieve a true value it is essential to include: all feed fed that is either home mixed or purchased, cost of producing grazing material, any vitamin/mineral additives to water or feed, vitamin injections, mineral licks – in fact anything, except water, that they consume or is injected.
[4] http://www.world-ostrich.org/grading.htm
[5] With a valuable market for fat, it is possible to formulate for with good quality meat production and additional quality fat to service the fat market.

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