

Introduction to commercial duck farming

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This Primefact has been produced for prospective farmers, investors and those interested in the commercial duck meat industry.

It provides an overview of: the duck industry; current production features; financial issues and critical planning and development considerations. This includes managing risks to bird welfare, the environment and biosecurity.

Introduction

Commercial duck meat farms are intensive operations similar to chicken meat farms. Ducks are raised in sheds which vary from open-sided naturally ventilated sheds to fully enclosed climate controlled tunnel ventilated houses. Commercial duck meat production is therefore a full-time specialised business requiring significant investment in both time and money.

Whilst the duck meat industry is quite small in comparison to chicken meat production, it is expanding rapidly at a growth rate of 10-15% annually. The Australian industry processes 8 million birds annually and is worth an estimated \$100 million.¹

This growth, together with increasing domestic and global demand makes duck meat farming an attractive option for those considering entry into this industry.

Breeds used for meat production

The major breeds available for meat production in Australia are Pekin, Muscovy, Aylesbury and Rouen and crosses of these breeds. The Pekin duck (*Anas Domesticus*) is the predominant breed used for meat production in Australia. Commercial

strains of Pekin duck are bred in the United Kingdom and France.



Figure 1, Pekin ducks are the most popular breed for commercial meat and egg production. Photo: NSW DPI

Did you know? Pekin duck is often confused with Peking duck. Pekin duck is a breed of duck whereas Peking duck is a famous duck dish from Beijing that has been prepared since the imperial era, and is considered one of China's national foods.

Size of commercial duck farms

The size of commercial farms is typically measured by the number of birds reared at any one time.

Commercial operations vary in size from relatively small farms of 6,000 ducks per batch to large operations with 50,000 to 100,000 ducks per batch. Most current commercial duck farms house between 10,000 to 50,000 birds at a time.

¹ Commercial Duck Production for Bird Welfare, Environmental Benefits and Efficiency, RIRDC 2010

Critical issues when considering commercial duck farming

1. Development Costs

Similar to chicken meat operations, the capital investment and development costs for duck farming depends on a range of factors, including:

- Land prices;
- Size of the enterprise. This is determined by the number, size and type of sheds (open sided and naturally ventilated or fully enclosed tunnel ventilated sheds);
- Existing infrastructure and services (electricity, gas, water and road/transport services) and any upgrade costs;
- Local council development application requirements. The costs of assessing the potential environmental impacts and preparing a development application will depend on the scale of the operation and the level of constraints for the proposed site. For instance on a relatively large rural property there may be no need to conduct detailed noise assessments;
- Environmental engineering costs associated with constructing the sheds, providing access for trucks, a water supply and other infrastructure. For instance the amount of cut and fill required to level the shed site will be more expensive on a sloping site.

For these reasons it is difficult to provide an accurate indication of enterprise establishment costs. If no major site constraints occur and depending on the size of the enterprise it may require an investment of 2 to 3.5 million dollars.

The potential income will also vary depending on the size of the operation, the contract price negotiated with the processor and the number of batches reared per year. A typical family run duck farming enterprise, housing 10 - 50,000 birds would produce a total of 60 - 300,000 birds a year over 6 batches.

2. Seek expert legal, financial and business advice

It is essential to complete a feasibility study to determine if the enterprise is for you.

In most instances, duck meat farmers operate under a contract to a processing company. The contract will usually stipulate the price per kg/liveweight of the birds, the contract term and conditions under which the birds must be raised. Legal opinion on contract security is advisable to

assure that the payback period for the investment is possible.

Upfront capital costs may exceed several million dollars. A financial adviser should be consulted to assist in predicting a pay back period for the investment.

It's also advisable to develop an Environmental Management Plan and Biosecurity Plan for the enterprise to support your development application. This ensures upfront that you can manage the range of potential risks and issues associated with the development.

3. Planning the development

Commercial duck farming is usually considered an Intensive Livestock Agricultural Enterprise. Hence you will be required to prepare and submit a Development Application (DA) to your local council for approval to establish, expand or modify a commercial duck meat enterprise. Before beginning a plan:

- Familiarise yourself with industry guidelines
- Contact your local council to identify areas suitable for intensive agricultural developments and to confirm that a DA is required and what needs to be addressed in the DA

This includes identifying what provisions of the Local Environmental Plans and State Environmental Planning Policies apply. What level of environmental assessment is required? What the key issues are? How long will it take to obtain approval? What are the indicative costs of lodging a Development Application?

- Consider how your development will affect the environment and neighbours and what measures you will take to minimise these impacts
- Find out if other legislation affects your proposed development and what other permits or licences are required? For instance do you need to clear native vegetation or remnant trees, or do you need permits to access water?

It is necessary to check if changing the design or location might avoid such additional requirements

- It is highly advisable to engage the services of a suitably qualified and experienced consultant. A well-prepared application will save both time and money and will reduce the risk of conflict and objections from both council and the community.

For comprehensive information on preparing development applications refer to the following publications:

- Preparing a development application for intensive agriculture in NSW available at www.dpi.nsw.gov.au/environment/landuse-planning/agriculture/dev-app-intensive
- Best Practice Management for Meat Chicken Production in NSW (Manual 1 – Site Selection and Development) available at www.dpi.nsw.gov.au/agriculture/livestock/poultry/development

Whilst most of the publications referenced in this factsheet refer to chicken meat enterprises, the principles associated with potential environmental impacts and management options are relevant to the duck meat industry.

4. Siting and design considerations

The establishment of a duck meat farm is a substantial long-term investment, making it critical to ensure that an appropriate development locality and site is chosen.

Appropriate siting is the most cost-effective way of dealing with environmental performance issues such as odour, dust, noise and protection of waters. By addressing these issues at the planning stage, ongoing operational costs and management issues will be significantly reduced.

Critical issues to consider include:

- Locality – proximity to processing plants, feed mills, clean litter supplies, labour and services;
- Size – the property must be of sufficient size to accommodate all the facilities required to support the planned operation. Also consider possible future expansion needs;
- Odour, dust and noise impacts – addressing such impacts are the most common challenges faced by commercial duck meat farmers. The property should be large enough to provide for adequate setbacks (buffer distances) to minimise the likelihood of offensive odour, dust and noise impacts on neighbouring properties;
- Biosecurity – particularly separation distances from other poultry enterprises to prevent the spread of disease;
- Available suitable water supplies, for bird drinking needs, cleaning the sheds and for fighting bushfires if relevant;
- Site constraints such as topography, water flows, native vegetation and bushfire hazard risk reduction requirements; and
- Service corridors and supply including: 3-phase power, water pipelines and storage, and road access for the size and type of vehicles involved.

For comprehensive information on siting and design considerations refer to the following publications:

- [Best Practice Management for Meat Chicken Production in NSW \(Manual 1 – Site Selection and Development\)](#)
- [Better Site Selection for Meat Poultry Developments](#)

Copies of these publications are available from NSW DPI and are also available at www.dpi.nsw.gov.au

5. Managing environmental impacts

Most intensive agricultural enterprises are associated with potential environmental impacts. For duck farming potential environmental impacts are commonly associated with:

- air quality (odour & dust)
- noise
- catchment protection (eg nutrient run off, erosion or storm water flows)
- disposal of litter
- disposal of dead birds

Development Applications will be required to demonstrate how these impacts will be managed to comply with minimum acceptable limits. A range of publications and guides are available to plan and manage environmental. These include:

- [National Environmental Management System for the Meat Chicken Industry](#)
- [Best Practice Management for Meat Chicken Production in NSW \(Manual 1 – Site Selection and Development\)](#)
- [Odour Management Options for Meat Chicken Farms](#)
- [Better Site Selection for Meat Poultry Developments](#)

Refer to the resources section at the end of this factsheet for information on where to find these publications.

6. Animal Welfare

There are no mandatory skills required as a prerequisite for farming ducks. However, animal welfare is a critical component. Good stockmanship and an affinity for livestock will provide both productivity and animal welfare outcomes.

Stockmanship is a concept of handling and operating around livestock that produces calm and highly responsive animals and does not produce long lasting anxiety, stress, or panic.

Typical livestock nurturing duties include the following:

- providing fresh litter in sheds and removing spent litter;
- providing feed and water;
- monitoring shed temperature and humidity;
- monitoring feed consumption and growth rates;
- capturing and handling birds with confidence and patience;
- washing down equipment and maintaining hygiene standards;
- cleaning sheds after the removal of birds by mechanical or manual means;
- collecting, counting and recording mortalities;
- monitoring health and welfare; and
- working weekends and long hours

Prospective duck farmers should also be aware of the [Model Code of Practice for the Welfare of Animals \(Domestic Poultry, 4th edition\)](#) which is a set of guidelines outlining minimum animal welfare standards and obligations in NSW.

It's also important to determine if duck farming matches you and your family's lifestyle. Raising commercial ducks is a 24/7 operation whilst the ducks are being reared. There may be a short break between batches of 10 to 14 days, but during that time sheds will need to be cleaned and prepared for a new batch of ducklings.

A useful way to begin to develop your skills and to 'test the water' to get a feeling for the tasks and skills you may need to become a successful duck farmer would be to complete a short course in poultry raising and husbandry. PROfarm offer short courses in small scale poultry production. For more information go to:

<http://www.dpi.nsw.gov.au/agriculture/profarm>



Figure 2, Inside a typical commercial duck shed. Photo courtesy of P Haddad, Pepe's Ducks Pty Ltd.

Contracts and growing fees

Ducks are typically grown under a contract between a processing company and individual farmers (also called growers). These agreements operate in a similar way to a franchise agreement.

Growers purchase day old ducklings from the processing company under contract. The grower also purchases feed from a mill designated by the processing company.

The grower is responsible for complying with legislative requirements in relation to the operation of the farm; and for any environmental and welfare issues.

When ready for slaughter the ducks are sold back to the processing company. Growers are paid per kilogram of liveweight.

The processing company delivers the day old ducklings to the farms and collects the birds when they are ready for slaughter.

Grower manuals supplied by the processor outline the standard operating procedures for rearing ducks to slaughter weight. Each grower is also supported by a company service person that provides on farm assistance to the grower throughout the rearing and growing period.

Farm hygiene and biosecurity

Biosecurity refers to the measures taken to prevent, or control the introduction and spread of disease causing organisms to a flock.

The introduction of exotic diseases is one of the greatest threats faced by the commercial chicken and duck industries. For this reason stringent biosecurity control measures have been established to protect the industry from disease outbreaks.

For new duck meat farmers it is essential to become familiar with the [Farm Biosecurity Manual for the Duck Meat Industry](#). This manual provides prospective duck farmers with a set of minimum biosecurity guidelines which must be complied with. This also assist them with incorporating biosecurity standards and facility specifications when designing and developing infrastructure for their new business.

For a copy of the *Farm Biosecurity Manual for the Duck Meat Industry* go to:

<http://www.farmbiosecurity.com.au/>

Production cycle

Producing duck meat involves a range of stages and activities. The following diagram (figure 3) illustrates the various stages of producing duck

meat from importation of fertile eggs through to the processing of carcasses for human consumption.

The tan coloured box indicates the farmer/grower stage of the production cycle. Farmers rear the ducklings for up to 6-7 weeks to achieve a live

weight of 2.95 kg at slaughter. Birds are collected by the processing company and trucked to a processing plant for slaughter and further processing.

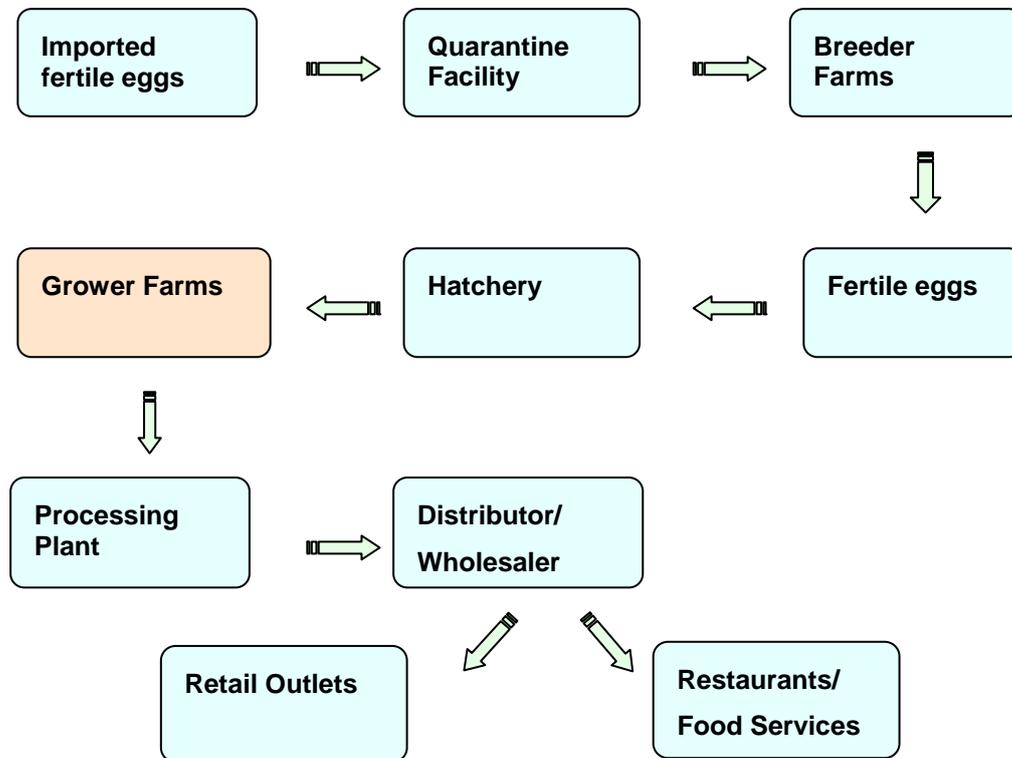


Figure 3, Duck Meat Production Cycle

Fast Facts

- There are more than 40 breeds of domestic duck. The white Pekin duck is the most common variety raised for eggs and meat
- Egg incubation time is typically 26-28 days (35 days for Muscovy ducks)
- Ducks are grown to about 7 weeks of age and males will average 95 g/day with a feed conversion of under 2.15 to 1. In other words, 2.15 kg of feed is required to produce 1kg of duck meat
- Typical slaughter weight is around 2.95 kg
- A typical commercial duck farm houses between 10,000 to 50,000 birds
- Stocking densities are significantly lower than for meat chickens - typically 5 birds/m² compared with 16-21 birds/m² for meat chickens
- Ducks are hardy and relatively resistant to most avian diseases, consequently there is no vaccination program
- In Australia 95% of the duck meat produced is consumed in the domestic market
- The Australian industry processes 8 million birds annually and is worth an estimated \$100 million.



Figure 4, Pekin duck breeder farm. Photo courtesy of P Haddad, Pepe's Ducks Pty Ltd

Resources

[Best Practice Management for Meat Chicken Production in NSW \(Manual 1 – Site Selection and Development\)](http://www.dpi.nsw.gov.au) (www.dpi.nsw.gov.au)

[Better Site Selection for Meat Poultry Developments](http://www.dpi.nsw.gov.au) (2011). NSW DPI (www.dpi.nsw.gov.au)

[Farm Biosecurity Manual for the Duck Meat Industry](http://www.farmbiosecurity.com.au) (May 2010). Animal Health Australia. (www.farmbiosecurity.com.au)

[Model Code of Practice for the Welfare of Animals \(Domestic Poultry, 4th edition\)](http://www.publish.csiro.au) (2002). CSIRO Publishing. (www.publish.csiro.au)

[National Environmental Management System for the Meat Chicken Industry](http://www.rirdc.gov.au) (2003). Rural Industries Research and Development Corporation (www.rirdc.gov.au)

[NSW DPI Poultry website](http://www.dpi.nsw.gov.au/agriculture/livestock/poultry) (www.dpi.nsw.gov.au/agriculture/livestock/poultry)

[Odour Management Options for Meat Chicken Farms](http://www.dpi.nsw.gov.au) (2004). NSW Agriculture. (www.dpi.nsw.gov.au)

[Preparing a development application for intensive agriculture in NSW](http://www.dpi.nsw.gov.au) (2006). NSW DPI (www.dpi.nsw.gov.au)

[Processing, marketing and storing duck](http://www.dpi.nsw.gov.au) (www.dpi.nsw.gov.au)

[Profarm courses website](http://www.dpi.nsw.gov.au/agriculture/profarm) (www.dpi.nsw.gov.au/agriculture/profarm)

[Structure and Dynamics of Australia's Commercial Poultry and Ratite Industries. Chapter 4: The Duck Industry](http://www.daff.gov.au) (2005). The Department of Agriculture, Fisheries and Forestry. (www.daff.gov.au)

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