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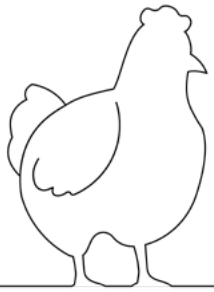

RSPCA Australia

# Higher-welfare meat chicken production and the role of genetics in Australia

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## Background information

Over 716 million meat chickens were slaughtered in Australia in 2023.

To meet the ever-growing demand for chicken meat globally, breeding companies initially focused on selecting genetic traits to improve productivity, such as increasing chicken growth rate, breast meat yield, and overall body weight. A meat chicken breeding program generally includes several generations of chickens who are responsible for producing the grower meat chickens used to produce the end meat product (see pg.7).

Genetic developments in meat chickens are achieved by selecting a trait which then accumulates with each generation until the trait is widely disseminated and established in a strain of meat chicken (1).

The emphasis of breeding programs selecting for improved production performance has resulted in modern day broiler strains being double the liveweight on 50% less feed by the time of slaughter compared to broiler strains in the 1950s (2).

## Goal

RSPCA Australia's goal is to improve the welfare of chickens raised for meat production. To do so we aim to identify actions that will have tangible improvements in meat chicken welfare and provide a pathway for continuous improvement.

## Meat chicken welfare issues associated with genetics

There are a number of animal welfare issues related to the intensive production of chicken meat in Australia that have been linked to the rapid growth of chickens raised for meat. An unintentional consequence of the emphasis on increased growth rates and liveweights of meat chickens has been the increasing incidence of growth-related skeletal deformities, leg and foot health problems, and metabolic conditions (3).

According to the available scientific evidence to date, using higher-welfare strains of meat chickens that have been genetically selected for more pro-welfare traits can help address some of these welfare issues. Higher-welfare strains of meat chickens have been shown to have (4):

- Lower mortality rates – lower likelihood of requiring euthanasia due to leg and foot problems, or dying due to various metabolic conditions.
- Improved feather cover and cleanliness – better feather cover and cleanliness and a lower risk of developing contact dermatitis because of less contact with litter due to generally higher activity levels.
- Improved skeletal health – lower rates of skeletal deformities.
- Reduced leg and foot conditions – improved walking ability and lower rates of footpad dermatitis and hock burn.
- Greater use of perches and platforms – higher rates of perching behaviour, which may be associated with their increased activity levels and mobility.
- Greater outdoor range use – make greater use of and spend more time on the outdoor range area when provided the opportunity.

## Mechanisms to solve the meat chicken welfare issues associated with genetics

A common feature of many of the higher-welfare strains of meat chickens is overall slower growth and weight gain. As a result, these higher-welfare strains of meat chickens are sometimes called slow-growing meat chickens.

## What does 'slow-growing' mean?

Slow- or fast- growing strains of meat chickens are typically classified based on the average amount of weight they gain each day over their lifetime. Using this method of classification a meat chicken that grows:

- <50 grams per day is usually considered a slow-growing strain
- 51-60 grams per day is a moderate-growing strain
- >60 grams per day is a fast-growing strain

Strains that are considered higher-welfare are those that are considered slow- or moderate- growing strains.

## Economic considerations for higher-welfare (and slow-growing) strains

Raising higher-welfare strains that are also slower growing can come with a greater cost. An independent economic review of the current Australian meat chicken industry and international examples have shown that this can be a challenge both in creating market demand and ensuring consumer uptake of any available product.

Estimates from an independent economic report commissioned by the RSPCA are that raising slower growing genetics is likely to come at least at an additional 20% cost to producers, although there are other reports that are as high as an additional 100% cost. A recent industry published report in Europe reports an additional 34.5% cost, however, this is to address all components of the European Chicken Commitment (5). Compared to Europe, the additional cost in Australia is likely to be less because the meat chicken industry is closer in many areas to meeting the requirements of the European Chicken Commitment; for example, the average stocking density of chickens in Australia is already significantly lower than many countries in Europe largely due to the uptake of RSPCA Approved certification.

The increased costs of rearing higher-welfare strains of meat chickens are mainly attributed to the higher feed costs because they grow slower so have lower feed conversion ratios and are usually farmed for longer to reach their desired slaughter weight (6). To maintain existing levels of chicken meat production with slow-growing strains of chickens farmed in conventional grow-out sheds, then additional sheds and land will also be required and additional capital expenditure incurred to account for the additional flocks of chickens. Other possible factors contributing to the increased cost of producing higher-welfare strains of meat chickens include electricity, water costs, and catching. There may also be increased costs at the breeder bird and hatchery production level that could have flow-on effects to increasing the overall cost for maintaining and producing a higher-welfare strain of meat chickens.

The possible economic benefits of higher-welfares strains of meat chickens include lower risk of diseases and rate of skeletal abnormalities resulting in an overall lower mortality rate. Some higher-welfare strains have also been reported to have fewer breast muscle abnormalities which should lead to less downgrade of meat due to poor quality and low aesthetic acceptability (7).

## Environmental sustainability

Industry often report that intensive poultry production systems are environmentally friendly because of their efficiency in having low resource use and emissions per unit of product (8). However, there are concerns that higher-welfare strains of meat chickens will incur a higher $CO_2$ footprint because they are often farmed for longer and will use more resources, which may make them less environmentally sustainabile than conventional fast-growing strains (9).

## Summary of economic and environmental costs

Table 1: Examples of cost considerations for slow- and moderate- growing breeds of meat chicken

| Cost Consideration | Final Cost | Environmental Impact |
|---|---|---|
| Feed conversion ratio | Increased cost | More feed required |
| Feed price | Decreased due to lower protein content | Not examined |
| Electricity | Increased cost | Greater energy consumption |
| Labour - husbandry | Potentially decreased due to reduced mortality and less culls | N/A |
| Labour - catching | Increased cost due to more active birds | N/A |
| Land and shed requirements | Increased | Greater land usage |
| Water consumption | Increased | Greater water usage |
| Mortality | Decreased cost due to lower mortality | Less wastage/disposal of carcasses |
| Meat quality | Less downgrades of meat | Less wastage |

*Independent economic advice estimates an increase in production costs of around 20% to produce an 'intermediate' type moderate-growing broiler chicken in Australia. (Note this is not an estimation to meet all requirements of the Better Chicken Commitment).*

## Consumer willingness to pay

Price is a key driver for consumer's choices when shopping for food, together with taste, health, nutrition, country of origin, and food safety (10).

*There is evidence that consumers are willing to pay more for chicken meat produced to higher standards of animal welfare, including for moderate- and slow-growing broilers.*

Contrary to most of the developed countries that have shown some modest degree of diversification in chicken meat production with the use of the higher-welfare moderate- and slow-growing strains of meat chickens, in Australia the predominant commercial strains used to produce chicken meat are conventional fast-growing strains including those grown in free-range production systems (11).

The European Chicken Commitment began in 2017 and proposed an agreed baseline of welfare expectations for meat chickens by 37 NGOs that sought to persuade the food industry to commit to a new level of welfare for chickens by 2026 (12). The European Chicken Commitment was then rolled out internationally as the Better Chicken Commitment to countries including the United States, Canada, Australia, and New Zealand. The Better Chicken Commitment in many countries outside of the UK and EU, does not have the 2026 deadline; instead, companies either have no set deadline or are expected to implement the requirements within 3-7 years based on the size of their supply chains.

One of the requirements under the Better Chicken Commitment is that companies adopt breeds that demonstrate higher-welfare outcomes (i.e., moderate and slow-growing strains). For the companies, reporting their progress towards meeting the requirements of the Better Chicken Commitment is voluntary and despite the significant push to maintain the strict time commitments to meet the requirements, uptake of all the requirements has been limited to date.

## Other meat chicken welfare issues not addressed by improving genetics

It is important to note that simply selecting for higher-welfare strains that may grow slower is not a solution to all the animal welfare issues associated with meat chicken production. Genetic selection must be accompanied by good management and husbandry practices and appropriate infrastructure to support improved welfare outcomes for meat chickens.

Table 2: Potential solutions to challenges in meat chicken production

| Animal welfare issue | Genetics | Husbandry and management |
|---|---|---|
| Breeder bird feed restriction | Higher-welfare slower-growing strains have been suggested to require less feed restriction and show less signs of hunger. | Alternative feeding and managing strategies could help minimise hunger in breeder birds. |
| Egg and chick viability | Genetics can lead to improvements in egg and chick viability, however this is not always associated with higher-welfare strains. | Using eggs from breeder birds at optimal production ages.<br>Managing egg storage conditions and time.<br>Immediate provision of feed and water to chicks after hatching. |
| Disease | Higher-welfare strains are reported to generally be more robust and have improved immunity, however, further research is needed to validate claims. | Good biosecurity and preventative health strategies (e.g., vaccination programs). |
| Skeletal, leg, and foot health | Higher-welfare strains show improved walking ability and have lower rates of skeletal deformities, footpad dermatitis, and hock burn.<br>Breeding programs can genetically select for improved leg and foot health in both slow- and fast- growing strains. | Optimal space allowance so that meat chickens can move freely and exercise.<br>Maintaining good quality litter that is dry and friable.<br>Perches shown to encourage exercise and improve leg and foot health. |
| High stocking densities | Not primarily a genetic issue | Providing meat chickens with optimal space allowance so they can move freely and exercise. This likely requires a reduction from current legal maximum stocking densities. |
| Poor air quality and high temperatures | Breeding programs can genetically select for increased heat tolerance in meat chickens. | Location of meat chicken farms.<br>Appropriate ventilation systems to manage air quality (e.g., ammonia, carbon dioxide, and dust levels), temperature, and humidity inside sheds.<br>Implementing management strategies to reduce risk of heat stress (e.g., feeding strategies, supplementation of vitamins, minerals and electrolytes; use of phytobiotics). |
| Poor litter quality (i.e., moist and fouled) | Higher-welfare strains can make litter management easier due to higher activity levels (i.e., chickens turn over the litter themselves). | Appropriate choice of litter substrate material.<br>Adequate depth to encourage dustbathing and foraging behaviours.<br>Maintaining good quality litter that is dry and friable. |
| Lack of environmental enrichment (including perching) | Higher-welfare strains show higher usage of perches and platforms when provided. Further research is needed to assess whether this higher usage is due to higher motivation or improved mobility. | Adequate amount of perching space and provision of enrichment objects.<br>Appropriate and preferred design of perches and platforms to encourage usage.<br>Use of effective enrichment objects that encourage natural positive behaviours (e.g., pecking blocks).<br>Management of enrichment objects to maintain meat chickens' interest. |

*Table continues on next page

| Animal welfare issue | Genetics | Husbandry and management |
|---|---|---|
| Euthanasia method – cervical dislocation | Not affected by genetics. | Phase out of cervical dislocation for alternative and more humane methods that cause death immediately or loss of consciousness and eventual death without pain, suffering, or distress (e.g., non-penetrating captive bolt devices). |
| Catching and transport stress | Not primarily a genetic issue | Improving handling techniques at catching (i.e., upright handling of individual birds).<br>Adequate space allowance in transport crates.<br>Appropriate ventilation and temperature control during transport.<br>Minimising time off feed and water, as well as transport times.<br>Limiting or prohibiting transport in extreme weather. |
| Stunning and slaughter method – electrical waterbath stunning | Not primarily a genetic issue | Phase out of electrical waterbath stunning systems in favour of stunning methods that do not require meat chickens to be inverted and shackled while conscious (e.g., controlled atmosphere stunning or low atmospheric pressure stunning). |

## The Australian situation for meat chicken production

The domestic market for chicken meat in Australia is largely dictated by the major supermarket chains, such as ALDI, Coles, and Woolworths.

For the production of higher-welfare strains of meat chickens to be feasible within the Australian market, an effective public education campaign on the welfare benefits of these strains will be important to influence consumer purchasing decisions and gain acceptance of the likely higher costs.

## How to achieve change and improvement to meat chicken welfare

Higher-welfare strains of meat chickens have been trialled in Australia but were discontinued because of poor consumer demand making them economically unsustainable to continue producing on a large scale. Currently, there are no higher-welfare strains available in Australia being reared at large scale for commercial production of chicken meat. The time from introduction of a new genetic strain in Australia to establishing a supply of grower meat chickens is on average 2-2.5 years (see pg.7). For higher-welfare strains of meat chickens to be available at a large scale in Australia it will take many years and will require a consistent demand from consumers that are willing to pay a premium for higher-welfare products

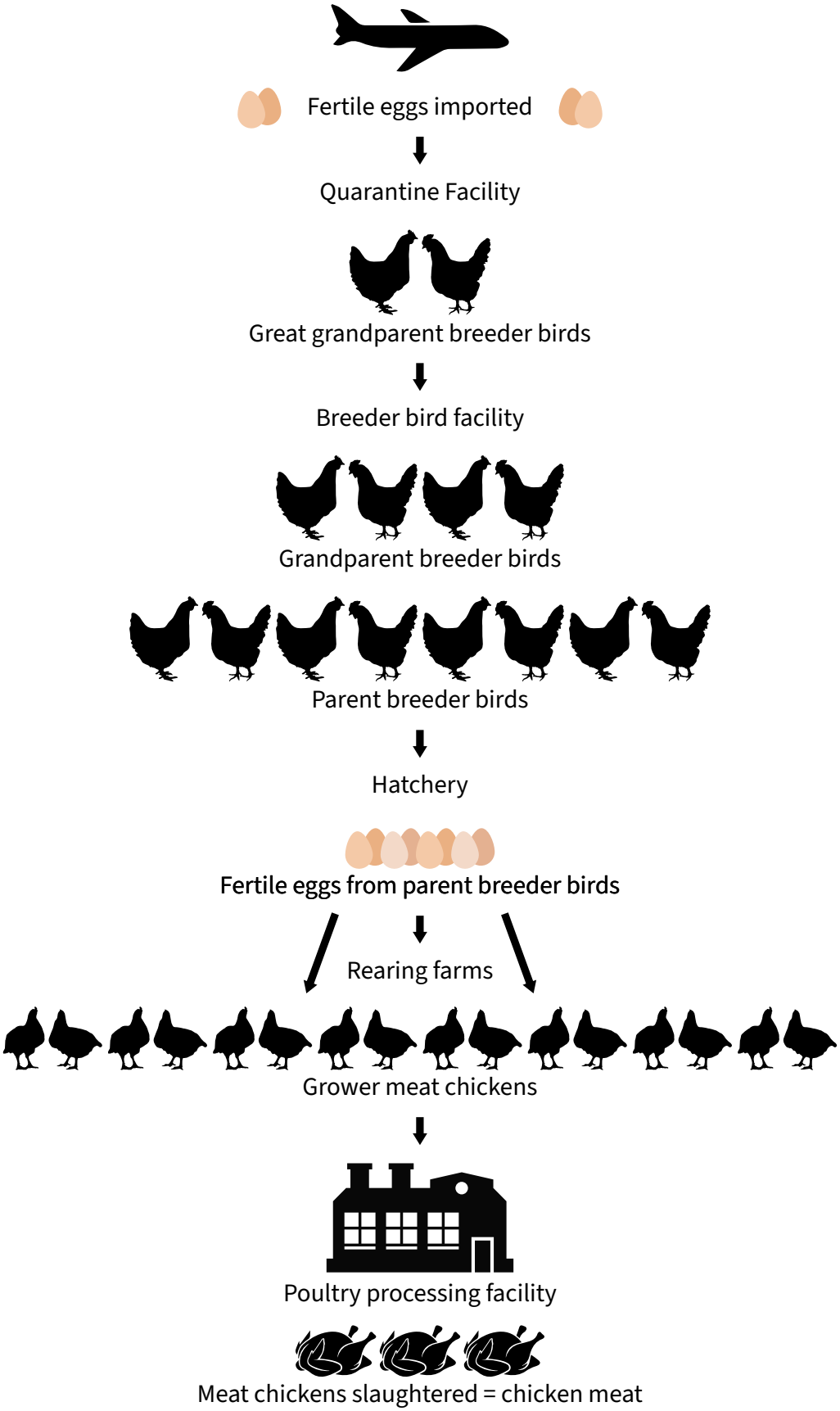
As a starting point, free-range and other premium products are likely where the most gain and opportunities exist to introduce higher-welfare strains of meat chicken into the Australian market. Long term, for the greatest impact on improving meat chicken welfare in Australia, the goal should be to transition higher welfare meat chicken from being a niche product available in the premium market to a product that is a readily available on the supermarket shelf.

Other solutions to improving meat chicken welfare that are not directly related to genetic selection must also be addressed.

## RSPCA advocacy work

The RSPCA advocates for higher-welfare outcomes for all strains of meat chickens in Australia through several mechanisms:

1. Continual and progressive improvements with each review of the RSPCA Approved Standard for meat chickens.
2. Raising consumer awareness as to the ongoing challenges with meat chicken welfare and create demand for higher-welfare chicken products.
3. Engaging with producers and retailers to identify barriers to change and create opportunities for improving meat chicken welfare, including the uptake of higher-welfare strains.
4. Supporting and encouraging research aimed to improve meat chicken welfare.




**From importing new genetics as fertile eggs to producing grower meat chickens it takes a minimum of 2 years.**

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