

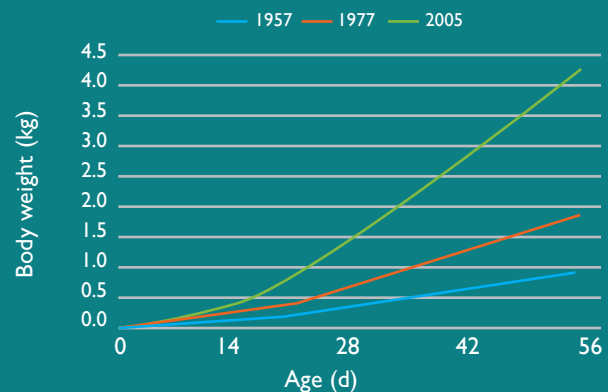
# CHICKEN — A SUSTAINABLE PROTEIN

## How has the growth of broiler chickens evolved?

There's no doubt that chickens grow faster today than they did in the past. At present, commercial broiler chickens in Canada generally reach about 2kg in 35 to 36 days.



Body weight of mixed sex University of Alberta Meat Control strains unselected since 1957 and 1978, and Ross 308 broilers (2005)<sup>1</sup>.



## What have been the benefits of faster growing birds?

### 1. Affordable food

Canadians now spend far less of their income on food. For example, in 1961 the average Canadian dedicated 28% of their personal expenditures to food<sup>2</sup>, but by 2014 this had come down to less than 14%<sup>3</sup>. At the same time, the percentage of the workforce dedicated to producing food has dramatically decreased, with only about 2% of the Canadian population growing food for the other 98%<sup>4</sup>.

Thanks to a combination of genetic and nutritional improvements, as well as better husbandry, technology and monitoring systems, farmers are now able to grow more chickens, in less time and using less feed, resulting in more affordable food.

### 2. Reduced environmental impact

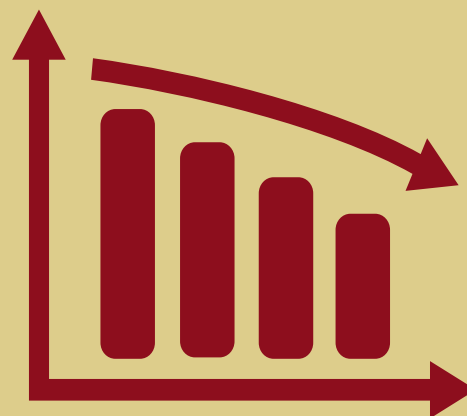
Improving the feed conversion ratio of broilers has in turn reduced emissions and environmental impacts of broiler production. In fact, from 1976 to 2016 there was a 37% reduction in the carbon footprint of the Canadian chicken industry<sup>5</sup>.

This also means less land is required to grow feed for chickens and less manure is created. For example, an additional 384 acres per farm, per year, would be needed to raise slow growing broilers in just the US alone<sup>6</sup>.

### 3. Improved health parameters

Thanks to a balance of selection criteria in breeding programs:

- Mortality levels have declined significantly compared to the slower growing broilers raised in the 1940s<sup>7</sup>.
- Selection for improved leg health has resulted in less lameness<sup>8</sup>.
- Condemnation rates of Canadian broiler chickens have decreased considerably since 1999<sup>9</sup>.
- The incidence of ascites in broiler chickens has decreased significantly over time<sup>9</sup>.



# CHICKEN – A SUSTAINABLE PROTEIN

## How have broiler growth rates been improved?

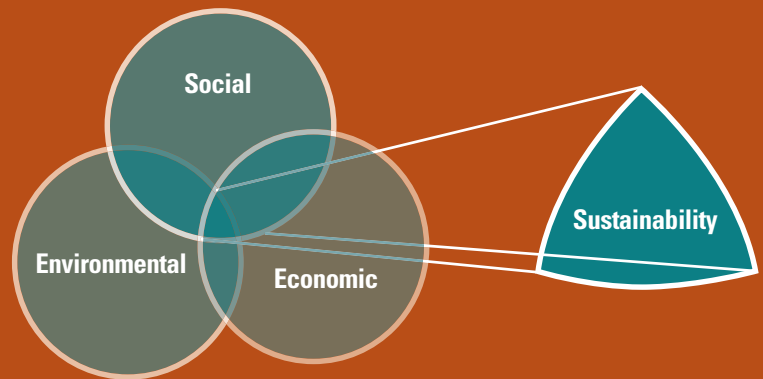
Poultry breeding companies have used the process of genetic selection to carefully select for desirable traits in broiler chickens. This is the same process that gives us Great Danes and Chihuahuas – it is *not* genetic modification. Over half of the traits that breeding companies measure are related to animal wellbeing, such as leg health and footpad dermatitis, and others are for production traits like more efficient growth. A great deal of research has gone into determining the exact nutritional requirements of broilers at all stages, and the ability to precisely meet their dietary needs is another big factor in improved growth rates of broilers.



## What would a slower growing chicken be like?

“Slower-growing” chickens or “heritage breeds” are chickens that can take almost twice as long to reach market weight because they do not convert feed to muscle as quickly. Because of this, these breeds require more feed, fuel, water and land per pound of meat to sustain their growth<sup>6</sup>. As such, this type of chicken can cost nearly 50% more than conventional chicken<sup>6</sup>.

It’s important to consider a multitude of factors like the ones discussed above to account for all aspects of a sustainable strategy.



## Works Cited

1. M. J. Zuidhof, B. L. Schneider, V. L. Carney, D. R. Korver and F. E. Robinson, “Growth, efficiency and yield of commercial broilers from 1957, 1978, and 2005,” Poultry Science, vol. 93, pp. 1-13, 2014.
2. Statistics Canada, “Human activity and the environment: Section 1 food in Canada,” December 2016. [Online]. Available: <https://bit.ly/2rP346u>. [Accessed January 2019].
3. Statistics Canada, “Survey of household spending, 2014,” November 2017. [Online]. Available: <https://bit.ly/20XUvDR>. [Accessed January 2019].
4. The World Bank, “Employment in Agriculture (% of total employment),” September 2018. [Online]. Available: <https://bit.ly/QTEwnT>. [Accessed January 2019].
5. Chicken Farmers of Canada, “Chicken Farmers of Canada’s Sustainability Report,” November 2018. [Online]. Available: <https://bit.ly/2RyOmz7>. [Accessed January 2019].
6. Elanco Animal Health, “The sustainability impacts of slow-growing production in the US,” August 2016. [Online]. Available: <https://bit.ly/2SZWxBx>. [Accessed December 2018].
7. National Chicken Council, “U.S. Broiler Performance,” October 2018. [Online]. Available: <https://bit.ly/2CqZeeq>. [Accessed January 2019].
8. D. N. Kapell, W. G. Hill, A. M. Neeteson, J. McAdam, A. N. Koerhuis and S. Avendaño, 2012. “Twenty-five years of selection for improved leg health in purebred broiler lines and underlying genetic parameters,” Poultry Science, vol. 91, pp. 3032-3043.
9. Agriculture and Agri-Food Canada, “Poultry Condemnation Report by Species for Federally Inspected Plants,” December 2018. [Online]. Available: <https://bit.ly/2EAn708>. [Accessed January 2019].



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