

The significance of public egg-laying trials in Britain in measuring the productivity of chickens, c.1890–1964^{*}

by James P. Bowen

Abstract

Public egg-laying trials, in which the production of a group of birds was formally measured and assessed under standardized conditions, were held to test levels of improvement resulting from breeding. In Britain they provided a quantitative way of assessing the productivity of different breeds and strains within breeds, enabling egg yields (the number of eggs per laying bird) and the laying life of birds to be compared. This article examines early egg-laying trials, which were organized by the Utility Poultry Club and Harper Adams Agricultural College, as well as the high-profile National Egg Laying Test, promoted initially by the Great Eastern Railway (GER) and also the *Daily Mail* newspaper in conjunction with the National Utility Poultry Society (NUPS). The latter became the National Poultry Test, which was modernized in the 1960s to reflect developments in commercial egg-laying and the newly emerging broiler industry. These trials established a system for comprehensive national, regional and county egg-laying trials. It is argued that egg-laying trials played an important role in increasing the egg-laying capacity of chickens and promoting modern intensive methods of production, benefiting small breeders and producers who, during the late nineteenth and early twentieth centuries, dominated the egg market.

There is nothing in the history of British agriculture in any way comparable with the rise of modern poultry-keeping. Fowls there have always been on our farms, but no one who saw the farmer's wife with her basket of eggs on a market day fifty years ago could have foreseen the emergence of poultry-keeping as an independent industry, with a literature and language of its own, a national institute, and an annual parliament.¹

At the end of the nineteenth century, Britain was heavily reliant on imported eggs, partly due to inefficient methods of production and low-quality breeding stock. Poultry keeping and the

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¹ W. B. Mercer, *British farming: An illustrated account of all branches of agriculture in England, Scotland, Wales and Northern Ireland. A story of progress in providing food from Britain's fields* (1951), p. 76.

marketing of eggs was traditionally small scale and considered women's work, often being a sideline activity for the farmer's wife.² Eggs and poultry were profitable enterprises for small farms serving London and other urban conurbations and an important source of income on small agricultural holdings, gardens, and allotments on the fringes of towns and industrial areas in northern England.³ A wide variety of farmers kept poultry, providing a valuable supply of eggs and meat, although there were only a few who regarded it as one of their main activities. Little attention was given to the selective breeding of more productive strains of chickens, particularly with regard to egg production.

By the early twentieth century, however, specialist poultry producers who regarded egg production as their main activity were emerging, and co-operative marketing societies were being established.⁴ Unlike other branches of farming, poultry was relatively easy to enter as it required little capital, attracting people from a wide range of backgrounds. Those who specialized in this activity tended to farm only a few acres of poor-quality land, often concentrating on egg production more by necessity than choice. Up until the 1930s most birds kept were dual purpose, being suitable for both egg and meat production. Table poultry were viewed as a by-product: once the sex of the young chicks could be determined the cockerels were often separated from pullets and fattened for meat. There was a dramatic expansion in egg production due to low grain prices in Britain and the United States of America (USA) during the interwar period.

Poultry became an increasingly important sector of British agriculture during the twentieth century, undergoing significant technical change including improvements in feeding and housing, more effective disease control and breeding more productive chickens.⁵ The business historian Andrew Godley has shown that, prior to the Second World War and even into the late 1950s, poultry production in Britain was predominantly concerned with egg production. Farms produced eggs to be sold locally at markets or collected by packing stations overseen, from 1957, by the British Egg Marketing Board (BEMB). The post-war period saw the increasing application of science and the use of technology in poultry management and production and the expansion of specialist broiler units both in Britain and the USA, rearing birds for meat production.⁶ By comparison we know relatively little about the history of the egg-laying industry and especially the crucial role that egg-laying trials played in measuring the productivity of chickens. The history of eggs more generally still remains to be studied.⁷

² K. Sayer, 'His footmarks on her shoulders': The place of women within poultry keeping in the British countryside, c.1880 to c.1980', *AgHR* 61 (2013), pp. 301–29.

³ M. Winstanley, 'Industrialization and the small farm: family and household economy in nineteenth century Lancashire', *Past and Present* 152 (1996), pp. 173, 175, 180, 182.

⁴ E. H. Whetham (ed.), *The agrarian history of England and Wales* [hereafter *AHEW*], VIII, 1914–39 (1978), pp. 21–2, 179, 151.

⁵ J. Martin, *The development of modern agriculture: British farming since 1931* (2000), p. 125.

⁶ A. Godley, 'The emergence of agribusiness in Europe and the development of the Western European

broiler chicken industry, 1945 to 1973', *AgHR* 62 (2014), pp. 315–36; A. Godley and B. Williams, 'Democratizing luxury and the contentious "invention of the technological chicken" in Britain', *Business Hist.* 83 (2009), pp. 267–91; A. Godley and B. Williams, 'The chicken, the factory farm, and the supermarket: the emergence of the modern poultry industry in Britain', in W. J. Belasco and R. Horowitz (eds), *Food chains: from farmyard to shopping cart* (2009), pp. 47–61; W. Boyd, 'Making meat: science, technology, and American poultry production', *Technology and Culture* 42 (2001), pp. 631–64.

⁷ K. Sayer, 'Eggs – an under-researched topic', *Rural Hist. Today* 23 (2012), pp. 1, 8.

Building on the existing literature, this article does not deal with chicken breeding as such, but rather is concerned with egg-laying trials as a method of assessing improvement in productivity per bird.⁸ It uses evidence from poultry periodicals and publications, newspapers and two archive collections: those of Arthur Denby Wilkinson and the National Poultry Test – which provides invaluable insight into the growth, management and operation of egg-laying trials – and Harry Douglas Barley (1921–71), a farmer, stockbreeder, and well-known agricultural writer.⁹ The former includes detailed correspondence and administrative records, press cuttings, photographs, test results, and technical material. The article covers the period up to the 1960s prior to the emergence of large multi-national breeding companies.

Case studies will be explored of the egg-laying trials organized by the Utility Poultry Club and Harper Adams Agricultural College and the National Egg Laying Test which was founded by the National Utility Poultry Society (NUPS) and Great Eastern Railway (GER) and sponsored by the *Daily Mail*, later becoming the National Poultry Test. It will be argued that these early egg-laying trials played an important role during the period from before the First World War, the interwar years and the decades immediately following the Second World War when small-scale breeders who supplied poultry producers with replacement chickens prevailed. This was the period before large-scale chicken breeders began to dominate the market in the late 1950s and 1960s. Egg laying trials were held to test levels of improvement resulting from breeding and also saw the practical application of science and technology, heralding the widespread adoption of modern industrial production methods.

II

At the end of the nineteenth and early twentieth centuries there was a divergence in Britain between poultry fanciers – who sought to win prizes at shows, focusing on aesthetic non-commercial exhibition breeds – and commercial breeders, who aimed to produce utility breeds noted for their egg-laying ability but not aesthetically attractive.¹⁰ Publications like *Poultry World* featured illustrations of different breeds of layers and their eggs and also their respective purposes, for example, egg farming, table poultry, backyard fancier, smallholding and allotment and fancy poultry.¹¹ It reflected the increasing emphasis on utility, and dual purpose breeds which had commercial attributes of which egg production per bird was the most obvious. Such breeds included the Light Sussex and Rhode Island Reds which were suitable for both egg and meat production.¹²

Some egg producers probably kept records of the number of eggs laid by their flocks of birds and even the productivity of pens of birds, but these would have been a rather crude

⁸ For studies of livestock breeding including poultry, see M. E. Derry, *Art and science in breeding: creating better chickens* (2012) and B. Theunissen, *Beauty or statistics: practice and science in Dutch livestock breeding, 1900–2000* (2020).

⁹ The Museum of English Rural Life, University of Reading (hereafter MERL) FR DW and D84/7.

¹⁰ P. Brassley, 'Livestock Breeds' in E. J. T. Collins

(ed.), *AHEW*, VII (2 vols, 2000), I, p. 561.

¹¹ *Poultry World*, 15 Nov. 1912, 17 Mar. 1922.

¹² For a modern study of poultry breeds, such as the Sussex and its variant the Light Sussex which when crossed with the Rhode Island Red produced offspring which were sex linked, see D. Scrivener, *Popular poultry breeds* (2009), pp. 249–51.

and imprecise indicator of performance as little attention was devoted to systematically recording egg laying. Replacements would be reared by allowing hens to go broody and hatch their own chicks. Towards the end of the nineteenth century, however, formal egg-laying trials were organized, in which different breeds and strains of chicken were kept under standardized conditions and their egg-laying performance recorded. These trials provided a means of ensuring that performance was externally assessed and objectively scrutinized. In their aims, egg-laying trials were similar to other forms of testing productivity, such as milk recording, which involved recording the daily milk yield of individual cows. Measuring the daily milk output of an individual cow is similar to egg-laying trials in that it was assessing animal and herd productivity, which in the case of dairy cattle was an important prerequisite of progeny testing. Although egg-laying trials, like milk recording, were adopted only slowly, they were nevertheless in the vanguard of animal productivity measurement. The Strutt family of Rayleigh in Essex had been employing such techniques on their Friesian herd since the mid-1890s.¹³ Subsequently, in the late 1920s, milk recording enabled George Odium, a pioneering breeder of high-yielding Friesians, to undertake progeny testing. This led Odium to develop selective breeding from within the herd, identifying male and female lines based on milk recording and other characteristics going back four or five generations.¹⁴ Odium also distinguished between breeding for showing and for milk production.¹⁵

The Utility Poultry Club was formed in 1896 to promote egg-laying tests, initially privately funded and held on farms with breeders entering groups of birds.¹⁶ The organization emphasized the need to encourage productivity improvement over breeding for exhibition with utility breeds or strains increasingly focused on egg production. The first test held on a farm at Northallerton (Yorks., N. Riding) owned by Mr Simon Hunter, was not only the first test in Britain, but probably the first formally organized trial in the world. It was a 16-week test that lasted from 3 November 1897 to 22 February 1898 with seven entries of four pullets each. The egg yield of each pen was recorded and birds that died were replaced. The first trial took place in the winter when egg production was at its seasonal low, in effect testing the birds' ability to produce eggs when prices were at their highest. First prize was awarded to H. Hobson, whose pen of four Black Minocas laid a total of 161 eggs. Between 1898 and 1902 the 16-week tests continued, moving each year to a different farm. The tests grew in popularity.

In 1902–03 the test was held on a farm near Newbury, Berkshire. It saw the first entries of American pedigree bred stock. First prize was awarded to a pen of White Wyandottes. American methods of housing, such as open-fronted scratching sheds and trap nests, were also introduced. The latter was a significant development in that it provided a means of ascertaining the productivity of individual birds as opposed to the productivity of a pen. A trap nest was a means of retaining the bird in the nest after it had laid an egg so that it could be recorded. They were widely used by poultry breeders and in trials in Britain and the USA, making it

¹³ G. E. Mingay, *British Friesians. An epic of progress* (1982), p. 59; W. Gavin, *Ninety years of family farming: the story of Lord Rayleigh's and Strutt and Parker Farms* (1967), pp. 161–4.

¹⁴ J. Martin, 'George Odium, the Ministry of Agriculture and "Farmer Hudson"', *AgHR* 55 (2007), pp. 229–50,

esp. p. 237.

¹⁵ *Ibid.*, p. 238.

¹⁶ The following paragraphs, unless otherwise stated, are based on MERL, FR DW AD2/4 'Lessons from Laying Trials'.



FIGURE 1 a. Photograph of a trap nest used in egg-laying trials. After laying an egg, the hen remained in the nest after trapping until it was released by the poultry keeper who then recorded the egg laid. This example, made by Mr Charles Parsons of Sawhills at Thatcham in Berkshire (1858–1938), was exhibited at a Utility Poultry Club show at Plymouth, Devon where it won a silver medal and Crystal Palace where it won a diploma. Source: MERL, 70/165. (Reproduced by permission of the Museum of English Rural Life, University of Reading.)

possible to ascertain the production of individual birds.¹⁷ This allowed the poultry breeder to identify the more productive laying hens from which to breed, and conversely those with negative characteristics such as lower productivity or whose eggs were small, misshapen or had poor-quality shells of the wrong colour or thickness.¹⁸ However using trap nests was labour intensive and thus expensive. An official history of British farming stated that: 'Trap-nesting was invented as an aid to breeding; egg-laying competitions were started and interest therein stimulated by the daily press.'¹⁹ An example of a prize-winning trap nest is in the object collection at the Museum of English Rural Life (Figures 1a and b).²⁰

The use of trap nests was controversial. While individual birds may have exceptional levels of production, other members of the same flock might be considerably inferior. The person who was buying chicks from the breeder would not necessarily acquire those from the most productive birds. In effect, advertisements declaring that one of the breeders' birds had produced an impressive number of eggs could be slightly misleading. A leading critic of trap nests, A. L. Hagedoorn, a Dutch geneticist, argued that a breeder could use an individual hen's

¹⁷ Trap nests were used by Raymond Pearl, a geneticist at the Maine Agricultural Experimental Station in Orono, see K. J. Cooke, 'From science to practice, or practice to science? Chickens and eggs in Raymond Pearl's agricultural breeding research, 1907–1916', *Isis* 88 (1997), pp. 71–2.

¹⁸ A report on farming in Denmark referred to a government experimental farm at Favrholt, which was

used to test poultry there, being 128 flocks of 10 hens each. After each test the number of eggs and their size, shape, weight and texture were recorded along with the amount of food consumed. R. G. P. White, *Report on a visit to farms in Denmark and Great Britain* (1949), p. 26.

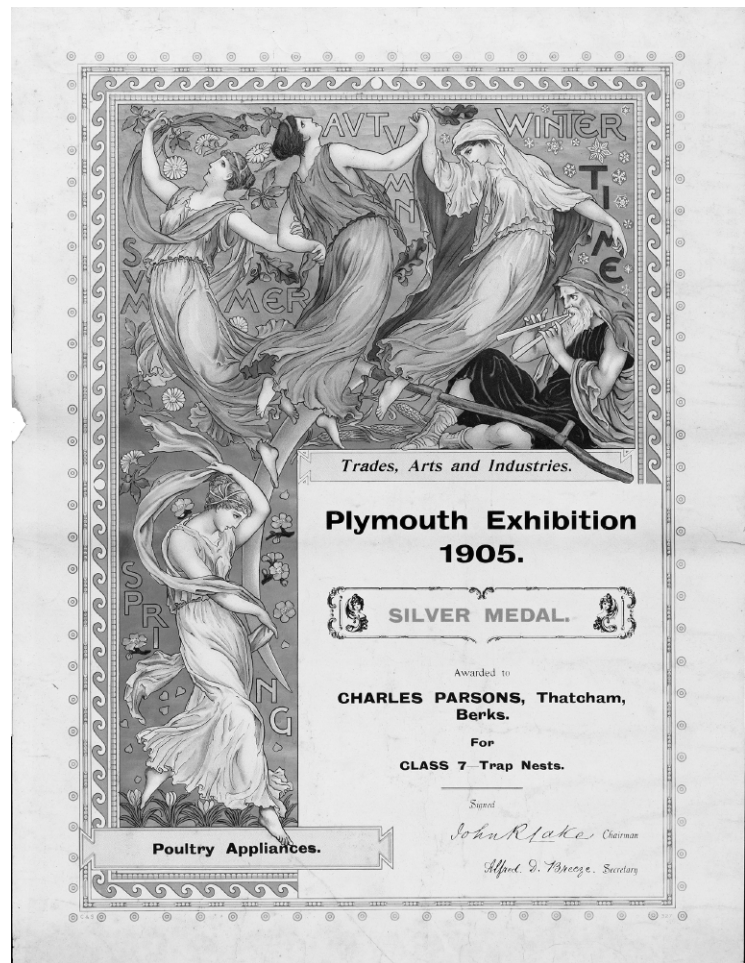
¹⁹ Mercer, *British farming*, p. 77.

²⁰ MERL, 70/164–165.

FIGURE 1 b. Certificate awarded to Charles Parsons for his trap nest at the 1905 Plymouth Exhibition.

Source: MERL, 70/166.

(Reproduced by permission of the Museum of English Rural Life, University of Reading.)



results for advertisement purposes even if the results of the rest of the flock were considerably less.²¹ Trap nesting was not always accurate as birds could lay on the floor, thereby making it difficult if not impossible to ascertain which bird had laid the egg.

The Utility Poultry Club put forward proposals to hold 12-month egg-laying trials at Harper Adams at Edgmond (Salop.) in 1905, but financial difficulties meant these did not take place.²² The first 12-month test was held in 1907–08 by the Utility Poultry Club at a farm at Rayne in Essex. Nevertheless, with funding secured from the Board of Agriculture, egg-laying trials began at Harper Adams on the 5 October 1912, initially promoted and supported by the Utility Poultry Club (Figure 2). These were the first large-scale tests and were held on the same site for 30 years. There were 100 pens with each pen having a house for six birds and trap nests.

²¹ A. L. Hagedoorn, 'An improved method of testing the quality of a breeder's entire flock', in *Report of proceedings of the World's poultry congress Ottawa, Canada. July 27 to August 4, nineteen hundred and*

twenty seven (1928), p. 97.

²² *History of the National Institute of Poultry Husbandry [NIPH] incorporated by Harper Adams Agricultural College, Newport, Shropshire* (1986), p. 3.

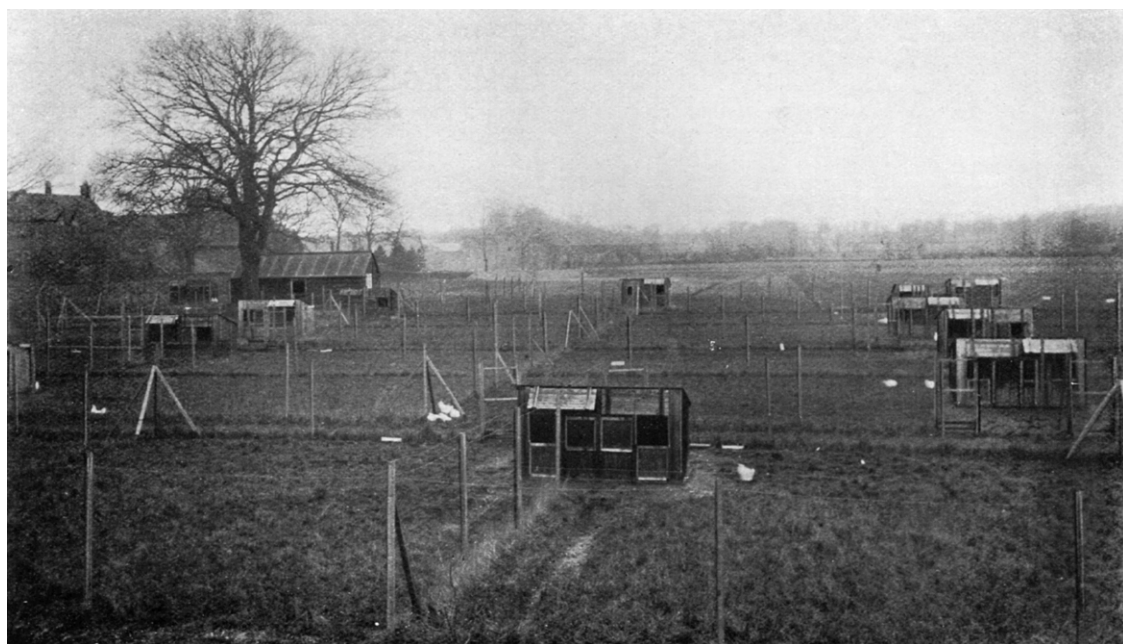


FIGURE 2. Photograph of early egg-laying trials at Harper Adams Agricultural College.

Source: Figure 4.10 from H. Williams, *The lure of the land: A century of education at Harper Adams* (2000), p. 66. (Reproduced by permission of Harper Adams University.)

P. Hedworth Foulkes, College Principal between 1901 and 1922, had a particular interest in poultry and established a specialist poultry department in 1909 providing training in poultry husbandry.²³ This paralleled developments in the USA, where poultry science flourished in the 1910s and '20s, emerging from the discipline of poultry keeping at agricultural experiment stations and colleges.²⁴

Unfortunately, the early tests at Harper Adams were affected by disease outbreaks (diphtheric roup) – George Henderson observed that in the mid-1930s laying trials were recording an average mortality of 20 per cent among laying pullets, in some instances as high as 40 per cent.²⁵ During the late nineteenth and early twentieth centuries poultry were susceptible to disease, resulting in high levels of mortality and low egg yields.²⁶ Poultry keepers paid a fee and entered a pen of six birds. A pen of White Wyandottes, a variety of the American Wyandotte, laid 1389 eggs (worth £7 os. 3½d.), winning first prize.²⁷ In total 17 breeds were represented but this breed was the most productive, taking five out of the first seven places. In 1914 different breed sections were introduced to allow for comparison of White Leghorns, White Wyandottes, Buff Orpingtons, Rhode Island Reds, Barred Rocks, Sussex, and Faverolles; and the following year a

²³ C. Crowther, 'In the beginning: a series of articles dealing with the development of educational and research institutes, no. 19, The Harper Adams Agricultural College', *Agric. Prog.* 27 (1952), pp. 5–12. For the egg-laying trials at Harper Adams and the National Institute for Poultry Husbandry (NIPH), see *History of the NIPH*;

H. Williams, *The lure of the land: a century of education at Harper Adams* (2000), pp. 65–6, 84, 134, 160.

²⁴ Boyd, 'Making meat', p. 636.

²⁵ G. Henderson, *The farming ladder* (1950), p. 57.

²⁶ Whetham (ed.), *AHEW*, VIII, pp. 38, 151.

²⁷ *History of the NIPH*, p. 3.

section was added for commercial egg producers and smallholders. Presumably the trials were initially for poultry breeders who produced chickens for sale and the new sections enabled commercial egg producers and smallholders to enter the birds they had bred themselves. From 1916 Harper Adams took over the sole management of the trials as the Utility Poultry Club, which became the NUPS, focused its attention on setting up the National Egg Laying Test.²⁸ According to the College's 1918 women's prospectus these trials were 'the largest of their kind in the world.'²⁹

Innovations trialled at Harper Adams included the use of artificial light in houses (1921–22). By this time, it was recognized that increasing the number of hours of light to which birds were subjected resulted in a corresponding rise in egg production during the winter months when egg production declined significantly and egg prices were at their highest. Karen Sayer has highlighted that by 1928 'practical winter lighting programmes for layers' had been developed at Harper Adams.³⁰ The adoption of artificial lighting in poultry sheds stimulated birds to lay year-round, enabling poultry producers to overcome the issue of the seasonality of egg production.³¹ Results were published monthly with over 4000 reports being distributed to subscribers and Utility Poultry Club members in 1915.³² The following year the *Poultry Competition Monthly* was published, to be superseded in 1918 by the *Harper Adams Utility Poultry Journal*, with an annual circulation of 5000.³³ The journal provided monthly updates on the results of trials, predominantly for competitors, along with articles on poultry subjects of wider interest, which were often based on experimental work carried out by the National Institute of Poultry Husbandry (NIPH), established in 1926.³⁴

Breeders were presented with certificates for the highest number of eggs laid and in some cases medals, of which numerous examples survive in the MERL's archive and object collections.³⁵ There were hundreds of visitors to the laying trials. When the fourth World Poultry Congress was held at Crystal Palace in London in 1930, buses transported 350 delegates to view the egg-laying trials at Harper Adams and a commemorative special gold medal was awarded in each section except in the case of a single bird trial. Special prizes such as sterling silver spoons were offered, to encourage former students to enter. An annual conference attended by breeders and specialist egg and poultry producers and farmers, was reported on in supplements to the *Harper Adams Utility Poultry Journal*.³⁶

During the First World War increasing emphasis had been placed upon poultry production as the curtailment of egg imports meant that fresh eggs achieved considerably higher prices.³⁷ After the war, there were increasing calls for agricultural education to be provided for ex-servicemen, many of whom had difficulty finding suitable work. Edward Brown, later

²⁸ Williams, *Lure of the land*, p. 65.

²⁹ Ibid., pp. 65–6.

³⁰ K. Sayer, 'Battery birds, "stimulighting" and "twilighting": The ecology of standardized poultry technology', *Hist. of Technology* 28 (2008), p. 156.

³¹ Q. Seddon, *The silent revolution: farming and the countryside in the 21st century* (1989), p. 109.

³² Williams, *Lure of the land*, p. 66.

³³ Ibid.; MERL, periodicals HAR/ADA.

³⁴ *History of the NIPH*, p. 37.

³⁵ For certificates, see MERL, D84/7/169–186; for a medal from the Berkshire Egg Laying Trials held in 1928–29, 1929–30 and 1930–31, see MERL, 59/467.

³⁶ Williams, *Lure of the land*, p. 66; MERL, periodicals HAR/ADA.

³⁷ For egg imports, see Holderness, 'Intensive livestock keeping', in Collins (ed.), *AHEW*, VII, I, pp. 490–1.

knighted for his services to the poultry industry, called for instruction to be given in poultry husbandry. He became the President and later Secretary of the National Poultry Council which sought to promote poultry education by awarding certificates and diplomas and encouraging research. In 1926 with financial support from the government and the National Poultry Council, the NIPH at Harper Adams was established.³⁸ At the opening ceremony on the 3 November 1926, attended by 1000 guests, His Royal Highness the Duke of York (later King George VI) observed in his address that, 'with the growth of the poultry industry, the importance of collecting and recording the results of experience has become more and more apparent'.³⁹ He toured buildings and rearing pens. It was clearly recognized that research into more efficient and productive methods of poultry keeping was needed. Central to the decision to locate the NIPH at Harper Adams were its egg-laying trials and its reputation for research and teaching in poultry husbandry, which it continued to pioneer even after the trials had ceased.⁴⁰ Later in 1938 Dr Charles Crowther, College Principal between 1922 and 1944, said:

The one branch of the agricultural industry in which the College provides the fullest possible specialized training is Poultry Husbandry. This part of its work is organized separately in the National Institute of Poultry Husbandry, which is a national centre established and maintained at the College by the Ministry of Agriculture. The Institute is very completely equipped for the purposes of instructional and experimental work in the production of eggs and table poultry, and is supplemented by the Harper Adams Laying Trials to which noted poultry breeders in all parts of the country send birds for test every year.⁴¹

The trials continued at Harper Adams until 1942 when they ceased due to wartime feed shortages.⁴² Restrictions during the Second World War such as the rationing of feeding stuffs meant that the poultry industry – like pig production – contracted as, whilst eggs were high in protein, they were low in nutritional value in terms of carbohydrates and in relation to the amount of food the bird consumed.⁴³ Commercial production declined but efforts were made to use alternative feeds including household leftovers. Hence the expansion of small-scale back-yard poultry production. As Paul Brassley has shown, the shortfall was partly met by households which were often in or on the periphery of urban areas who played an important role in egg production, with 40 per cent of all eggs produced in the last year of the war coming from holdings of less than an acre.⁴⁴

Nevertheless, as a result of the egg-laying trials, Harper Adams developed a national and international reputation for poultry husbandry. Crowther later credited Foulkes with

³⁸ For the NIPH, see *History of the NIPH*; R. Perren, '1875–1985: Agricultural Education', in G. C. Baugh (ed.), *VCH Salop, IV, Agriculture* (1989), pp. 266–8; Williams, *Lure of the land*.

³⁹ *Harper Adams Utility Poultry J.* 12 (1926), p. 1; Crowther, 'Harper Adams', p. 11.

⁴⁰ A Pathe newsreel produced in 1949, featuring Prof. Herbert Howes, who published *Modern poultry management* (1939), *Management of farm poultry with a view to profit* (1930), and *Turkeys and geese* (1949), records the hatching of wingless chicks imported from

the USA.

⁴¹ C. Crowther, 'The Work and Aims of the Harper Adams Agricultural College', *Shropshire Agricultural News* 4 (April 1938), p. 13. For copies, see MERL, periodicals SHR/AGR and Shropshire Archives, Shrewsbury C 22.

⁴² Williams, *Lure of the land*, p. 160.

⁴³ Martin, *Development of modern agriculture*, p. 51.

⁴⁴ P. Brassley, 'Pig clubs and backyard chickens: the significance of household producers in Britain in the Second World War', *AgHR* 66 (2018), p. 93.

developing the 'sidelines of agriculture', notably poultry, and the wider influence the egg-laying trials at Harper Adams had on the infant poultry industry. As he wrote:

To him also is due the world-wide reputation in the poultry industry attained by the College through the institution and development of the Harper Adams Egg-Laying Trials, started (in association for a few years with the Utility Poultry Club) in October, 1911, and continued in unbroken annual series and on a very large scale for thirty years.⁴⁵

Furthermore, Crowther placed particular emphasis on the importance of the egg-laying trials in leading to the promotion of annual poultry conferences, pioneering research and teaching with regards to poultry husbandry by the institution. As he went on to say:

It is also hardly an exaggeration to claim that the triple movements for a National Poultry Council, a National Poultry Institute, and a National Diploma in Poultry Husbandry had, if not their inception, at least their active incubation period in the Harper Adams Poultry Conferences.⁴⁶

Having discussed the early egg-laying trials organized by the Utility Poultry Club and Harper Adams, attention will now turn to examine the involvement of the Great Eastern Railway (GER) in promoting poultry husbandry in East Anglia. Poultry was one of the most rapidly expanding sectors in this region. The company assisted with the distribution and marketing of eggs, ran poultry demonstration trains, and, with the NUPS, backed the National Egg Laying Test, which attracted sponsorship from the *Daily Mail*.

III

Food shortages during the First World War prompted the GER to organize an egg and poultry demonstration train, which ran throughout East Anglia in the autumn of 1916, promoting the expansion of egg production during wartime. This was not the first initiative of this kind as a poultry demonstration train had operated in South Wales in 1910, and another had travelled through North Wales in 1913.⁴⁷ In England similar trains had operated before the war. These were widely reported in regional and national newspapers. Such agricultural extension initiatives had their origins in the USA: in 1906 a train travelled through 21 states; and in 1911 995,200 people toured 71 trains which called at 28 states.⁴⁸ As Cooke has pointed out: 'By 1914 a train educating farmers about all facets of egg production – including poultry raising, breed improvement, better care for chickens, and appropriate handling of eggs – had travelled over seven thousand miles in two years.'⁴⁹

The GER was the most influential company playing an important role in promoting more efficient methods of poultry keeping in East Anglia as it had a vested interest in the region's

⁴⁵ Crowther, 'Harper Adams', pp. 8–9.

⁴⁶ *Ibid.*, p. 9.

⁴⁷ 'The Price of Foodstuffs', *The Times*, 4 Apr. 1910, p. 3; 'The Egg Train', *Daily Mail*, 15 Apr. 1910; 'Agriculture', *The Times*, 24 Feb. 1919, p. 11; 'Agriculture', *The*

Times, 21 Apr. 1913, p. 4; 'News in Brief', *The Times*, 24 Apr. 1913, p. 10.

⁴⁸ Cooke, 'From science to practice', p. 86.

⁴⁹ *Ibid.*, p. 86.

poultry industry.⁵⁰ The region had good access to London markets, a rapidly expanding poultry sector and cheap cereals were available. Shortly before the outbreak of the First World War, co-operatives such as the Framlingham and Eastern Counties Co-operative Egg and Poultry Society Limited were well established, collecting more than 17 million eggs a year valued at £250,000. The GER transported eggs and poultry south to London, to the manufacturing towns of the north and west, and the seasonal resorts on the east coast, so had a vested interest in actively encouraging the region's poultry industry. The railway company purchased Dodnash Priory Farm at Bentley near Ipswich in Suffolk with the aim of supplying their hotels and providing practical demonstration of approved methods of poultry keeping. The company's 'Poultry and Small Stock Demonstration Train' – a former wartime ambulance train – was exhibited at London Liverpool Street station on 17 May 1920 before conducting a six-week tour of towns in Hertfordshire, Cambridgeshire, Norfolk, Suffolk, Essex, and Huntingdonshire.⁵¹ The train was advertised in the national, regional and local press.⁵² Sailors and soldiers who were maimed and wounded in the First World War were encouraged to enter the poultry industry and a newspaper reported that they were to contact the railway company to arrange to view the train.⁵³ Many who had been traumatized by their wartime experiences had difficulty in adjusting to their civilian life.

The train was aimed at those in urban areas with gardens and smallholders in country districts who could keep poultry and small livestock. One of the three carriages was used to teach horticultural subjects, and was under the direction of the Ministry of Agriculture. Admission was free and visitors passed through the train watching demonstration, discussing issues and asking questions. Films were to be shown using a cinematograph. It was reported that: 'There will be no "dry-as-dust" lectures with an array of statistics, but there will be practical "talks" by men actively engaged in the several branches of production, who will invite questions and be prepared to give helpful answers'.⁵⁴ The tour was to be directed by Mr D. Anderson and J. N. Leigh of the GER's Experiment and Demonstration Farm at Bentley, Suffolk where the National Egg Laying Test was held. In an obituary, Leigh was described 'as the doyen of the laying trials movement'.⁵⁵ The demonstration train was one way by which information about methods of production and technological improvements were disseminated, promoting poultry keeping among smallholders and showing those thinking of entering the industry how egg production was being transformed.

⁵⁰ The following paragraph is based on MERL, FR DW AD2/1, 'The Great Eastern Railway company's farm, Dodnash Priory, Bentley, Suffolk' (n.d.); 'News in Brief', *The Times*, 27 Oct. 1916, p. 5.

⁵¹ The following paragraphs, unless otherwise stated, are based on 'Travelling Lessons in Poultry Keeping', *The Times*, 12 Apr. 1920, p. 4; 'Travelling Poultry Exhibition', *The Times*, 18 May 1920, p. 11; 'The Poultry Train. Public Interest in the Demonstrations', *The Times*, 14 June 1920, p. 7.

⁵² For example, the train was also advertised in the *Bury Free Press*, 30 Apr. 1920, p. 8; *Cambridge Daily*

News, 20 Mar. 1920, p. 4; *Cambridge Independent Press*, 21 May 1920, p. 10; *Chelmsford Chronicle*, 23 Apr. 1920, p. 5; *Diss Express*, 30 Apr. 1920, p. 8; *Essex Newsman*, 8 May 1920, p. 3; *Framlingham Weekly News*, 15 May 1920, p. 2; *The Globe*, 20 Apr. 1920, p. 5; *Lynn Advertiser*, 11 June 1920, p. 7; *Suffolk and Essex Free Press*, 21 Apr. 1920, p. 8; *Westminster Gazette*, 21 Apr. 1920, p. 4.

⁵³ *Diss Express*, 21 May 1920, p. 5.

⁵⁴ 'Travelling Lessons in Poultry Keeping', *The Times*, 12 Apr. 1920, p. 4.

⁵⁵ For obituaries, see MERL, FR DW ET3/8.

Most significantly, the NUPS, which was formed when the northern and southern sections of the Utility Poultry Club merged, founded the National Egg Laying Test in 1917 in conjunction with the GER.⁵⁶ Tests were held at Dodnash Priory Farm, the site covering over 20 acres. The first tests began on 7 November 1918 and were managed by Leigh who was managing director of the National Egg Laying Test and later editor of *The National Laying Test Journal*.⁵⁷ The test, which was 12 months long, included 277 pens of pure-bred pullets which were organized into six competitive breeds, the most important of which were White Leghorn, White Wyandotte, and Rhode Island Red. In total there were 1445 birds with no fewer than 16 different breeds. Other breeds included Buff and White Orpingtons, Buff Rocks, Light and Speckled Sussex, Langshans, Anconas, Black Minocas, White and Black La Bresse, Buttercups, and Russian Orloffs. The poultry houses were built by the railway company's works, taking into consideration light and ventilation. They were fitted with ten trap nests so the number of eggs laid could be recorded, and there was a grass run. A standard system of feeding was adopted morning and afternoon, including a morning grain of wheat and oats, and in cold weather cracked maize was scattered in the litter or broadcast into runs and in the afternoon a wet mash that was fed in troughs comprising bran, middlings, Sussex ground oats, and clover, maize and fish meal. The chickens were housed, fed and managed according to the rules and the eggs were recorded. They were all managed in the same way in order to enable more objective assessments to take place.

The following year the *Daily Mail* newspaper sponsored the Championship Gold Cup Section and provided all the prize money. In response to egg shortages and to draw attention to the keeping of more productive strains of chickens, the *Daily Mail* ran a four-month winter test which was initially aimed at small poultry keepers rather than commercial poultry breeders. It was intended to encourage households to keep a few chickens of a good laying strain as an economical way of producing eggs. The test was held during the winter beginning on 1 October 1919 and ending on 31 January 1920. Prizes amounting to £250 were offered to encourage small poultry-keepers to acquire more productive strains of birds.⁵⁸ The test comprised 250 pens each with four birds, but it was extremely popular, attracting 695 entries.⁵⁹ Consequently a committee was tasked to select which entries should be included in the trials. Again, the GER provided all the poultry houses, which were specially designed for small poultry keepers but without trap nests, feed, and staff to manage the tests. Winter trials were intended to identify strains of chickens which produced eggs during the winter months when national production was at its lowest and prices highest. Some strains of chickens may have laid more eggs over the year, but most of these might have been produced during the spring and summer when plenty of eggs were available and prices were low.

At the time it was thought that the most economic method of egg production was to encourage every householder to keep a few laying hens. Hence only those with less than 50 birds could enter. The tests were conducted along the same lines as the National Egg Laying

⁵⁶ The following paragraphs, unless otherwise stated, are based on MERL, FR DW AD2/1, 'Dodnash Priory', and FR DW AD2/4, 'Lessons from Laying Trials'.

⁵⁷ *The National Laying Test Journal: The Official Organ of the National Egg Laying Test*, 1, 1 (1929) (copy

in MERL, AD2/1); MERL, P4/B 1.

⁵⁸ '£250 in Prizes for Poultry Keepers', *Daily Mail*, 13 Aug. 1919, p. 3; '£250 Egg-Laying Test', *Daily Mail*, 28 Aug. 1919, p. 3.

Test, although trap nests, the significance of which has been discussed earlier, were not used and the feeding regime differed in that half the daily grain ration was given in the morning and the remainder in the afternoon. A wet mash was fed at midday.

A 12-month test was held beginning on 1 December 1920. It was reported that: 'The *Daily Mail*'s main object in promoting this test is to demonstrate in the most convincing manner possible that the keeping of small flocks of hens of proved-laying strain on back-garden lines is the sole way of satisfying the nation's egg needs economically'.⁶⁰ News and results from the egg-laying trials were regularly published in the *Daily Mail*, and prize winning birds were exhibited at the *Daily Mail*'s Ideal Home Exhibition held at Olympia, London. Visitors came to view the tests including journalists and those involved in the poultry industry. Staff provided information about feeding methods and husbandry practices. The intention was that the test would highlight the benefits of keeping good productive laying strains. In 1920 it was reported that 2445 birds were involved in the National Laying Test and the *Daily Mail* trials, constituting a world record.⁶¹

The National Egg Laying Test remained at Dodnash Priory Farm for 11 years. Highlights of the early tests included the first duck tests in 1920 and the introduction of a section for crosses in 1926–27. In total more than 40 breeds and varieties were entered in the tests. The growing popularity of the Rhode Island Red and Light Sussex contributed to the lack of interest in and thus falling support for a number of traditional breeds. In a paper on poultry education in England and Wales given at the World Poultry Congress at Ottawa, Canada held between 27 July and 4 August 1927, P. Hedworth Foulkes, who had been Principal of Harper Adams between 1901 and 1922, remarked that:

The National Utility Poultry Society has for many years done most valuable work, by the organization of and giving of lectures to its members all over the country and by its Egg Laying Trials at Bentley, which have become world famous, and which have been the means of stimulating research into realms hitherto undreamt of in connection with the laying hen.⁶²

In 1928 the National Egg Laying Test moved from Dodnash Priory Farm to a new test ground at Milford near Godalming, Surrey (Figure 3).⁶³ It was the oldest and largest egg-laying trial in the world. The site was bought and equipped by a private company interested in developing the poultry industry. It occupied a 27-acre site near to Milford Station, housing 3400 birds, although later in 1938 the trials moved to a 50-acre site close by.⁶⁴ A major development in the management of the National Egg Laying Test was the appointment of Arthur Denby Wilkinson as test manager in 1952, a post he held until 1965.⁶⁵ He had previously managed numerous commercial poultry farms: Robert Brown's breeding and commercial egg farm at Aldbourne,

⁵⁹ 'Record Egg-Laying Contest', *Daily Mail*, 1 Sept. 1919, p. 3.

⁶⁰ 'New "Daily Mail" Laying Test', *Daily Mail*, 28 Apr. 1920, p. 8.

⁶¹ 'Poultry Possibilities', *The Times*, 24 Jan. 1920, p. 9.

⁶² P. H. Foulkes, 'The development of poultry education in England and Wales', in *Report of proceedings of the World's poultry congress...* (1928), p. 468.

⁶³ 'New Egg-Laying Test', *Daily Mail*, 5 Dec. 1928, p. 18.

⁶⁴ 'New Egg Test Site', *Daily Mail*, 17 Mar. 1938, p. 6.

⁶⁵ *Poultry Industry*, 4 Sept. 1952, p. 361. Wilkinson kept notebooks recording information about the National Test including laying figures and work undertaken, nature observations and general diary entries and also produced an autobiographical manuscript, see MERL, FR DW ET1/6-59 and SP4/1.



FIGURE 3 a, b and c
Photographs of the National
Egg Laying Test promoted
by the *Daily Mail* and the
National Utility Poultry Society
(1930s–1950s).

Source: MERL, FR DW,
PH3/30/3, PH3/30/19 and
PH3/30/27. (Reproduced by
permission of the Museum of
English Rural Life, University
of Reading.)



Hassocks, O. A. Batten's farm in Sussex, and White Lady Poultry Farm at Bray in Berkshire, where he had been assistant manager. Before the war he had been involved with the Sussex chicken cramming business.⁶⁶ Through this role he was clearly a leading figure in the poultry industry and as recognition in 1964 was awarded an MBE for his work as Manager of the National Poultry Tests.⁶⁷

The *Daily Mail* continued to be actively involved with the National Egg Laying Test reporting results and sponsoring the trials into the 1950s, awarding prize money. Whilst initially the National Egg Laying Test, its remit eventually expanded to include commercial random sample tests, broiler tests, BEMB tests and breeding research tests of new composite breeds and hybrids.⁶⁸ From the early 1960s attention shifted from conducting egg-laying tests in small unit houses to modern intensive houses.⁶⁹ Several trends are apparent from the records of the national test. The average number of eggs laid per bird increased dramatically from 144 eggs in the first year of the test (1917–18) to more than 220 by 1959–60 and the Rhode Island Red and the Light Sussex came to prominence as the most popular breeds, as they saw the greatest improvements in productivity. They did not necessarily lay the most eggs, but they had the advantage that the offspring of the two crosses had physical characteristics that could help determine whether they were cockerels or pullets at a day old (male chicks are silver whilst female chicks are gold).⁷⁰

Like the trials at Harper Adams, the results were published in a house journal, *The National Laying Test Journal: The Official Organ of the National Egg Laying Test Promoted by the Daily Mail and the N.U.P.S.* which was circulated to competitors and poultry presses monthly.⁷¹ It was subsequently incorporated into the *National Poultry Journal* and later *Poultry Industry: the Official Organ of the National Laying Test, supported by the Daily Mail*.⁷²

In 1964 the National Poultry Test (a new private limited company National Poultry Tests Limited was established) was completely modernized with new labour saving housing and

⁶⁶ For chicken cramming, see B. Short, 'The art and craft of chicken cramming: poultry in the Weald of Sussex, 1850–1950', *AgHR* 30 (1982), pp. 17–30.

⁶⁷ *London Gazette*, 5 June 1964; 'The farmer's chief gets a knighthood', *Daily Mail*, 13 June 1964, p. 7.

⁶⁸ MERL, AD2/4, AD2/5, AD2/6, AD2/7, AD2/8, AD2/9, AD2/10, AD2/11. The format of random sample tests whereby a person picked entries at random from several hundred unhatched eggs was first proposed by Hagedoorn at the World Poultry Congress in 1927. Until this format was adopted poultry breeders would select a small number of hens for the tests, the performance of which was recorded. Critics argued that it was statistically insignificant and that breeders relied on the strong performance of individual hens and ancestral breeding. Random sample tests were introduced in the USA in the 1950s, producing more statistically significant results. Hagedoorn, 'An improved method', pp. 95–8; Derry, *Art and science in breeding*, p. 117.

⁶⁹ For the debates in Britain during the 1960s about intensive and traditional production, see K. Sayer,

'Animal machines: The public response to intensification in Great Britain, c. 1960–c. 1973', *Agric. Hist.* 87 (2013), pp. 473–501.

⁷⁰ Whilst serving in the Food Production Department of the Board of Agriculture during the First World War, the Cambridge geneticist Reginald Crundall Punnett (1875–1967) developed sex-linked breeding whereby pure breeds of birds are crossed, their chicks being sexed at a day-old based on the colour of their plumage. This allowed the cockerels to be disposed of. See R. C. Punnett, *Heredity in poultry* (1923) and *Sex-linkage for egg production and table poultry* (1925).

⁷¹ For a copy of the first issue which was published on the 29 Nov. 1929, see MERL AD2/1.

⁷² For copies of *The National Laying Test Journal*, *The National Poultry Journal* (incorporating *The National Laying Test Journal*) and *Poultry Industry: the Official Organ of the National Laying Test, supported by the Daily Mail*, see MERL, periodicals Nat/Lay, Nat/Pou and Pou/Ind.

equipment being introduced.⁷³ The poultry houses that had been used for 36 years and accommodated 25 birds, were replaced with two large poultry houses, each accommodating more than 8000 birds. A new brooder house was built which allowed for 200 day-old chicks to be reared for three to four months, of which a random sample would go forward to the test houses. Eggs would be graded and there was a further control flock of birds to ascertain how environmental conditions affected commercial egg-laying hens. There would also be testing facilities for broiler chickens bred specifically for meat production which by this time were replacing utility breeds, reflecting the growing demand for table poultry. An article titled: 'Good Chicken Cheaper', published in *Farmers Weekly*, outlined how through testing at the National Test it was possible to rear broiler chickens with a live weight of eight pounds in 15 weeks and a comparable taste and flavour to high-quality table birds.⁷⁴

Objectives of the reorganization of the National Laying Trials included ensuring that the results obtained were statistically significant and that commercial egg and broiler producers had independent means of assessing strains that had a high profit potential. The trials were to be used by the BEMB for strain screening and they were to provide a shop window for pure breeds and commercial strains with particular reference to overseas markets. Lastly it was intended to place the trial on a secure financial basis. Open days were held attracting hundreds of visitors and were widely reported in the poultry press.⁷⁵ Articles about the National Test appeared in poultry industry journals such as *Modern Poultry Keeping*, *Poultry Farmer and Packer* and *Poultry World* as well as the farming press more generally such as the *Farmers Weekly* and *Farmer and Stockbreeder*.⁷⁶

A film titled 'Backing a Winner' sponsored by suppliers and produced between 1960 and 1969, was intended to show poultry farmers how the National Test could enable them to select the strain of bird most profitable for their particular system.⁷⁷ The purchase of stock could then be informed by results. It outlined how the test was organized. Entries were taken as hatching eggs, collected at random from the farm by a National Agricultural Advisory Service (NAAS) officer and taken to his local headquarters. There were 34 entrants with each breeder supplying 900 eggs. The eggs taken were picked at random from the previous day's production and taken to the NAAS local headquarters from where they were collected within two days by the National Test and taken to Milford. After hatching and sexing, each entry was reduced by random sampling to 300 first-quality pullet chicks. They were reared in two groups of 150 each to avoid any effect of environmental variation. Brooding was done by propane gas with heat kept on for five weeks. The film focused on the technical features and management practices which it described as typical of most modern farms. The stocking rate was one square foot per bird and water was readily available through tube feeders. Coarse ground chick meal was fed at the start, birds were vaccinated and conditions were standard for all birds. Eggs were collected and graded. Records of food consumption and mortality were included in the final published figures and it was stated that: 'The form shown by

⁷³ 'Big plans for national poultry tests', *Daily Mail*, 9 Mar. 1964.

⁷⁴ *Farmers Weekly*, 20 Mar. 1959.

⁷⁵ *Poultry Industry*, 10 July 1958.

⁷⁶ *Poultry Farmer and Packer*, 12 Mar. 1960. For press cuttings from the 1930s to the 1960s, see MERL, ET3/8-11.

⁷⁷ MERL, TR MAFF PH6/104.

entrants in the national poultry tests helps the farmer to be sure of backing a winner every time.' The film – the audience for which was clearly commercial producers – presented a positive impression of the modernized national poultry test going forward, although National Poultry Tests Ltd appears to have later (1967–71) sought financial assistance from government.⁷⁸ In many respects this marked a new phase in the development of poultry trials which is distinct from the earlier egg-laying trials.

IV

Having examined the history of early egg-laying trials in Britain, in particular those held at Harper Adams and the National Egg Laying Test (later the National Poultry Test), it is necessary to consider why they were so important. Specialist breeders of chickens specifically selected for egg production increasingly sold chicks and pullets to egg producers. Egg production shifted from a sideline activity in which producers tended to rear their own birds to producers – whose principal activity was egg production – purchasing selected strains of egg producing birds. The egg-laying trials played an important role in this transformation providing specialist breeders with the opportunity to advertise their superior strains of chickens and secure premium prices based on economic factors such as egg production, quality, size, feed efficiency, and mortality. They also enabled commercial egg producers to purchase more productive strains of chickens thereby increasing their profitability. A booklet produced by the GER to highlight the direct and indirect benefits of egg-laying tests stated that:

The direct value of these tests to the Utility Poultry Breeder lies in the fact that they afford the only possible means of publicly demonstrating and so advertising the laying capabilities of his strain, and they stand to him (the Utility Breeder) in exactly the same relation as the Show Bench does to the Poultry Breeder whose aim it is to breed and sell fowls bred to fancy types.⁷⁹

It went on to outline the wider contribution of the tests in not only emphasizing the need for owners to increase the productivity of their chickens, but also to adopt up-to-date methods of feeding, housing, and general management.

The emphasis on the importance of egg-laying trials for breeders was a recurring theme. At the World Poultry Congress in 1927, Alex McCallum of the Board of Agriculture for Scotland said in his paper about egg-laying tests that:

The breeder who wants to maintain the quality of his stock can never fold his hands and think his task is done. Year after year, the same care must be exercised in the selection of his breeding stock, and thus the laying test will continue to provide a helpful guide, a useful stimulus, and an informative standard of comparison.⁸⁰

In his description of a commercial poultry farm, Adrian T. Monck-Mason highlighted how egg-laying trials could aid the selection of stock with cross-bred birds used for egg production:

⁷⁸ TNA, MAF 293/228.

⁷⁹ MERL, FR DW AD2/1, *Dodnash Priory*, pp. 4–5.

⁸⁰ A. McCallum, 'Egg-laying tests', in *Report of proceedings of the World's poultry congress...* (1928), p. 81.

in 1939 it was 3000 Black Leghorn-Rhode Island birds.⁸¹ He wrote that no preference was shown to a particular breed, but rather: 'The practice is to analyse the results obtained in egg-laying trials, and to keep a careful watch upon the stamina of the popular breeds. Each year the birds required for the breeding pens are selected from the breeds which available data indicates have the highest stamina.'⁸² Clearly the results of egg-laying trials were used to inform commercial poultry producers' decisions as to which strains of poultry to keep and who to buy them from. Egg laying trials were held in other countries, for example, Canada, Denmark, Israel, Spain, and the USA, the results and reports of which were circulated widely.⁸³

In addition to these high-profile trials which attracted national and international entries, other national, regional and county based egg-laying trials were arranged by council agricultural organizers, agricultural education institutions and utility poultry societies, being listed in a National Poultry Council register of records in laying trials.⁸⁴ For instance trials first started in Wiltshire in 1920–21, but their increasing in popularity meant that by 1926–27 there were no fewer than 16 county tests. National trials were also started in Ireland and Scotland in 1913 and 1924 respectively with government-controlled tests being held in Northern Ireland and Scotland.⁸⁵ McCallum remarked that the emphasis, especially in county trials, had changed since originally conceived, with more focus on the management of flocks rather than simply the high-performing strains of birds. The objective of the county trials held in England were said to be 'to indicate the value of selected birds as potential breeding stock for egg production', whereas in Canada it was 'to stimulate interest in the breeding of birds for egg production.'⁸⁶ In effect, egg production became increasingly focused on economic performance: the most important attribute which was indicative of profitability was the number of eggs produced per bird.

Trials attracted entries from leading poultry breeders such as Harry Douglas Barley (1921–71) of Bay Tree Farm, near Kings Norton, Birmingham, a farmer, stockbreeder, and well-known agricultural writer.⁸⁷ Between the 1920s and 1950s he entered his birds into egg-laying trials. His collection includes certificates from international and national egg-laying trials such as the *Daily Mail* International Egg Laying Test and the National Egg Laying Test, those held at Harper Adams, and the National Poultry Show organized by Poultry World held at the Royal Horticultural Hall in London (Figure 4). He also entered birds into regional, county, and more local egg-laying trials such as the Bolsover Castle Laying Test, the Lancashire Utility Poultry Society International Egg Laying Test, the Yorkshire Federation Laying Test, the Worcestershire Laying Trials organized by Worcestershire County Council and the Serial Laying Test at the Breedryte poultry farm at Winthorpe near Skegness.⁸⁸

Barley mainly entered White Wyandottes, Leghorns, and Light Sussex breeds from 1921, and later from the 1930s Rhode Island Reds with which he won the British Oil and Cake Mills Limited (BOCM) Five Year Consistency Cup in 1952. His poultry performed very well and

⁸¹ A. T. Monck-Mason, 'A Commercial poultry farm', in S. G. Brade-Birks (ed.), *Modern farming: a practical illustrated guide* (3 vols, 1950), I, p. 71.

⁸² Ibid.

⁸³ MERL, FR DW AD2/12; White, *Report on a visit to farms in Denmark*, p. 26.

⁸⁴ MERL, D84/7/257–265.

⁸⁵ McCallum, 'Egg-laying tests', p. 79; MERL, D84/7/265.

⁸⁶ McCallum, 'Egg-laying tests', p. 79.

⁸⁷ MERL, D84/7.

⁸⁸ MERL, D84/7/169–252.

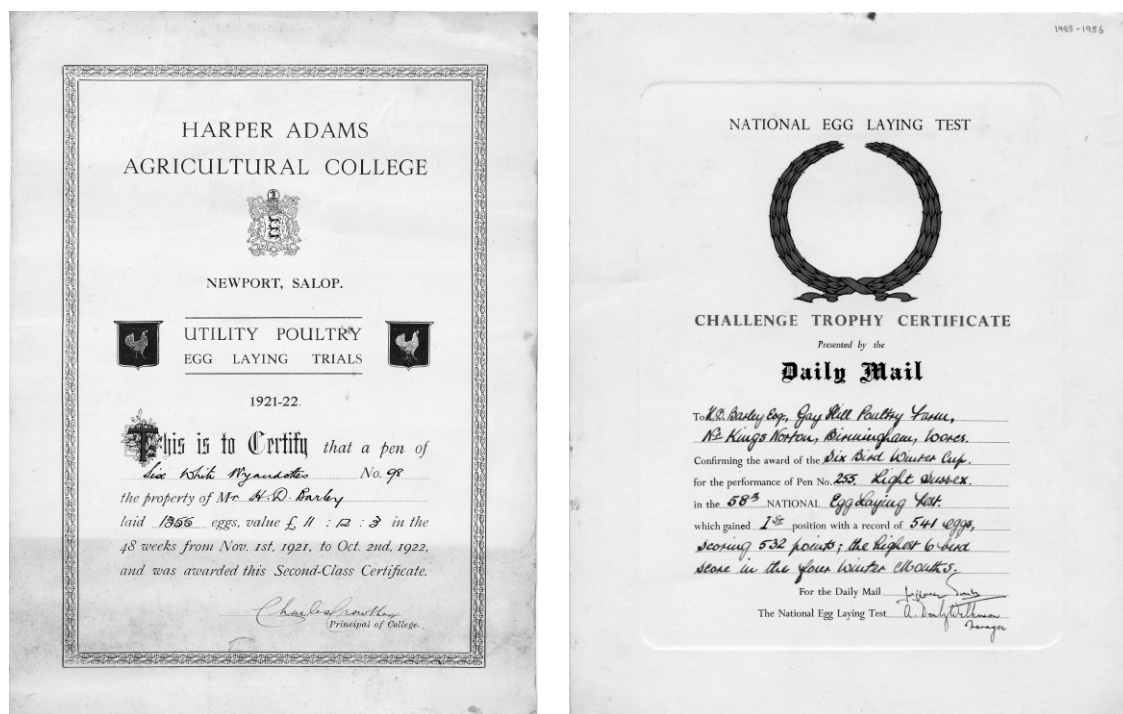


FIGURE 4 a and b Certificates awarded to H. D. Barley by Harper Adams Agricultural College for his entry in the laying trials for 1921–22 and the National Egg Laying Test sponsored by the Daily Mail. The former was for 11 months whereas the latter was for four winter months when egg production was at its lowest. Source: MERL, D84/7/169 and D84/7/246. (Reproduced by permission of the Museum of English Rural Life, University of Reading.)

consequently his reputation as a poultry breeder grew to the extent that he was selling globally. He also wrote articles mainly for *Poultry World*, spoke on poultry breeding and equipment and judged. As the example of Barley illustrates, egg-laying trials provided breeders with the opportunity to advertise their breeds and strains of chickens.

In the early 1950s publications stressed the need to acquire more productive egg-laying strains by taking local advice, consulting breeders and studying the results of egg-laying trials. Under optimum management it was suggested that each bird in an entire flock of birds could produce an average of 170 eggs per annum.⁸⁹ The importance of egg-laying trials that were promoted by public organizations with the intention of ascertaining the productivity of particular egg-laying chickens was clearly recognized. In a guide to modern farming the parallels between egg-laying tests and milk recording were highlighted and it was stated that:

Official trials have now been conducted all over the country, and in addition many breeders use trap nests and record the performance of their best strains. By the systematic use of egg-laying tests the laying capacity of our best breeds have been materially improved during

⁸⁹ D. Morris and H. R. C. Kennedy, *Poultry keeping for profit* (1952), pp. 66–74.

TABLE 1. Egg yields per annum (the number of eggs per laying bird)

Pre-war	149	1960-61	188	1975	229
1946-47	116	1961-62	191	1976	238
1947-48	120	1962-63	193	1977	240
1948-49	126	1963-64	197	1978	242
1949-50	133	1964-65	204	1979	247
1950-51	136	1965-66	204	1980	248
1951-52	139	1966-67	207	1981	250
1952-53	150	1967-68	211	1982	251
1953-54	161	1968-69	214	1983	258
1954-55	165	1969-70	218	1984	256
1955-56	168	1970-71	220	1985	258
1956-57	171	1971-72	226	1986	258
1957-58	174	1972	230	1987	261
1958-59	179	1973	228		
1959-60	184	1974	229		

Source: Data from Table 22.4 in H. F. Marks and D. K. Britton (eds), *A hundred years of British food and farming: a statistical survey* (1988), p. 237.

the last decade, and to-day there are a large number of strains of birds in commercial flocks with a proved egg-laying capacity, and the ability to transmit it to their offspring.⁹⁰

Agricultural statistics collected by the Ministry of Agriculture, Fisheries and Food (MAFF) indicate that there was a significant difference between the average for the poultry sector as a whole and the performance of birds in the egg-laying trials. Prior to the Second World War the figure was 149 per annum (per laying bird) and this actually fell during wartime as commercial egg production was forced to contract and it remained relatively low until increasing steadily from the 1950s to 261 in 1987 (Tables 1 and 2).⁹¹ The figures achieved in the early egg-laying trials do not appear to have been replicated in the national statistics, but this does not necessarily mean that they had limited impact. Arguably they revealed the egg-laying potential of specific breeds and strains of chickens under not necessarily ideal but certainly good conditions. However, during the period under study many flocks of dual-purpose chickens were retained, not focused exclusively on egg laying, but also to produce table poultry and there was a wide variety of performance between producers. Commercial producers, who kept flocks of poultry mainly for egg production, were in a minority during this period, and it is evident that these achieved much higher egg yields than those who regarded poultry keeping as a sideline activity. New innovations and technology like deep litter, straw yards, artificial lighting, and battery cages were not widely adopted by poultry producers in the 1950s.⁹² As

⁹⁰ V. C. Fishwick, 'Good Farming', in Brade-Birks (ed.), *Modern farming*, I, pp. 73-4.

⁹¹ H. F. Marks and D. K. Britton (eds), *A hundred*

years of British food and farming: a statistical survey (1988), p. 237.

⁹² Seddon, *Silent revolution*, p. 109.

TABLE 2. Poultry population for egg production (millions)

Great Britain	<i>Total fowls</i>	United Kingdom <i>continued</i>	
1885	12.4		<i>Laying fowls</i>
1908	32.4	1966	50.8
1913	33.1	1970	55.2
1921	29.0	1975	49.4
1925	39.0	1980	46.0
United Kingdom		1981	44.5
1929	55.5	1982	44.8
1930	61.9	1983	41.1
1935	75.1	1984	40.6
1938	69.1	1985	39.6
1942	53.5	1986	38.1
1945	62.1	1987	38.5
1950	96.1	1988	36.9 (provisional)
1955	86.9		
1960	103.0		

Source: Data from Table 22.2 in H. F. Marks and D. K. Britton (eds), *A hundred years of British food and farming: a statistical survey* (1988), p. 237. Since 1980 the agricultural statistics have included the average number of layers comprising pullets and hens on holdings of 40 or more standard man-days per year.

with other new practices like milk recording, there seems to have been a considerable lag.⁹³ Moreover, national averages for egg production might not necessarily be accurate as there was clearly under-recording and little attempt to assess the accuracy of the figures. Thus the impact of the egg-laying trials is not fully represented in the national agricultural statistics.

V

This article has outlined the importance of public egg-laying trials in measuring and assessing the egg-laying ability of chickens and promoting modern methods of production. In an age of rapid expansion in chicken numbers the evidence available suggests that trials might have played an important role in contributing to increases in egg production per bird, as some contemporaries certainly argued, and certainly set a publicly-available standard for what particular breeds could achieve. In the early twentieth century there was clearly a greater recognition of the need to increase egg production to reduce the reliance on imported eggs and meet increasing consumer demand in Britain. This was successfully achieved by developing breeds and strains of chickens with higher laying capacity, reducing the incidence of disease, improving housing, adopting technological innovations like artificial lighting and introducing new feeding regimes. Pioneering egg-laying trials such as those conducted at Harper Adams

⁹³ Martin, 'George Odium', p. 239.

and the National Egg Laying Test, later the National Poultry Test, reflected the need to improve the egg-laying capacity of chickens to increase egg production. Egg-laying trials also served a wider function in educating specialist commercial poultry breeders and producers and farmers about the importance of adopting more productive and efficient methods of egg production.

Finally, it is important to note that these egg-laying trials were funded and promoted as initiatives open to a wider public, whereas in the second-half of the twentieth century a small number of large multi-national companies developed hybrid hens through selectively cross-breeding the most productive strains of pure-breed layers, which have further revolutionized egg production. Further research is required to examine the role of these companies in increasing the number of eggs laid per bird. Nevertheless, in seeking to understand the unprecedented transformation of commercial egg production in Britain, it is important to appreciate the vital contribution of this early phase of public egg-laying trials.