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MARKET AND SOCIETY DRIVEN INNOVATIONS IN THE DUTCH RABBIT PRODUCTION SYSTEM

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ABSTRACT

As a result of the changing social position of animals in the western society, Dutch commercial rabbit farming operates under societal pressure regarding animal welfare. During the last two decades, the rabbit sector in the Netherlands has strategically chosen to focus on changing its housing systems for animal welfare improvement to better meet societal demands and – when possible - exploit associated added value markets simultaneously. The result is that, currently, all does are housed in 'welfare cages', the majority of meat rabbits is housed in *parcs* (welfare improved large collective pens) and antibiotics use is more than halved. Preparations have started to introduce group housing of does in commercial practice. The description of the cases Development of welfare cages, *Parc* housing and Group housing of does illustrate that increasingly, innovations are a combination between meeting societal demands (preventing legislative interventions) and exploiting added value markets. The change of the sector as a whole contrasts with other animal production sectors that generally form niche initiatives alongside the existing world market oriented. The proactive and farmer driven nature of the innovations also differs from developments elsewhere.

Keywords: meat rabbits ; society ; innovation ; animal welfare

INTRODUCTION

Commercial rabbit farming for meat production is a relatively small livestock industry in The Netherlands. Regarding the number of farms, it is about 1% of the size of the pig industry. There is a continuous pressure to innovate, as the sector operates in a difficult environment: resources (especially labour) are relatively expensive, and the societal pressure (especially regarding animal welfare) is substantial. During the last two decades, the sector has strategically chosen to focus on animal welfare improvement to better meet societal demands and possibly exploit associated added value markets simultaneously. Present contribution introduces the societal pressure regarding animal welfare, highlights some key innovations and concludes with some inferences on drivers and consequences of the innovation, in comparison with other animal production sectors

THE DUTCH RABBIT SECTOR IN ITS SOCIAL ENVIRONMENT

The Dutch society, in its attitude towards animal production, can be characterised as distant, critical/worrying but nevertheless inherently positive (Verhue and Verzijden, 2003; Termeer et al., 2013). Within society, there is limited factual knowledge on the conditions in which animal production takes place. A series of media-covered animal disease incidences each with massive eradication (1997 swine fever, 2001 foot and mouth disease, 2004 aviary influenza) brought about a societal view of heavy intensification and industrialisation framed with terms like as '*animal suffering*', '*animals as objects*' and '*animal industry*'. At the same time, kept animals (especially pets) in the western world are evolving into a higher social position. This increases the societal tension between animal production practices and societal (in fact urban) standards regarding animals. During the last about 15 years, Dutch urban groups voice increasingly against practices like bare husbandry conditions, non-outdoor access, unanaesthetised castration and tail docking in pigs, long distance transport and high mortality rates. Smart use of the media increased the impact. Two typical examples are the

celebrity-supported group 'Varkens in Nood' (*Pigs in distress*), who strategically combines scandals/excesses with fundamental systems criticism and 'Wakker Dier' (*Animal Awake*) who is especially successful in putting pressure on retail companies using media. There is another category of animal oriented NGO's, such as 'Dierenbescherming', whose strategy can be characterised as 'collaboration and negotiation' (Buurma & De Greef, 2014). A clear illustration of the societal attention for animal welfare in the Netherlands is the presence of a 'Party for the Animals' in the Dutch national parliament since 2006, and its introduction in several regional and local councils since.

Originally, the Dutch policy on animal welfare is based on Brambell's 5 freedoms. The last decade, a distinction is developing between the theoretical base for welfare *assessment* and for welfare driven husbandry *design*. For the latter, the approach is based on an explicit description of the animal needs. It was applied in husbandry systems design initiatives for several species (rabbits: Cornelissen et al, 2012), and makes a more clear distinction between requirements based on needs (animal biology) and requirements based on natural behaviour (De Greef et al., 2006, 2011). For science based welfare *assessment*, the approach of the European network Welfare Quality is followed, preferring animal based parameters rather than systems based parameters. For rabbits, a procedure was developed from this approach (Rommers et al., 2015).

In time, a development is seen from governmental legislation initiatives towards inspiring stakeholders to take responsibility. In 1992, a Dutch law *stated* that animals were only allowed to be held for production reasons if there are no welfare problems or if these problems can be tackled. For rabbits, an inventory (Blokhuis, 1995) listed the high mortality rates and the limitations for performing natural behaviour as the main problems. Possible husbandry solutions were recommended: alternative cage floors, roughage to stimulate normal foraging, pieces of wood serving gnawing needs, presence of platforms, increased cage height and shelter. Minimum sizes for floor space as defined in the Swiss legislation were mentioned (RDA, 1997). In 2002, a Dutch law was *prepared* to forbid cage housing of farm animals, triggering innovation #1 (see below). In 2009, the Dutch Ministry of Agriculture again issued a study report on the key animal welfare issues (*'Discomfort analysis'*, Leenstra et al., 2009) in which individual housing of does, the low-stimulus environment and the wire floor leading to foot injuries were seen as the main welfare concerns for rabbits. This inventory (including advises for improvement) was part of a larger policy development regarding animal welfare. In that same period, the Ministry of Agriculture *challenged* scientists, representatives from the rabbit sector & chain and representatives from NGO's to develop an inspiring future for 'society accepted rabbit production'. This was organised in a system innovations project (with considerable focus on animal welfare) by initiating a project called Konijnen op Koers ("*Rabbits on Track*", Cornelissen et al., 2012), delivering sketches of examples of more sustainable rabbit production systems, presented in public as a joint guide towards sustainable rabbit production systems by the stakeholders involved.

THREE KEY INNOVATIONS

Three successive innovations are described below. Together, they illustrate the substantial measures taken to enhance rabbit welfare through innovation of housing systems. Each has the organised Dutch rabbit farmers as the key actor, with their strategy to precede or prevent legal obligations. The welfare improvements were predominantly inspired by reducing key welfare infringements, as brought forward by the earlier mentioned studies and reports.

Innovation #1: The Welfare Cage

In 2002, a Dutch law was prepared to forbid cage housing of farm animals. For political reasons, the focus changed, and the urgency for new systems diminished. After this experience, the Dutch Rabbit Farmers Organisation chose the strategy to come up with self-imposed welfare standards ('Welzijnsverordening', 2006), in which the housing of the rabbits was regulated. The regulation was developed in collaboration with the major Dutch animal welfare organisation ('Dierenbescherming'), and was advocated explicitly by farmer representatives as a key part of the route towards maintaining societal acceptance. The most prominent aspect concerns the obligatory introduction of the so called "welzijnskooi" ("*welfare cage*"). The regulation put strict minimum housing standards to the sector as a whole. For example, the welfare cages for lactating does had to meet a wide range of standards including access to enrichment, a platform and a nest box provided with nest material and several criteria for the height and area of cage and platform. Also criteria for floor quality were set. Later, when research had shown that thicker wire mesh did not improve foot pad injuries (Rommers

and de Jong, 2011), a plastic mat covering part of the wire cage floor became mandatory. The self-imposed standard 'Welzijnsverordening' demanded that by 2016, all animals would have to be housed in this system, and by 2011 50% of the equivalent would have to be reached. The (not fully foreseen) improved rabbit productivity on the farms with this system caused an adoption faster than mandatory and expected. Currently, all pregnant and lactating does and their young are housed in this system, except for the animals in systems described in innovation #2 (parc housing of meat rabbits).

The key notions from the introduction and relatively fast adoption of the welfare cage are 1) the 'flight forward' strategy- away from governmental legal intervention; 2) the constructive NGO-support and 3) the unexpected technical and economic benefits.

Innovation #2: Development towards meat rabbits in Parcs

Alongside the Dutch attention for the welfare cages for does, and their young (up to slaughter), research and NGO-attention in Belgium had a higher focus on the fatteners. Based on NGO contacts, Belgian retail decided in 2014 that only rabbit meat origination from 'parcs' was to be sold, followed by a Belgian Royal Degree (law), demanding to house meat rabbits in parcs from 2016 onwards (with exceptions based on some transitional rules). A parc is a collective pen, where (according to the Belgian standards) at least 20 fatteners are housed providing at least 800 cm² per rabbit. Several environmental enrichments are required, especially roughage, a platform and shelter. Slaughterhouses in Belgium used price premiums to stimulate farmers to switch to parcs. A few Dutch farmers had been experimenting with parcs for several years already, but disappointing technical results caused reluctance to convert to this type of systems. The perspective that the market for non-parc meat diminished, and the presence of a price premium changed the reluctant adoption of parcs on Dutch farms into a rapid transition. Currently (early 2016), it is estimated that 60-70% of commercial meat rabbits are housed in parcs. The switch to parc housing implies that rabbits generally are no longer housed in their birth cage after weaning, but are mixed into large groups. This affects not only the welfare of the animals, but also changed the farms structurally in their housing and management needs.

The key notion from the rapid transition towards parc housing of meat rabbits is NGO-based market pull. The sudden change in the demand from retail, bringing about a price premium set by the slaughter houses forced (and facilitated) farmers the switch systems, despite earlier reluctance.

Innovation #3 Group-housing of rabbit does

Research on group-housing of rabbit does started in the Netherlands in the late nineties. Group-housing facilitates social contact between does, allows more total space and environmental enrichment, and permits the expression of natural reproductive and maternal behaviour (Ruis, 2006). Until 2005, research focussed on development of a full group- or colony-housing system with individual access to nest box by using individual electronic recognition to avoid high kit mortality due to does littering in the same nest box. A group-housing system was developed and tested at three commercial farms. The expected advantages for meeting the behavioural needs of the rabbits were confirmed, but aggression between does and poor workability for the rabbit farmer prevented practical implementation (Rommers and de Jong, 2005). Recently, as the follow up of the finished transition towards welfare cages, the challenge of group housing of lactating does was taken up again. A new approach was followed, developing a group-housing system in which does were housed individually during the first part of lactation (mimicking the natural conditions where rabbit does built a nest outside the burrow) and grouped in the second part of lactation when kits start to get out of the nest box ("part-time group-housing"), combining group housing for the does with workability aspects for the farmer. A pilot experiment where rabbit does were group-housed in parcs for meat rabbits revealed low levels of aggression between does (Rommers et al., 2014). Currently, studies are planned to deal with health disadvantages and to exploit the possibilities of combi-pens – improved welfare cages that can be transformed to a multi litter group pen during lactation. Also, market opportunities for exploiting the added value are explored.

The key notions of this starting innovation are 1) the choice to combine parc systems (generally meant for meat rabbits) with part time housing, implying a continuity with the current systems and 2) the ambitious jump towards solving the last major housing-related welfare issue for does.

CONCLUDING REMARKS

Current study highlights the rapid changes in housing systems, driven by societal urges regarding with regards to animal welfare. Two major aspects that do play a major role in innovation have not been addressed here. First is the positive interactions between Belgium and The Netherlands in innovating their sectors. Second is the current high attention for reduction in antibiotic use, leading to more than 50% reduction since 2011. During the last 10 years, a full sector switched to housing systems providing well above world level animal welfare. The change of the sector as a whole contrasts with other animal production sectors, that generally form niche initiatives alongside the existing world market oriented. Key drivers were the farmers' flight forward to meet societal urgency and a constructive role for the major Dutch animal NGO.

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