



Small-scale Integrated Eco-farm: Conserving Beijing You Chicken and Supplying Premium Woodland Free-range Products

Company/Organization

Beijing Lvduole Co., Ltd. (Greenay Farm)

Author of this report

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Abstract

Beijing Lvduole Co., Ltd., founded in 2011, is an agricultural company dedicated to the woodland free-range welfare farming of Beijing You Chickens. The company adopts an integrated ecological farming system. Building upon traditional woodland free-range, they have gradually elevated farming practices to meet international high animal welfare standards by improving the living conditions and implementing stress relief techniques for Beijing You Chickens. With its high-quality products, the company has attracted numerous high-end customers and has been honored with the prestigious Five-Star Poultry Farming Good Chicken Award and Good Egg Award by a leading international organization, Compassion in World Farming (CIWF).

Keywords

Integrated farming system, woodland free-range, animal welfare, local chicken breeds, Beijing You Chicken

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Case Introduction

Background

Beijing Lvduole Co., Ltd., Greenay Farm (hereinafter referred to as “Lvduole” or “the farm”) was founded in 2011. Covering a total area of 438 mu (approximately 72 acres), the farm utilizes 200 mu (approximately 33 acres) for woodland free-range farming and 138 mu (approximately 22 acres) for cultivation. Unlike other farms, Lvduole emphasizes an integrated farming system that integrates planting and farming.

Since 2012, when the first batch of Beijing You Chickens was reared, Lvduole has adopted free-range farming practices. Initially, Lvduole considered free-range farming solely from the perspective of product quality and food safety, seeing its market potential, and thus commenced free-range farming of Beijing You Chicken. However, the farming methods at that time were relatively rudimentary and traditional, lacking an approach to upgrading the farming model with consideration for meeting animals’ nature.

Fast forward to today, Lvduole’s farming method has significantly surpassed traditional free-range approach, meeting high animal welfare standards. Yet, what are the differences between traditional free-range methods and international high animal welfare standards? Can all free-range animals be considered as meeting high animal welfare standards? Many consumers and even producers might mix up these concepts. In fact, the two concepts are not equivalent. Free-range farming lacks quantifiable standards in China: raising chickens in one’s backyard is considered free-range; chickens enclosed within a fence may be labeled free-range; even chickens free to move within a closed shelter might be considered

About Integrated farming system integrating planting and rearing

Before the establishment of Lvduole, the team members were aware of certain issues in contemporary agricultural production systems. For instance, they incur excessive cost to other industries to comply with highly efficient production, including substantial energy waste (for example, the need for certain organizations to manage animal feed and excrement). Also, the market is dominated by agricultural products that exhibit the highest production efficiency, resulting in a trend towards a more uniform and singular range of agricultural products.

Lvduole’s ecological farming cycle encompasses the collection of organic manure and excrement applied to target land areas, while the uncollectable excrement produced in the forest undergoes natural decomposition. A part of vegetables and grains produced are used as animal feed, while the rest is supplied for insects, and the insects are utilized for Beijing You Chicken rearing, establishing a continuous cycle.

Normally, each batch of Beijing You Chickens have a rearing cycle of around two years. After all chickens in a house are slaughtered, the farm cleans out the cushion material, which contains a significant amount of chicken manure and decomposed organic matter. After brief outdoor composting, it can be directly returned to the land. The farm cultivates diverse native species of vegetables. Most of these vegetables are non-hybrid species, allowing for self-seeding, resulting in a stable cycle. This strategy provides customers with diverse choices of native vegetable species, avoiding product singularity.

The integrated farming system explored and practiced by Lvduole effectively reduce the energy consumption associated with other industries and addresses the issue of homogeneous agricultural products in the market. Furthermore, as a small-scale farm, the establishment and progress of the integrated farming system also become more manageable, making the case more replicable.

free-range. On the contrary, the farming method meeting international high animal welfare standards, entails a series of quantifiable metrics to ensure the animals' living conditions.

Case story

Transitioning from conventional free-range chicken farming to an elevated rearing standard

In 2016, Lvduole welcomed Mr. Qi Weitian as the current Operations Director and Production Manager. During his studies in Australia, Mr. Qi closely observed numerous animal conservation initiatives. After joining Lvduole, he took up a part-time advisory role with the World Animal Protection Association. It was during this period that Lvduole established connections with experts from the Beijing Forestry and Agriculture Academy who had a comprehensive understanding of welfare farming standards. Consequently, Lvduole began to study and adopt this approach, recognizing its remarkable alignment with their Beijing You Chicken farming methods. The provision of ample space for free-range animals is a key parameter for animal welfare, laying a strong foundation for Lvduole's transformation and upgrade towards a more advanced rearing model.

To achieve more comprehensive compliance with welfare farming standards, Lvduole revamped its previous methods. Firstly, their free-range model allowed significant space for chickens to roam—each free-range chicken coop can accommodate over 100 Beijing You Chickens, with a space of 20 square meters per coop and outdoor area covering about 1/6 acre per coop. Beijing You Chickens, specifically chosen by the farm, offered several advantages over commercial breeds: better

Next, we will explore how Lvduole has gradually evolved from traditional woodland free-range farming to the method meeting international high animal welfare, successfully pioneering the market for such products.

adaptability to the environment, higher disease resistance, and overall resilience. As a local breed in Beijing for nearly three hundred years, these chickens have adapted to the local outdoor environment, suffering from less stress caused by the environment. Addressing specific aspects, the farm, following international animal welfare standards, enhanced the lighting conditions in the coops, planned and designed the number of perches, drinkers, and egg-laying boxes for each chicken, along with the height and angle of the perches. Moreover, the company made corresponding adjustments and improvements during the chick brooding period.

Challenges and strategies in upgrading free-range chicken farming

Beijing You Chickens free-range farming faces numerous challenges, and to achieve higher animal farming standards, Lvduole has significantly ramped up its efforts now. Primarily among these is the issue of stress. According to Mr. Qi's expertise, fear can at times have a more profound adverse impact on animals than actual physical harm. In the first three to four days after hatching, weaker chick groups may cower in corners, afraid of dominant groups, thereby hindering their feeding. To address this, Lvduole adopted a method inspired by pig farming (i.e. setting barriers among pig groups to avoid fighting). During the mixed-rearing period, partitions were strategically placed between dominant and

weaker chicken groups, obstructing the sight for the latter. This approach proved highly effective – once they cannot see the dominant groups, the weaker chicken groups started eating without disturbance.

However, conflicts between stronger and weaker groups extend beyond the perinatal days. Given the longer free-range farming periods, animals would inevitably experience sexual maturity. Upon maturity, roosters exhibit intense fighting behavior due to territorial instincts, resulting in substantial harm, not only to themselves but also to surrounding hens. While many intensive farming enterprises resort to beak trimming, Lvduole avoids this practice to prevent additional suffering. To resolve this issue, the farm has experimented with various methods. An effective measure is expanding the rearing area and adjusting the rooster-to-hen ratio (at least 1:5), allowing weaker chickens more space to avoid severe injuries.

Disease control is notably more complex in free-range systems. Unlike intensive caged farming, where the environment for chickens is entirely controlled, free-range systems entail minimal human intervention. The more open environment can lead to stress or diseases among chicken groups due to environmental changes, exposure to external disease sources, and uncontrollable factors like wild animals or parasite infestations, complicating the prevention, control, and treatment of diseases among chicken flocks.

Overgrazing of understory forage by free-range chickens also poses a persistent challenge. In free-range systems, grass is planted under forests, which is essential to the chickens' diet. Yet excessive grazing depletes grass, causing its demise and necessitating replanting. The regeneration period of replanted grass often requires confining the chickens. However, this dilemma remains partially unresolved.

Some intensive farming enterprises employ forced molting in chickens, inducing stress in aging hens to trigger another egg-laying phase. However, the Beijing You Chicken is not a breed with high egg production rate, and forced molting contradicts the principle welfare animal farming method which prioritizes respect for animals' innate behaviors. Hence, Lvduole refrains from implementing this practice. Due to the strong approval of the farm's rearing practices by the established customer base, Lvduole's clientele remains relatively stable. Therefore, despite not using techniques like force molting to boost egg production, the prices of free-range eggs from Lvduole remain stable and unaffected by market fluctuations.

Typically, ordinary egg-laying chickens grow faster than Beijing You Chickens. Companies focusing only on egg-laying chicken farming usually conduct male chick culling. However, Lvduole's Beijing You Chicken serves as a dual-purpose breed, eliminating the need to distinguish between egg-

About Beijing You Chicken

Beijing You Chicken is a local breed with a history spanning around 300 years in Beijing. As a traditional livestock breed, it is well suited for outdoor free-range rearing, boasting excellent adaptability to natural conditions and outstanding meat and egg quality. However, its drawbacks include lower growth rate and egg production rate compared to specialized meat- or egg-producing chicken breeds. With the recent rise of hybrid breeding techniques, specialized egg- and meat-producing chicken breeds have gradually dominated the market, leading to a decline in the rearing of Beijing You Chickens. By the late 1970s and 1980s, these chickens were on the brink of extinction.

In the 21st century, amidst rapid economic development, consumer demands are becoming increasingly diversified. As a result, the market demand for Beijing You Chickens have steadily grown. More consumers are drawn to its unique flavor and the historical and cultural significance it embodies.

laying and meat-producing chickens. As a result, Lvduole does not practice male chick culling.

Additionally, Lvduole annually maintains and reseeds surface vegetation in the rearing area. The farm primarily cultivates chicory and clover – selected forage grass that offer nutritional benefits for the chickens. The presence of adequate vegetation within the free-range habitat signifies a farming process in line with animal welfare. Overgrazing by free-range chickens can deplete vegetation, not only affecting the plants themselves but also leading to reduced insects and microorganisms, stiffened soil, and increased parasites. Consequently, the environment deteriorates. Well-maintained vegetation enriches the environment, providing food for the chickens and promoting a healthier habitat.

Presently, Lvduole collaborates with several academic institutions, including China Agricultural University, Chinese Academy of Agricultural Sciences, Chinese Academy of Sciences, Beijing University of Agriculture, Beijing Academy of Agriculture and Forestry Sciences, Beijing Animal Husbandry Station, Beijing Association for Science and Technology, Shunyi District Association for Science and Technology. Within the farm, there are expert working stations, science and technology courtyard, and model fields, in which partner universities conduct experiments that contribute to farming advancements every year. These collaborations focus on areas like grass planting and management, choice of suitable grass varieties, outdoor disease prevention, and feeding recipes for Beijing You Chickens. These advancements stem from experimenting with practical farming conditions and needs, integrating academic expertise into farm operations for a more progressive farming approach.

About Science and Technology Courtyard

According to the Beijing Academy of Agriculture and Forestry Sciences (BAAFS), the science and technology courtyards are characterized by on-site research conducted by agricultural scientists and graduate students, providing farmers and production cooperatives with zero-distance, zero-threshold, zero-delay, and cost-free technical services. The program aims to achieve dual goals (high crop yields and efficient resource utilization), guiding farmers toward sustainable intensification while promoting rural cultural development and agricultural institutional innovation, thereby exploring pathways for modern agriculture's long-term sustainability.

On August 16, 2019, BAAFS inaugurated its first science and technology courtyard in Lvduole.

Marketing and sales

As per Mr. Li Zhe, the current Vice General Manager of Lvduole, the company adopted a straightforward market strategy from its inception. They believed that customers in Beijing were able to invest in slightly pricier but better-quality agricultural products. However, the challenge is to boost customer inclination to purchase these goods. “We believe that such a farming approach is more appealing to consumers and allows for better quality control of the products,” explained Mr. Li.

The development of Lvduole presents a gradual increase in customer engagement. Initially, the farm relied primarily on word-of-mouth to attract and retain customers; later it extended to corporate clients, utilizing the farm as a venue for team-building activities; and finally, it evolved into a stable procurement channel for businesses. “It’s a gradual extension and penetration process,” as stated by Mr. Li, “However, the fundamental reason customers choose us is due to their appreciation of our product quality and agreement with our animal welfare farming practices.”

Presently, Lvduole is not just a welfare egg-laying hen production farm; it also provides customers with the opportunity to participate in various farming activities. These include parent-child activities for families and team-building activities for corporations. This approach strengthens the bond between Lvduole and its customers. The farm also hosts regular member activities, offering comprehensive farm tours for members to understand the source and production process of the food. This transparent business model continuously enhances customer loyalty and effectively promotes the brand.

Apart from individual consumers, Lvduole has established long-term partnerships with several reputable institutions, such as Beijing Wuhu Agriculture, the Chinese Academy of Forestry, the Beijing Securities Regulatory Commission. Upstream in the industry, Lvduole is collaborating with some larger enterprises. These enterprises are intrigued by Lvduole's farming model and the chicken breed and seek to determine whether their feed development is suitable for this farming model and breed. Meanwhile, they wish to draw from Lvduole's experience to upgrade their current intensive laying hen farming and identify the

strategic direction of future investments in expanding farming facilities.

In terms of pricing, a single Beijing You Chicken from Lvduole is priced between 150 to 200 RMB (approximately 20 to 27 USD), and each egg is priced at 4 RMB (approximately 0.55 USD). Although the product prices are indeed not low, Mr. Li and Mr. Qi noted that they meet the market demand for high-welfare, high-quality, healthy animal products and they are often bought by customers as high-end and healthy gifts.

With the introduction of cage-free facilities by the prominent European poultry and livestock equipment manufacturer "Big Dutchman", Lvduole initially held concerns about the potential impact of these "new technologies" on the farm's operations. However, after observing for a period, the team found that the actual impact was minimal. Lvduole, primarily operating on a membership basis, has established a relatively stable customer base. Trust in the eggs produced here ultimately stems from the faith in the farm's production philosophy and practices.

Results and Impacts

- Lvduole was awarded Five Stars in Good Egg Award by Compassion in World Farming for meeting the following requirements in 2017:
 - Basic conditions (including cage-free rearing, use of laying houses, etc.) – Achieved
 - Indoor environment enrichment – Promised to achieve
 - Expansion of activity space (free-range setting) – Achieved
 - No beak-trimming – Achieved
 - No male chick culling in chicken species for dual meat and egg production – Achieved

- Lvduole was awarded Five Stars in Good Chicken Award by Compassion in World Farming for meeting the following requirements in 2017:
 - Basic conditions, including maximum rearing density of 33 kg/m² and maintaining daily records - achieved
 - Indoor environment enrichment - committed to achieving
 - Using slow-growing chicken breeds - achieved
 - Increased activity space (free-range environment with maximum rearing density of 27.5 kg/m²) - achieved
 - Responsible management (no beak trimming) – achieved
- Stable production and profit: Lvduole currently maintains around 10,000-12,000 Beijing You Chickens, yielding approximately 3,000 eggs per day, resulting in an annual income of 4.5-5 million yuan, with a profit margin of 1%-3%. For small-scale farms practicing high-welfare farming, this is already very challenging.
- Conservation of traditional chicken breeds: In addition to conserving the nearly extinct Beijing You Chicken, the farm has also established a chicken breed display park, currently home to more than 40 non-commercial breeds from various parts of the world.

Future prospect

Discussing the future development of the company, Mr. Li expressed the desire to collaborate with like-minded partners. The aim is to steadily increase production on one side and expand its scale; on the other hand, Lvduole seeks to expand its business operation and boost sales through promotion. The company has currently applied for a national project aimed at establishing a specialized tourism section at the farm to better promote welfare animal farming practices to the public. As the farm also sets a science and technology courtyard, Mr. Li is highly optimistic about the prospects of this popularization initiative.

Regarding the future outlook of the egg-laying and meat chicken farming industry, Mr. Qi maintains a cautiously optimistic outlook. He indicated that though high animal welfare farming standards will undoubtedly affect production efficiency, its higher-quality products will also bring more market value and consumer recognition. Extending this practice nationwide will involve dealing with the living conditions of hundreds of thousands of laying hens significantly. However, this change faces challenges. It is relatively feasible to improve the living environment of 20,000 chickens in small-scale farms like the Lvduole farm, but changing the national environment will pose more challenges. This process is not only influenced by international environment (like policy, trade) but also requires more policy support and a shift in consumer awareness. Nevertheless, there are some positive signs. In recent years, several large enterprises such as CP Group, Beinongda Technology Co., Ltd., and Happy Egg Agriculture Development Co., Ltd. have successfully adopted free-range or shed-raising methods, indicating a hopeful future instead of a bleak one.

Discussion

Through the gradual evolution from traditional free-range farming method into meeting international high animal farming standards, Lvduole has achieved remarkable results. Faced with various challenges, the farm has also showcased outstanding innovation. Through practices like aiding the stress, disease control, and environmental vegetation maintenance, Lvduole has set an example for the entire industry with its humane and eco-friendly farming methods. Lvduole has not only established a stable market but also has the potential to attract more producers in the farming industry to adopt farming practices for animal welfare.

Case Analysis

Dimensional analysis: levers of change employed in the case

Food production and supply	Production	Lvduole has progressively evolved from traditional woodland free-range farming to meeting international high animal welfare standards. During this process, Lvduole’s partnership with several research institutions, and relevant organizations led to significant technological innovation and breakthroughs in the farming domain, boosting both production efficiency and product quality.
	Conservation	Through an ecological farming cycle, the farm has achieved a considerable level of self-sustainability on a small scale. This helps in mitigating the energy consumption and carbon emission typically associated with other industries and sectors adapting to intensive production methods. The farm’s efforts in pasture maintenance and reseeded have notably enhanced the vegetation, effectively reducing soil erosion and ecological degradation.
	Livelihoods	On the one hand, the emphasis on welfare farming increased the value of the farm’s agricultural products, while the small-scale ecological agricultural practice directly connects with consumers, thereby decreasing the intermediary’s profit deprivation. Both factors contribute to an increase in the income of producers.
Food environment	Policies and Regulations	The operational model of the farm closely aligns with the principles outlined in documents such as the 14th Five-Year National Agricultural Green Development Plan and the Guidelines on Promoting Ecological Farm Construction released by the Chinese Ministry of Agriculture and Rural Affairs. These directives aim to accelerate the construction of ecological farms and drive the green and low-carbon transformation in agriculture.
	Social norms	The farm’s specialized science and technology courtyard, along with expert workstations, provides a conducive environment for

		on-site research activities. Over time, the research outcomes in animal husbandry will further fuel sustainable development in the agriculture and food industry.
	Accessibility	The location of the farm is close to Beijing's urban area, reducing various transportation and delivery steps, facilitating direct and convenient access to the products for the customers.
Food demand	Consumer position	Lvduole has strategically positioned itself to target higher-income consumers in Beijing who are inclined to consume products with higher quality and prices.
	Information and education	By facilitating consumer visits, membership activities, and diverse engagement strategies, the farm offers consumers a firsthand understanding and experience in high-quality rearing, healthy food, and the preservation of traditional poultry breeds. This approach significantly enhances consumer trust in the farm's enterprise and products while boosting acceptance of high-quality rearing method among consumers.
	Behavior change	The farm's incremental approach influences a transition in consumer behavior, starting from individual consumers to corporate and institutional engagement. Beginning with organizing visits for individual customers, the farm later attracts companies where these individuals work, fostering team-building activities and broadening the customer base. Eventually, this leads to the establishment of collaboration with these enterprises, encouraging the purchase of the farm's high-welfare products.

Addressing the pillars of sustainable development

PEOPLE Nourishing everyone for health and wellbeing	Lvduole upholds high standards in its welfare farming practices, enabling Beijing You Chickens to live in an ecologically conducive environment that aligns with their natural behavior. By abstaining from excessive use of chemical medications, the farm ensures the quality of both chicken eggs and meat, thus enhancing the health benefits for consumers.
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	The farm's development of an ecological agricultural cycle naturally offers consumers a diverse array of farm products, breaking the market monopoly of a singular farm product to some extent.
PLANET Producing in harmony with nature	Small-scale ecological agricultural recycle minimizes resource dependency and environmental effect through closed-loop material flows. Besides, the farm maintains and replenishes pastures, effectively reducing soil erosion and preventing ecological degradation within the farm's ecosystem.
PROSPERITY Inclusive, transformative and equitable recovery for the 2030 Agenda	The welfare farming practices heightens the economic value added of agricultural products, ultimately boosting the income of agricultural producers. This exploration of such a model holds promising prospects for low-profit industries, such as animal husbandry.