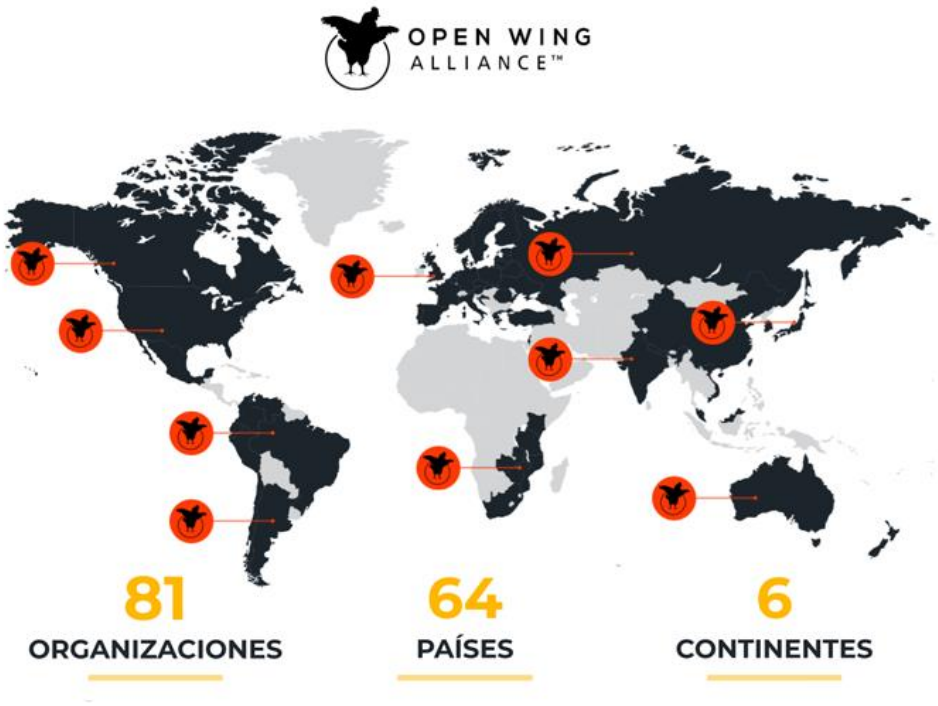
“CAGE FREE PERU 2020”

Lima, Peru
2020

1. Introduction

ARBA is a non-profit organization founded in 2008 and a member of the Open Wing Alliance since 2017. As representatives of this coalition in Peru, ARBA's mission is to continue with the common goal of OWA's global campaign: to free egg-laying hens from the cruel life in battery cages as well as ensuring more dignified living conditions for production animals.



Currently, more than 90% of egg production in Latin America comes from caged hens. Peru is no exception; 98% of hen eggs distributed in the country are from caged laying hens and the percentages are increasing. Our goal is to achieve commitments with large and small companies that make the decision to eliminate battery-cage eggs from their supply chain; being able to opt for cage-free eggs or, even better, opt for a vegan consumption.

We have been able to secure agreements with the International Bakery, the Andino Club Hotel and the Hilton Hotel chain; as well as restaurants like La Gloria, La Tiendecita Blanca, Bocadio, Cate Tasting Room, La Bodega Verde,

among others. We have also secure agreements with hotels and restaurants in Cusco's Sacred Valley; and in vacation spots on the southern beaches of Lima. Others are in the process of announcing their commitment.

2. General overview

Birds can experience emotional states such as pain or frustration. They are beings capable of feeling emotions and therefore it is necessary to apply ethical considerations to poultry production, as well as to find a way to ensure satisfactory welfare with production animals (Nicol C. and Davies A.).

Hens share the same diversity of behavior that is observed in their wild ancestors; they congregate in small groups that have a complex organization based on a hierarchy where the strongest rules. Since they are prey animals, they often use trees for roosting and as means of escape from predators. Moving between feeding times involves walking considerable distances and they are able to fly short distances (Arey D. 2004). Before laying eggs, the natural behavior of hens is to build a nest in order to hatch them.

They spend approximately 95% of their lives in cages. Many of the animal welfare problems seen in caged hens are the result of the frustration of not being able to perform their natural behaviors. The confined space and sterile environment are an impediment to the natural behavior patterns of their species (Arey D. 2004).

In the wild, hens spend more than 50% of their time looking for food, which means that foraging, pecking, and floor-scraping behaviors share the same amount of motivation as other activities. They also engage in behaviors such as preening, ground bathing, and flapping (Arey, D 2004).

In battery cages, they usually have constant access to food so that they do not need to peck, however, this does not happen. Whenever they can, they will peck and forage elsewhere, instead of eating from the open-access site. The inability to peck will result in pecking being re-directed to other hens. Eventually, feathers are plucked by other birds and serious injuries develop. What may begin as non-serious pecking behavior can quickly escalate to cannibalistic behavior in a cage with no escape; that is where the industry's solution is to cut off the hens' beaks,

a very painful procedure that includes cutting through bone, cartilage and soft tissue. The tip of the beak contains a large innervation and the hens continue to feel pain for a long time after the operation (Arey D, 2004).

Normally, hens spread their wings twice an hour and fly twice every five hours; but by living in cages, they are unable to move freely in the confined space in which they live. The lack of freedom to exercise leads to brittle bones and weak muscles; the incidence of broken wings can be 6.5% in battery cage hens compared to 0.5% in cage-free hens (Arey D, 2004).

Birds have pneumatic bones which are part of the skeletal system and aid in breathing; if a bird is restricted to the point that its breast bone cannot move, the animal will suffocate (Brower et al, 2013). Additionally, the absence of substrate on the floor means that they will not be able to build a nest to lay their eggs, perform soil baths, perch, or preen properly, which can cause chronic frustration (Arey D, 2004).

On commercial farms one person can be in charge of 20,000 hens; which combined with the cages layout and poor lighting, means that it is almost impossible for one worker to check each hen individually. This is why sick or injured hens are not identified. Additionally, cages are highly dependent on food supply, temperature control, among other things, on automatic systems that could fail (Arey D, 2004). The growth of beaks and claws goes unnoticed and can become trapped in the fences; while the cage structure itself can generate feather drop, bruising and abrasions.

3. Poultry industry in Peru

The national poultry industry is mainly concentrated in the coastal region and close to the most important consumption centers in the country. In April 2020 it participated with 21.0% within the Gross Value of Agricultural Production (poultry 17.8% and eggs, 3.3%) and is positioning itself as the first source of animal protein at the national and regional levels. In April 2020, the Livestock Sub-sector shows a moderate increase of 1.0% compared to the same month of the previous year, mainly influenced by the behavior of the poultry activity, which had an increase of 2.7% (poultry 2.9% and egg 2.1%). In commercial chicken eggs, the regions with the highest contribution were Ica (41.2%), Lima (27.4%), La Libertad (16.0%) and Arequipa (3.6%) (SIEA, 2020).

In Peru, poultry farming represents 26% of the country's agricultural production, where 30 million hens produce 500 thousand tons of eggs annually. Being the daily consumption per capita of 55kg nationwide. In Lima, 308 eggs are consumed per person every year (APA, 2020).

The production of hen’s eggs in a conventional way (in battery cages) represents 98%, with only 2% of hens being cage-free with no specifications as to the level of freedom they have, whether it be from grazing or organic production (SIEA, 2018). There are approximately 10 medium to large companies that represent 50% of egg production, while the other 50% come from small, usually informal producers (APA, 2020).

In the country, measures are currently being taken in collaboration with the state to control New Castle disease, as Peru is not yet considered free of this disease (APA, 2020).

4. Animal Welfare

The concept of animal welfare refers only to the state of the animal as opposed to when we talk about how to treat an animal where other terms such as animal care or compassionate treatment are used. The term animal welfare then refers to how an animal copes with the conditions in its environment. According to the OIE (2014), an animal is in good welfare conditions if (as indicated by scientific evidence) it is healthy, comfortable, well fed, able to express innate forms of behavior and if it does not suffer from unpleasant feelings of pain, fear or uneasiness.

In order to safeguard animal welfare, the 5 freedoms granted to animals were developed: to be free from thirst and hunger, free from discomfort or unpleasantness, free from pain, injury and disease, free to express their natural behavior and free from fear and stress (Romero et al, 2011). However, the 5 freedoms are based on avoiding negative situations instead of emphasizing the positive ones, due to this the 5 domains of animal welfare are created, which promote positive experiences and mental states. These are fulfilled, for example, by providing adequate nutrition to meet an animal's biological needs and food requirements, by providing access to a complex, variable and stimulating environment, and by applying good management by staff and veterinary care.

It is important to have a positive emotional state derived from the presence of positive experiences and sensations, avoiding and minimizing negative experiences, thus safeguarding and ensuring animal welfare; this can be achieved when physical and psychological needs are controlled (Mellor, 2013).

The experiences of the fifth domain are a key element of animal welfare. An animal can have positive or negative emotional states and it is the balance between these subjective experiences that can influence an individual's quality of life. (Mellor, 2013).

5. Stress

It is an indeterminate response of the organism to adverse environmental conditions, which produces physiological and metabolic adjustments to maintain homeostasis; the three areas affected in production by this problem are: growth, reproduction and resistance to disease (Hessel et al, 2006).

The response to stressors requires a progression of events that begins with the detection of the threat and sending of signals, generating the activation of neurophysiological mechanisms as a biological effort to resist and prevent further damage. Sensory receptors not only receive the information, but also transform it into nerve signals for the cognitive and non-cognitive centers of the nervous system (or for both), in order to generate a coordinated response to the challenge. The central nervous system, endocrine system and immune system interact responding to stressful stimuli in a coordinated way and influencing the behavior of an animal. The presence of hormones, neurotransmitters and receptors common to the three systems confirms that there is communication between them (Von Borrel, 2001).

Chronic stress consists of a state of ongoing physiological activation, which occurs when the body experiences stress from various factors or continuous exposure to the same acute stressors, a stage in which the autonomic nervous system rarely has the opportunity to activate the relaxation response. In this case, there is an overexposure to stress hormones, which produces a biological cost sufficient to alter biological functions and produce distress. Chronic stress coincides with a long-term state in the animal, such as a serious health problem that does not allow its satisfactory recovery, where the intensity and duration of the suffering contributes to the severity of the animal's response. Therefore, chronic stress is a condition of bad adaptation that can be associated with a direct reduction in the level of well-being. On the other hand, this condition may affect susceptibility to disease or encourage its progression. Although the response to stress is highly variable and dependent on the ability of each animal to respond, it is clear that if the stressor acts for a long time, the effect found will

be greater, whether the response capacity of each animal is high or low (Romero et al, 2011).

There are multiple factors that can trigger stress in animals; the most common are environmental changes, health alterations, and hierarchical social interactions in groups and management practices (Reinartz and Echeverri, 2007).

Physical stress includes disturbances in the organism's internal environment, such as hypoxia and hypoglycemia, and external environmental changes such as hunger, thirst, fatigue, injury or thermal extremes (Grandin, 1997). Whereas psychological stress is the one that is really perceived by the animal and very difficult to measure objectively; since it can be caused by a new and/or unknown environment, noises, smells, presence of another species (dog, human), or an unsatisfied desire to eat or drink, resulting in fear, anxiety or frustration (Gómez, 2006).

The behavioral changes attributed to the presence of stress can be variable according to the intensity of stress presented, for example, fearful behavior, the attempt to escape, emitting vocalizations, becoming aggressive or hyperactive, are in general instances related to acute stress. However, when an animal is in an unfamiliar environment and is frustrated in developing escape behaviors, it can completely block activity and develop apathy or depression (Hessel et al, 2006).

6. Stress Assessment

An animal's welfare can vary from very satisfactory to very unsatisfactory. Sometimes, however, one component of its welfare is satisfactory, while others are not. Thus, for example, an animal may be in good health, but have limited freedom of movement due to the use of cages or restraint devices. For this reason, it is important to be able to measure each component of welfare and to define how to integrate the different measurements in order to reach a general conclusion (Nicol C. and Davies A., 2018).

Scientific evaluation of poultry welfare is generally based on the measurement of a number of physiological, behavioral or clinical indicators and the comparison of these measurements between housed birds. There are a wide range of indicators that can be used to assess stress response and immune function to measure whether or not the animal manages to adapt to its environment. However, the interpretation of these indicators is sometimes difficult; therefore, an alternative scientific approach has been proposed, which consists of examining the environmental preferences of hens; the first studies examined the environmental preferences of hens in terms of type of food, laying, foraging and exploration material, heat, lighting and social conditions (Nicol C. and Davies A., 2018).

7. Welfare and productivity

It is often thought that satisfactory production is in itself a guarantee of adequate welfare conditions, but the relationship between production and welfare is, however, much more complex (Nicol C. and Davies A. 2018).

When an increase in production can be obtained by improving animal welfare, no other reason should be required to safeguard animal welfare. This is why the welfare of poultry is contemplated in food safety policies, based on scientific evidence that animals that are treated correctly are healthier and more productive than animals that are mistreated (Nicol C. and Davies A., 2018).

The main welfare problems for laying hens reared in commercial systems are bone problems, such as osteoporosis and the resulting high incidence of bone fractures, the deprivation of natural behaviors caused by rearing in cage systems, unequal access to services of birds housed in non-cage systems, and the pecking and feather loss that occurs in all types of rearing systems (Nicol C. and Davies A., 2018).

The main welfare problems that arise during transport and slaughter are high levels of stress due to improper handling, as well as pain and stress caused to the birds if proper stunning is not performed prior to slaughter (Nicol C. and Davies A., 2018).

8. Traditional System

In this system the hens are in cages; there are collective ones, where 6 to 12 hens can be kept or individual ones with capacity for 1 to 2 birds. The measures of the cages for one animal are 35 cm high by 40 cm depth and 30 cm wide. These are arranged in two parallel rows to facilitate the installation of the feeders in the front, as well as the egg collecting tray with a slight inclination so that the egg rolls easily; the drinkers are located in the back in the middle of the two rows of cages (DANE, 2013).

Laying hens are generally exploited for a period of 12 to 14 months, that is, from 18 or 20 weeks of age to 70 or 76 weeks. Hens in the laying stage should be supplied with a balanced mixture for free consumption, which is mainly composed of: 17% proteins, vitamins and minerals (mainly calcium due to the high demand of this element in the formation of the eggshell). On the other hand, it has been established that the amount of daily feed required is 13 kg per 100 laying hens during one day (DANE, 2013).

9. Alternative cage-free systems

A cage-free system must comply with the rule of having up to 7 birds per m2, provide a good quality bedding that absorbs moisture and allows them to dig to regulate their temperature and bathe in it, have water ad livitum and quality food for each stage of their lives. This system strongly rejects beak cutting; it accepts the use of dim light during the winter and prohibits forced molting.

We can divide the three ideal systems according to the space and quality of feeding they obtain:

Cage free

- All birds are in a single floor with bedding.
- Food and drink are automated.
- They have nests and perches.

Grazing (Free range)

- They have access to the outside during the day.
- The space is 1 m2 per bird.
- The food is 100% vegetable.
- Trees and plants serve as perches.

Organic

- The external areas are very large.
- The space is 4 m2 per bird.
- The food is vegetable and free of agro toxins.
- Trees and plants serve as perches.

10. Certification

The Humane Farm Animal Care standards (2014) have been developed to provide unique approved standards for the rearing, handling, transport and slaughter of laying hens for use in the Certified Humane program.

These standards incorporate scientific research, veterinary recommendations and practical experience from the agricultural industry. The standards are based on instructions from the Royal Society for the Prevention of Cruelty to Animals (RSPCA) on current scientific information and other recognized standards and practical guidelines for the proper care of animals.

Animal welfare improves when farm managers adhere to the following (Humane Farm Animal Care, 2014):

- Animal access to healthy and nutritious food.
- Appropriate environmental design.
- Responsible and careful planning and management.
- Expert care and animal awareness.
- Considerate handling, transport and slaughter.

When grazing, the floor should be mainly living vegetation, have coarse sand available to help digest vegetation, and have a minimum of 1 hectare of outdoor space per 1000 birds. Harvesting land will not be accepted as part of the space allocated for grazing, so space calculations must be excluded from them. In the field, it must have living vegetation covering the soil whenever possible; otherwise, materials such as gravel, straw, fertilizer or sand must be used and rough sand must be available to facilitate the digestion of vegetation. The water temperature should not be less than 10° C or more than 38° C. (Humane Farm Animal Care, 2014).

The maximum distance that a hen has to walk from the fence that delimits the pasture area to the nearest entrance to a mobile or fixed henhouse must not exceed 366 meters (Humane Farm Animal Care, 2014).

Birds must spend a minimum of 6 hours per day outdoors during the 12 months of the year, with dry areas of sufficient shade so that the hens can rest outside without crowding and areas covered with shrubs, trees or artificial structures, which decrease the birds' fear reactions to overhead predators, thus encouraging the use of grass and including areas for dust bathing with loose substrate. In case of emergency, birds should be placed in mobile or fixed poultry houses 24 hours a day for a period not exceeding 14 consecutive days (Humane Farm Animal Care, 2014).

A plan for pasture management should be developed, implemented, and updated annually. It should include: rotation of pasture use; prevention and/or management of worn, wet, or muddy areas; reduction of parasite or disease growth; provision and proper distribution of artificial and natural cover and shade; and drainage improvements that prevent flooding (Humane Farm Animal Care, 2014).

Mobile or fixed poultry houses must be available to keep birds dry and protected from wind and predators. Bird exits shall be adequately distributed throughout the housing (at least one exit every 15 m on one side of the housing to allow birds to go to the outside area). The size of the exit must allow more than one hen to pass through at the same time; it is recommended that each exit is 46 cm high and 53 cm wide (Humane Farm Animal Care, 2014).

Adequate perch space should also be provided indoors to encourage birds to climb on them at night to protect them from predators and weather (Humane Farm Animal Care, 2014).

Also, caretakers must know the normal behavior of hens and understand the signs that indicate good health and well-being to be able to recognize an impending problem in the earliest stages, because it will allow them to identify the cause and correct the problem promptly. They should be aware of the welfare problems associated with poor bedding management (burnt metatarsals, footpad lesions, breast blisters), understand which factors affect bedding (moisture, nitrogen content, ventilation, and bird concentration), and be aware of the risk of broken bones (bone fragility, bird age, nutrition, trapping, or dropped netting when jumping from an elevated structure) (Humane Farm Animal Care, 2014).

Before being given responsibility for the welfare of animals, caretakers must be properly trained and competent to (Humane Farm Animal Care, 2014):

- Recognize the signs of common diseases and know when to contact a veterinarian for assistance so that appropriate treatment can be initiated.
- Recognize signs of normal, abnormal and fearful behavior.
- Understand environmental requirements for hens.
- Manipulate hens in a positive and compassionate manner.
- Put the hens down when necessary.

Finally, caretakers must be able to demonstrate competence in handling animals in a positive and compassionate manner, as well as be able to demonstrate efficiency in procedures that could potentially cause suffering, such as euthanasia (Humane Farm Animal Care, 2014).

11. Human health

Some of the methods used in the production industry can have an adverse effect on human health. Poultry producers use antibiotics as growth promoters to boost production, most often without proper veterinary control. Likewise, in an attempt to control losses caused by the appearance of diseases, they introduce treatments with antibiotics, in many cases with lower doses than those indicated, allowing microorganisms to adapt and increase resistance to certain antibiotics.

Resistance to antibiotics is one of the greatest threats to animal and human health today. It is the ability of a microorganism to resist the effect of a drug to which it was originally vulnerable. Resistant organisms (bacteria, fungi, viruses and some parasites) can resist the action of drugs such as antibiotics, fungicides, antivirals and antimalarials, so that conventional treatments become ineffective and expensive; making infections persist, thus increasing the risk of spread. WHO estimates that globally 700,000 people die each year from antimicrobial resistant infections, so preserving the effectiveness of antimicrobials is critical to the health and well-being of food animals and ourselves as consumers. According to the Union of Concerned Scientists, only about 30% of antibiotics used in the United States are administered to humans to treat disease, while the other 70% are given to production animals (Brower et al, 2013).

The increase in poultry meat and egg production goes hand in hand with a high number of animals per square meter in the sheds. The increased intensity of poultry production in industrialized crowded conditions has led to increased use of antibiotics as prophylactics, therapeutics and growth promoters (WHO, 2001).

These resistant bacteria from food-producing animals often leads to resistance to a wide range of antimicrobial agents, including those commonly used in humans, making treatment options for diseases caused by these bacteria increasingly limited and in turn more expensive (WHO, 2001).

Among the microorganisms with the greatest impact on the poultry industry is Escherichia coli (E.coli), a member of the Enterobacteriaceae family and the causal agent of several epidemic outbreaks documented in several countries. This bacterium is found in the gastrointestinal tract of birds, spreading widely in the feces. In stress situations and under inadequate management or biosecurity conditions, it behaves as an opportunistic pathogen, generating a decrease in production in poultry farms (Carbajal et al, 2019).

Despite the fact that in countries such as Colombia, Argentina and Peru the commercialization of antibiotics such as chloramphenicol, olaquindox, nitroimidazoles and nitrofurans is restricted for use in animals intended for human consumption, some antibiotics are still used as growth promoters, aiming to maintain an intestinal integrity free of pathogenic bacteria. These situations have generated that some strains of E.coli present in the normal flora of the intestine and cecum of birds develop resistance to antibiotics (Carbajal et al, 2019).

In studies conducted in Canada, 79.2% were found to be resistant to one or more of the antibiotics evaluated, with 54.3% being resistant to three or more antimicrobials and 10.8% being resistant to five or more antimicrobials (Carbajal et al, 2019).

By not eating industrially produced products, consumers will be avoiding antibiotics and unnecessary toxins in their bodies, which can seriously affect human health by causing diseases that are difficult or impossible to cure due to the immunity generated in bacteria (Brower et al, 2013).

12. Nutritional differences

When comparing eggs, results appear to vary from farm to farm, but the average of eggs from grazing hens compared to eggs from caged hens show one-quarter to one-third less cholesterol, one-quarter less saturated fat, two-thirds more vitamin A, three times more vitamin E, seven times more beta carotene, and twice as much omega-3 (Brower et al, 2013).

Other tests have found that eggs from grazing hens have about six times the amount of vitamin D and significantly more vitamin B compared to store-brand eggs (Brower et al, 2013).

A study by the Department of Poultry Science of North Carolina State University compared grazing hens with caged hens. The study examined the effect on hens of being outdoors or confined. Results showed that all nutrients, except for cholesterol, were different; especially, total fat and essential fatty acids increased in grazing hens (Brower et al, 2013).

The diet consumed by a hen is thought by many to be the only real factor that can scientifically explain why there may be a difference in flavor between hens raised under different conditions. Color is definitely affected by the birds' disposition to forage and to eat flowers and insects, which give a noticeably more orange color (Brower et al, 2013).

18. Bibliography

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