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Effects of Management Strategies on the Performance of Animal Production in Ghana (A Case Study of Pig Production Systems in Ghana)

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Abstract

Technology is developing rapidly. In this development, the transfer of computer systems and software to the application has made an important contribution. Technologic instruments made farmers can work more comfortable and increased animal production efficiency and profitability. Therefore, technologic developments are the main research area for animal productivity and sustainability. Many technological equipment and tools made animal husbandry easier and comfortable. Especially management decisions and applications are effected highly ratio with this rapid development. In animal husbandry, management decisions that need to be done daily are configured according to the correctness of the decisions to be made. At this point, smart systems give many opportunities to farmers. Milking, feeding, environmental control, reproductive performance constitutes everyday jobs most affected by correct management decisions. Human errors in this works and decisions made big effect on last product quality and profitability are not able to be risked. This paper deals with valuable information on the latest challenges and key innovations affecting the animal husbandry. Also, innovative approaches and applications for animal husbandry are tried to be summarized with detail latest research results. In order to improve the traditional input system, it should be possible to promote the agricultural area through good access to land use services and to ensure knowledge of safety and bio-environmental aspects.

Keywords: Management strategies; Pig production system; Animal production

Introduction

According to the food situation and agriculture in 2009, the agricultural sector is the world's largest user of natural resources [1]. Taking into account the entire livestock supply chain from land use and feed production to livestock and waste production and the processing and transport of animal products this sector plays a key role in climate change and accounts for 14.5% of man-made greenhouse gas emissions. Beef and beef production account for the largest share of emissions (41% and 20% of emissions in this sector). Food production and processing and eternal fermentation of ruminants they are the two main sources of emissions (45 and 39% of the sector's emissions), while fertilizer storage and processing accounts for 10% [2]. As a result, increased interest in food intensity of Green House Gases (GHG) has triggered much media debate about the climate impact of the beef production system. By 2050, the number of people is expected to increase from 7.2 billion to 9.6 billion (UN, 2013). This corresponds to a population increase of 33%, but when the global standard of living rises, the demand for agricultural products will increase by approx. 70% in the same period [3]. Meanwhile, the total area under cultivation has not changed since 1991 [4], reflecting efforts to increase productivity and intensification. Animal products are an important agricultural commodity for global food security and account for 17% of global caloric intake and 33% of global protein consumption [5]. Pets contribute to the lives of the world's poorest billions and employ nearly 1.1 billion people. Demand for animal products is growing, and their rapid growth in developing countries is considered a "livestock revolution" [6,7]. World milk production is expected to increase from 664 million tonnes (in 2006) to 1,077 million tonnes (by 2050) and meat production will double from 258 to 455 million tonnes [8]. Climate change, competition for land and water, and food safety are likely to have a negative impact on livestock in times of greatest need [6]. Global climate change is mainly caused by Green House Gas (GHG) emissions, which lead to global warming [9]. Livestock are responsible for 14.5% of global greenhouse gas emissions [6] and can increase soil degradation, air and water pollution, and biodiversity loss [6,10]. At the same time, climate change will affect livestock production through competition for natural resources, food quantity and quality, livestock diseases, heat stress and biodiversity loss, and demand for animal products is expected to increase by the middle of the 21st century. The challenge is therefore to maintain a balance between productivity, domestic food security and the environment [7].

Related Works

Theoretical framework

A sustainable livestock system should carry the weight of long-term competitive economic activities to negatively impact animals, humans, the environment and society consciously to a minimum [11]. Clearly, some of these goals are at odds. Following the example, an ecologically sustainable agricultural system should reduce methane emissions by increasing the efficiency of converting energy from food into edible products. With this approach, it wants to reduce the amount of high-fiber food by feeding ruminants, introducing selected and efficient breeds [12]. Both strategies can negatively affect animal welfare. Lack of fiber in dietary survival leads to increased disease rates and abnormal behavior as a stereotype [13]. In addition, domestic breeds of cattle, such as Podolska, can exhibit most of their key natural behaviors even when fed poor quality food and grazed on natural pastures [14]. Replacing local native breeds with more selected animals can also

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pose a risk to animal welfare, as these animals are often susceptible to infections and productive.

Napolitano (2010) [15] state that information on animal welfare is an important determinant of consumers Willingness To Pay (WTP) for various animal products. In addition, many manufacturers certify their products with labels (e.g. Approved Animal Welfare, Human Animal Care, Neuland, Beter Leven) that ensure high animal welfare standards throughout the supply chain and receive a financial reward for doing so. An indirect market assessment of this non-commodity production could be made by assessing consumers' WTPs [16] or by estimating the premium price of products that promote animal welfare. In addition, the money saved could be quantified by limited veterinary interventions and therapeutic treatments.

On dairy farms, where a very high value of the parent fund cannot achieve its effect without the use of the latest technologies. Such effective use of dairy programs will bring many benefits to the dairy industry for consumers, farmers and animals. Genetic information and type assessment of herd and bull members are particularly suitable for large-scale electronic updating. However, using this system requires knowledge of features and efficient use of features. The large amount of data received on animal issues, herd management and the person used to make animal decisions means that data migration and recording of estimates do not lead to results. The breeds have changed a lot thanks to breeding and genetic engineering. Over the years, the demand for results is covered by variety replacement and selection within the variety. But in the future, this requirement must be met with new artificial insemination techniques and more specific selection techniques. Genomic selection offers more opportunities for higher profits than livestock. Genomic breeding values will be immersed in the near future to be calculated from a genetic marker rather than from genealogical and phenotypic data.

In combination with modern reproductive technologists, he is allowed to stop efforts to preserve the genetic diversity of endangered species using frozen and stored germ plasm (genetic resource banker). Through the direct application of technologically advanced reproduction techniques, modern approaches to non-invasive endocrine monitoring play an important role in optimizing the success of natural breeding programs. For companies, collects and monitors all data electronics, developed in a separate category of sales tests. Automatic data collection along with parental verification provides significant opportunities for genetic improvement of the overall financial gain. I then send the biological sample to a laboratory for genetic analysis to identify the actual genes for which he was responsible for production parameters. Selective breeding can also reduce measures to alternative methods.

Management practices in pig farming

Pig farming, which has been tried and tested over many years, is very lucrative and an excellent source of employment. Pigs can be raised in large numbers. The most appropriate steps for farmers are simple and easy to implement. Management is based on plans, priorities and the organization of seminars that encompass company organization and activities. Production control procedures are production methods, many practical procedures and techniques that result in maximizing production efficiency to the maximum. This exercise is important and how successful your operation will be. The yard in the workshop is used at the end of the working day.

Breeding and genetics in pig production

The life cycle begins in piglets, which usually weigh 1.5-2 kg. At each birth (piglets), 8 to 12 piglets are born, although sows can produce a litter larger than 20. Large litters have many small piglets, most of which may not survive; those who can grow it very slowly. Piglets stay with their mother for 21 to 42 days, depending on the pig farm on the farm. Piglets are repelled by removing the sow from the fence. It is then fed a formulated meal. After several days of adaptation, weaned pigs are kept in teats for a further 30 to 60 days until they reach a weight of 20 kg. They are then placed in pig pens, where they remain until they reach a market weight of 75-100 kg. The life of a pig is between 150 and 230 days from birth to slaughter. The carcass weight of pigs for fattening during slaughter is approximately 70% of the live weight. The main means of production in pig breeding are: breeding (young cows, sows and boars); drinking and purifying water; Foodstuffs (cereals, protein supplements, minerals and vitamins); preventive drugs and therapeutic drugs; Housing and material handling; Management and access; and hygiene, disinfection and waste disposal. Waste management should be combined.

Methodology and Data

Study read, population and method

This research was conducted on the production of pig in Brong Ahafo, especially in Techiman which is located in the center of Ghana. The area is surrounded with market infrastructures in the capital of the region and with its borders to the Ashanti region, the northern region with high availability of animal feed and animal feed. One Hundred and Thirty-Five (135) semi-structured questionnaires were used in all selected pig farmers families.

Pig feeding systems aiming

The sustainability of pig farming / projects in developing countries is often jeopardized by feeding systems that aim for maximum biological efficiency rather than optimal use of local food. Feed accounts for around 80% of the total cost of pig production, so the efficient use of locally available food plays an important role in economical and sustainable pig breeding. The unavailability of high quality foods and the lack of currency to import certain ingredients such as amino acids can make dietary recommendations very expensive. However, the efficient use of food obtained by feeding expensive flour does not guarantee profitability - only the price of animal feed per kg of meat produced should be taken into account. The sustainability of a system with high biological efficiency can change for many other reasons. The question is who will benefit from intensive pig farming. Basically a consumer, but a consumer belonging to a privileged urban sector. Unemployment is a real threat in developing countries. Intense pigments create fewer jobs than semi-intensive or large pigments. Intensive pigs are also the largest energy consumers: piglets are heated, ventilation systems, lighting, water and feed, etc. Costs and uninterrupted energy supply are known problems in many developing countries. In order to ensure the technical and economic feasibility of pig projects in developing countries in the tropics, it is necessary to adapt to standard feeding requirements for pigs or to develop new alternative non-traditional feeding systems. For example, in Lower Zaire, the cost of pork on commercial pig farms could be reduced by 30% and profitability increased by almost 90% by using a diet of up to 65% from palm kernel cakes as a substitute for corn and soy / peanut cake [17]. These economic results were achieved despite the extended fattening time of 90 kg from 7 to 8 months due to higher fiber and lower energy content in the diet. In addition, a diet high in palm kernels does not compete with people for corn and soya.

In addition to classic food ingredients, many others can successfully

use in the tropics. Some unconventional dishes, such as algae, bamboo, banana and banana trees, sorghum (dolo), bread, cassava leaves, coconut, coffee and cocoa by-products, *kapura* leaves and seeds, *Eddoe* (Taro) tubers, jackfruit parts, fruit, leaves and water hyacinth. All of these feeds are well known and in those cases have the advantage of not including human food and are available at very low prices in many tropical countries. In addition to these traditional pig producers, there are several in the bottle tropical countries and traditional pig producers often use them locally. It is also possible to develop for different production systems in the tropics. Burkina Faso is a famous country in the country where the city of Finished plants in the future will be used to feed pigs [18].

It is necessary to pay more attention to these important day-to-day transactions, but these obligations have a higher financial viability. A common waste of these conventional feeds is the high water and/or fiber content, which also adds energy efficiency to the cost. If the diet is concentrated in a volume, it can be used as a food source and consumption to increase the need for additional food. Although the process of reducing energy efficiency is a lengthy process, it is important to reduce the cost of energy consumption. These result in the daily weight loss of the growing pig and can have a catastrophic effect on the disinfectant. The gray which is a great diet will be used for hot and cold while allowing food and other illnesses to come through.

Genetic research between individuals and racers is also important; the neat line of gray, developed over generations with a great diet, has been encouraged to try such costs in other countries that are more concentrated.

Impact of environmental livestock

Many different methods are currently used to assess the environmental impact and properties of animal products. Life Cycle Assessment (LCA) is a well-developed, internationally standardized method and management tool for quantifying emissions, resource consumption and the impact of products on the environment and health throughout their life cycle. Cycle, from the extraction of raw materials to transport, production and use for the rest of life. According to ISO 14040 (2006), the life cycle assessment consists of four phases:

[1] Definition of the purpose and scope of the analysis, functional unit, impact category and system boundaries;

[2] Life cycle inventory (data collection identifying system inputs and outputs and emissions)

[3] Implementation of impact assessment (calculation of input and output contributions of materials and energy listed in the inventory table in the storage phase. and

[4] Analysis and interpretation of results (identification of focus and ways to reduce the environmental impact of the system).

It is increasingly important to express the impact of food production on the environment using the carbon footprint, taking into account all the greenhouse gases generated during the life cycle of the product. Ruminant products have higher CFP production compared to other foods. Due to the nature of the diet (usually food-based) and the digestive system, ruminants produce hydrogen and CH_4 during the fermentation of animal feed. CH_4 represents an energy loss equal to 2-12% of gross energy consumption.

Results

From Table 1 above, the researcher wants to find out the educational level of the farmers. Out of 135 farmers interviewed, 32 farmers had primary education as their representing 23.7%. 47 out of 135 farmers attained secondary level of education representing 34.8 %. The rest of the farmers totaling 56 attain above secondary level. This proportion represent 41.5%. Age wise, 8 farmers interviewed are below age 23. 31 out of 135 falls between ages 24-43. 49 farmers fall between ages 34-43. The remaining 47 farmers interviewed are above age 43.

The above Table 2 illustrates responses of the participants when they asked to indicate the type of pig rearing systems and housing. From the responses the researcher acquired that 135 farmers were interviewed based on their choice of type of pig rearing systems and housing. 27 participants indicated Mud, wattle and grass thatch as their material and house type. Out of this 27 participants, only chose tethering system as pig rearing system, 2 indicated free range, 4 indicated intensive system and the rest 20 practiced the semi-intensive system.

Out of 135 participants who responded to the question, 81 use corrugated iron sheets, bricks and concrete as their housing material. However out of this 81 respondents, only 1 practiced the tethering system, 4 practiced free range system, 35 practiced intensive system and the remaining 41 practiced the semi-intensive system.

Again from the above table, 25 farmers out of 135 rear pigs under trees. Out of this 25, 14 practiced the tethering system of rearing pigs. 3 practiced the free range system, 2 intensive system and the remaining 6 practiced the semi-intensive system.

Lastly on Table 3, only 2 farmers out of 135 responded to not having any housing system. Regarding the type of rearing system, the 2 farmers responding to the practicing the free range system as indicated above.

From the responses above, 16 farmers practice tethering system of rearing pigs where the animal is fastened by a rope to a central anchor point causing it to be confined to a specific area. Tethering is something used a method of confining grazing farm animals. 11 farmers practice the free range system where the pigs are allowed to move around without limits or unconfined. The animals find and scavenge for food themselves while the farmer supplements this with agriculture byproducts or kitchen waste. Total of 41 out of 135 respondents practice the intensive system. Pigs are kept indoors or in pens and are not allowed to move outside. The pens are constructed in such a way that the pigs can eat and drink in their pen with little movement by the animals. From analysis most of the farmers practice the semi-

Age (Years) Group	Number Interviewed	Percentage (95% Confidence Interval)	Education Level	Number Interviewed	Percentage (95% Confidence Interval)
<23	8	5.9 (4.26-7.50)	< Primary level	32	23.7 (22.4-25)
24-33	31	23.0 (21.5-24.5)	Secondary level	47	34.8 (33.4-36.2)
34-43	49	36.3 (34.6-37.4)	>Secondary	56	41.5 (40.2-42.8)
>43	47	34.8 (33.4-36.2)			
Total	135	100.0	Total	135	100.0

Table 1: Age and educational level of farmer.

Materials / House Type	Pig Rearing Systems				
	Tethering	Free range	Intensive	Semi-intensive	Total
Mud ,wattle and grass thatch	1	2	4	20	27
Corrugated iron sheets,	1	4	35	41	81
Bricks and concrete					
Tree shades	14	3	2	6	25
Not housed at all	0	2	0	0	2
Total	16	11	41	67	135

Table 2: Types of pig rearing systems and housing.

Litter size at farrowing	Type of pigs reared			
	Farms keeping cross breeds	Farms keeping Exotic (Landrace/ large white) pigs	Farms keeping Local breeds	Total number of farmers
<6 piglets	15	2	1	18
6-10 piglets	63	27	4	94
>10 piglets	13	9	1	23
Total (Respondents)	91	38	6	135

Table 3: Litter size and farrowing and types of pigs.

intensive system. 67 farmers out of 135 practice such system. The pigs are confined to a limited space or area. The keeper provides all the feed, water and veterinary services that the animals need because they are not allowed to scavenge or find food and water for themselves.

In the above Table 3, the study seeks to know the types of pig reared and litter size in farrowing. From analysis, 135 18 farmers responded to having below 6 piglets as litter size. Out of this 18 respondents, 15 rears cross bread, 2 rears exotic breeds and 1 rears local breeds. Out of 135 farmers 94 farmers responded to have 6-10 piglets as litter size at farrowing. Out of these 94 farmers, 63 rears cross breeds, 27 rears exotic breeds and 1 rears local breeds. 23 farmers indicated to have above 10 piglets as their litter size. 13 rears cross breeds, 9 rears exotic breeds and the remaining 1 which sum up to 10 rears local breeds. Statistically out of 135 farmers interviewed, 91 farmers rear cross breeds, 38 rears exotic breeds and 6 rears local breeds. From view, most farmers are into the rearing of cross breeds having 91 respondents.

Sections and specification of piglets

Race selection: It is not possible to move quickly to practice, which is not direct development, but NO, it is good practice in development, which can be very difficult because it affects many aspects of agriculture. I've seen that for the first time before. The choice of breed will come for a purpose that wants to buy a pig (customer desire). The breed you have chosen to create the farm is the only breed you have chosen when buying meat pigs. The choice of your breed should be based on the purpose for which the pig will serve.

Introduction of piglets: It is one of the few methods used in prose, which involves placing vases of piglets, pigs as space. This should be taken into account when pigs are introduced into the pen, five (5) pigs can be kept. But in the past, there has long been a possible end to the last two months. Pen depending on the size of the pen.

Cleaning: For the most expensive products you need to make sure that you get the most expensive products from the manufacturer, that you will find the same product as your food, which is a good idea for making your own products and agricultural products. This is a very good practice.

Feed: Crimea as one of the most common methods used in chewing is very good, it is produced by weight gain (kg), but it is not as good as chewing gum, it is relatively low, it is relatively low. The cream has a very high quality and very creamy surface, which is a very good and timely solution. All types of materials are processed, from kitchen furniture, from furniture to furniture, from furniture to furniture. The rest are rice and vegetables, cereals, cassava husks, cooked meat, corn, soybeans, etc. Pigs grow well and quickly when fed foods that contain protein, vitamins and other supplements.

Watering: Aside from nutritious food, you should provide your pigs with enough and clean water, you should always provide them with a sufficient amount of clean water. Pigs take a lot of water daily. Having a source of water is good so you don't run out of supply. Pigs also eat less when they have easy access to work so, you can spend less on food if you supply them with water.

Breeding: The breeding process involves the propagation of offspring through sexual reproduction is an easy aspect of pig farming but it requires your close attention, a pregnant sow is monitored closely. The gestation period of pigs is three months, three weeks, and three days (108 days). A single sow can give birth to over 16 piglets at once depending on the specie and how it is managed. As a farmer, you are expected to be present during child birth, sows need to be feed after giving birth to avoid injuring the piglets. They are usually hungry after giving birth, you also need to make sure the piglets suck the sow's breast milk. The piglets will be feed on the breast milk for their first nine weeks of age completing the grower stage of piglets, at this stage, the sow becomes suitable for mating again.

Vaccination: One mistake you should never make is starting your pig farm is not having a veterinary doctor around, it may necessary not be a veterinary but there should be a health adviser, one who understands the health nature of animals. Preferably but not a must, regular vaccination is very important in pig farming. Vaccines should be applied from time to time. The pigs should also be monitored closely for any changes, any change (s) should be reported to the Veterinary doctor for quick action.

Transport: This is a management practice that involves the current production of products (pork products) and materials on and off the farm. These materials can be products, food and other materials needed to make your pigs. To facilitate the transport of material to and from the yard, it is of the utmost importance to sit in the yard with an access road.

Market: Marketing of your products plays an important role in making money. You can sell your products at the local market or at the

city market that is available to you. Pigs are very nutritious, delicious and very popular in the world. The demand for pork is very high. Try to study the market well, pork is sold more than usual during the holidays. Understanding the best time to market pigs is also good management practice that helps generate more revenue.

Housing: Breeding is also a very important aspect of pig farming; your sty should be well built to match the number of pigs you want to breed. There is plenty of space and it grows well in a favorable environment; the pencils should be separated. A good home can keep them healthy, productive and free from adverse climates and all kinds of predators such as wild animals and thieves. The maintenance of the apartment is good so that the pigs are kept in low and mild temperatures in harsh conditions. The house should be cleaned regularly to reduce the number of infectious diseases. The house must have adequate ventilation systems. Thoroughly empty the interior of the house to keep it dry. Build living spaces with good hygiene so that you can easily clean the house.

Conclusion

Further research is needed into likely outlets for feed for. A place and in a changing climate. This information is necessary both for researchers looking for alternative feeds and for farmers and consultants who know when to produce alternative feeds. This type of analyzer should include both annual (where regular feed renewal is possible) and sustainability assessments of comparison systems. In addition, further research is needed to determine which pests and diseases are migrating to new regions due to climate change. Pig farming is generally very profitable, but requires care and good management. Your management procedures are crucial for your return (profit). Take any driving practice seriously, because pigs are known to survive in harsh conditions, that doesn't mean they should be exposed to harsh conditions. With proper care, you regularly make more money and smile at banks. The most important measure is to reach a good agreement on the price of these indicators. Residual measures may differ from those required for measuring the life expectancy and life expectancy of dwellings, and the necessary measures may be taken from accession to accession. Measurements, including number of meals, incubation and chewing, raw chewing, and other distances, can vary widely because they require proper storage and handling. Impacts and livelihoods can vary because they require very serious consideration. Attitude is the ability to take firm initiatives to protect surplus products. Another significant increase in the number of identified individuals is the resilience of the growing population to the human population in terms of quality of life. In this context, further research into the cooking system is needed to achieve useful results. If necessary, adapt knowledge to industrialized and industrialized countries; check the latest results in the field of cohesion and development of waste, air conditioning, climate and logistical requirements.

In fact, the larvae constantly attack live pets and wildlife. Predators not only kill or disrupt human life, because life inside and outside life prolongs the future and significantly reduces the number of human lives. Eighth, the need for proactively limited protection against food consumption. Much of this "earthly fear" destroys negative losses and fills life. Further research is needed in this area to protect this life or the threat of discovery.

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