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Chapter

Introductory Chapter: Animal Welfare - New Insights

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and Shao-Wen Hung*

1. Introduction

Animal welfare (AW) has been a significantly important issue in the world [1]. The idea of AW for the public usually comes from animal epidemic news or food scandals, and it has not been taken as an urgent issue to be solved in the world. Intensive farming has been considered as a sufficient way to operate in agriculture around the world because of the limited space. The government has been doing research projects on farm AW and encouraging researchers to conduct more research in this area.

AW is well organized in some countries such as Sweden and has been taken care of by the government and the responsible industries. Since these countries are the most advanced in the field of farm AW. Thus, how to improve the AW and solve the main AW problem in other countries according to the AW-concerned countries' approaches. At present, especially in the last years, the achievements made by scientists have been exceptional, leading to major advancements in the fast-growing field of animal science. Therefore, experimental animals play a very important role in scientific research [2].

Pigs, rodents, and aquaculture animals are important experimental animals. In order to obtain the accuracy of the experimental data and meet the basic quality requirements of biological experiment materials, the quality of the experimental animals for the biological experiments should reach the level of specific pathogen-free (SPF) [2]. These SPF animals are applied not only to meet the demand for biomedical research but also can be used to provide for research and development of drugs and vaccines. Furthermore, as AW has gradually attracted attention in recent years, the reduced animal pain and quantity and the increase of the experimental refinement are the important issues in the 3R (replacement, reduction, and refinement) of AW [3–5].

2. Animal welfare in various species

This book, “Animal Welfare: New Insights,” is focused on new insights, novel developments, current challenges, latest discoveries, recent advances, and future perspectives in the field of AW.

2.1 AW in fungi and oomycetes: allies in eliminating environmental pathogens

The chapter provides information regarding the mechanism of action of these natural constituents and updates information on the species of fungi and oomycetes that have been studied so far. Thus, readers can have a base in this field and can further exploit what they have discovered to continue to improve the welfare of animals, addressing an ecological and healthy vision.

2.2 AW in overview of animal welfare aspects of Bali cattle with confined typology in Sumbawa regency, NTB, Indonesia

The chapter points out that the quality of life of cattle will affect their productivity, where productivity is an indicator of animal welfare. The recommendation is that there is a need for government policy intervention in the context of implementing animal welfare in Sumbawa as an effort to increase the productivity of Bali cattle.

2.3 AW in aiming to improve dairy cattle welfare by using precision technology to track lameness, mastitis, somatic cell count, and body condition score

The chapter aims to highlight the most recent advances in precision livestock farming (PLF) in this area. Finally, a discussion is presented on the possibility of integrating the information obtained by PLF into a welfare assessment framework.

2.4 AW in nerve injury model in rabbits: Benefits and pitfalls

The chapter outlines the risks and benefits of using this animal model in sciatic nerve injury studies. It also proposes treatment methods for common postoperative complications that can substantially reduce future study costs. To preserve ethical animal care standards in research, the recommended alternative models can be used instead of rabbits to study sciatic nerve injuries.

2.5 AW in human-wild animal conflict

The chapter deals with various human-animal conflicts and their mitigation strategies. Despite of these problems, conservation is likely to become increasingly utilized as biodiversity becomes increasingly threatened and methods of ameliorating threats lag behind.

2.6 AW in application of conservation and veterinary tools in the management of stray wildlife in Zambia

The chapter discusses animal migrations and some of the key reasons why they occur. Further, some conservation and veterinary measures are discussed that could be applied to address potential human conflicts with stray wildlife, which we believe are applicable to the Zambian situation.

2.7 AW in amphibian fauna of Manipur, north East India

The chapter shows that 27 different species of amphibian fauna reported from the region, along with conservation strategies and their importance, have been discussed.

2.8 AW in effect of agricultural pesticides and land use intensification on amphibian larval development

The chapter presents that the increase in human population had increased the demand for vital resources, including food, generating intensive and extractive exploitation and impacting natural ecosystems and biodiversity. These animals have special ecophysiological conditions because they have biphasic life cycles composed of an embryonic and larval aquatic development stage and the adult stage in humid terrestrial environments. For these reasons, amphibians have been observed with increased mortality rates, reduced prey availability, and affected growth rates.

2.9 AW in anti-arthritic activity of some *Boswellia* ssp. extracts in experimentally induced animals

The chapter explores that arthritis is a term often used to mean any disorder that affects joints. Rat-induced rheumatoid arthritis was applied in this study to study *Boswellia serrata*, which is a gum resin extracted from a tree. It appears to be a novel inhibitor of a pro-inflammatory enzyme and may possess other anti-inflammatory effects. Therefore, it is recommended to use *B. serrata* methanol extract to alleviate inflammation and oxidative stress caused by rheumatoid arthritis in rats.

3. Conclusion and future prospect

At present, AW has become a topic of very serious discussion worldwide. Humane breeding has become an issue that has been given international attention in recent years. However, many people are still very unfamiliar with this concept. The foundation of humane feeding is based on AW. The main appeal is to allow animals to have five freedoms. When animal feeding meets these conditions, it can be regarded as meeting the basic requirements of humane feeding. The basis for the sustainable implementation of humane breeding is actually consumers. If consumers do not support the concept of humane feeding and do not agree with the price difference that should be paid for the production of humane products, then producers have no resources to put humane concepts into the production process. Therefore, when consumers pay attention to humane production in terms of consumption behavior, then only more producers are willing to raise livestock and poultry in a humane way. As long as the insistence of both consumers and producers is satisfied, animals can be treated better.

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