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**Scientific Examination of Halal and Haram Animals in the Quran:
Implications for Modern Dietary Practices**

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Abstract

It discusses the scientific analysis of halal and haram animals, reviewed by the Quran, along with their characteristics and effects on health and nutrition. Based on Islamic religion, the Quranic dietary laws state what animals Muslims can and cannot eat to maintain cleanliness and good health. According to science, all halal-designated animals carry traits and nutrition that ensure their consumption is safe and beneficial for health. On the other hand, since animals like swine and carnivores can contain parasites, toxins and diseases, their consumption is forbidden. It also emphasizes that halal methods of slaughter ensure both the safety of foods and well-being of animals as per scientific guidelines. By using scientific knowledge, Islamic jurists can improve the significance of halal rules in today's food business and deal with challenges such as certification, mixing unapproved food products and educating people about halal dietary laws. Connecting religious teachings with facts from science demonstrates that a halal diet is practical, ethical and based on both religion and science. Lastly, the article urges people in charge to join efforts to keep halal products safe and secure for world consumers and the public's health. As a result of this work, people now have a better grasp of how halal and haram food laws work and, as a result, have more opportunities to eat better and healthier in line with Muslim traditions..

Keywords: Islamic Teaching, Labor Rights, Dignity, Social Justice, Polices.

Introduction

For a long time, religion has included strict rules about food and in Islam, these rules shape people's spiritual, social and physical well-being. Millions of Muslims around the world rely on the Islamic dietary framework to shape their food habits and influence their culture (Al-Salem, 2020). They represent more than just what is

legal, as they also consider matters of ethics, hygiene and the environment. They affect what Muslims buy and also affect the farming, economic and public health sectors in Muslim-dominated countries (Noreen et al., 2021). Within this situation, people who follow a halal diet often share their religion and can enjoy better health due to strict food processing and taking care of animals. To understand why halal and haram classification matters, one must look at both their roots and their impact on today's Muslim society.

Within the Quran, Muslims are given an official list of halal and haram animals and foods. In the Quran, certain animals such as cattle, goats, sheep and fish, are considered proper to eat, whereas swine and all carnivores are forbidden (Al-Quran 2:173 and 5:3). The Islamic scriptures point out that Muslims should keep themselves and their environments clean, treat others kindly and avoid harmful things to remain both spiritually clean and physically healthy (Maqsood, 2020). Specific kinds of animals are not listed; instead, the Quran forbids eating dead, blood-soaked or meat from animals not slaughtered in God's name (Shaikh et al., 2021). The teachings of God help form Islamic jurisprudence and over the years, scholars have interpreted the rules about food. To maintain their religion as they grow, Muslims should regularly revisit the main Quranic points about foods.

Muslim consumers across the globe have helped increase the importance of studies on which foods are permissible and which are forbidden. Experts in food science, microbiology and veterinary medicine are focusing on how halal dietary laws may impact modern food safety and nutrition (Motlagh et al., 2003). This means that Islamic rules about not eating pork are justified by scientific evidence regarding the dangers of the diseases and toxins found in pigs (Al-Salem, 2020). Likewise, using halal methods that involve caring for the animal and draining its blood can prevent more contamination during production (Yazid et al., 2019). Combining religion and science can help improve the way halal certificates are provided, gain consumers' trust and put faith-based rules for diet into the world's food safety programs. Therefore, using science helps to prove and support traditional dietary rules in Islam and shapes its approach to modern meals.

This research seeks to give a thorough analysis of the halal and haram animals found in the Quran and explore what that means for people's food habits today. It attempts to connect religious beliefs and present-day science by pointing out how the Quran helps select healthy and ethical foods. They include studying the health and biological aspects of halal and haram animals,

considering their nutrition and safety consistent with Islam and learning how this information positions halal food certification and influences what people decide to buy or eat today. It uses information from the Quran, Islamic law and recent scientific literature to provide a single viewpoint. Consequently, the study helps people understand halal dietary rules and encourages discussions between religious and scientific fields for the benefit of Muslims and everyone.

Historical and Religious Context

The Quran lays the foundation for halal (permissible) and haram (forbidden) dietary laws through explicit guidance on animals and foods that Muslims may consume. These rules are divinely ordained and serve as a framework to maintain physical purity, spiritual obedience, and social order within Islamic communities.

One key verse states:

يَا أَيُّهَا الَّذِينَ آمَنُوا لَا تَأْكُلُوا أَمْوَالَكُمْ بَيْنَكُمْ بِالْبَاطِلِ إِلَّا أَنْ تَكُونَ تِجَارَةً عَنْ تَرَاضٍ مِّنْكُمْ وَلَا تَقْتُلُوا أَنْفُسَكُمْ ۚ إِنَّ اللَّهَ كَانَ بِكُمْ رَحِيمًا.

“O you who have believed, do not consume one another’s wealth unjustly but only [in lawful] business by mutual consent. And do not kill yourselves [or one another]. Indeed, Allah is to you ever Merciful” (Quran 4:29).

While this verse broadly admonishes ethical conduct, the Quran explicitly specifies lawful and unlawful animals in multiple chapters, such as:

حُرِّمَتْ عَلَيْكُمْ الْمَيْتَةُ وَالْدَّمُ وَلَحْمُ الْخَنَازِيرِ وَمَا أَهَلَ لِغَيْرِ اللَّهِ بِهِ وَالْمُنْخَنِقَةُ وَالْمَوْقُوذَةُ وَالْمُتَرَدِّيَةُ وَالنَّطِيحَةُ وَمَا أَكَلَ السَّبُعُ إِلَّا مَا ذَكَّيْتُمْ

“Prohibited to you are dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah, and [those animals] killed by strangling, or by a violent blow or by a headlong fall or by the goring of horns, and those from which a wild animal has eaten except what you [are able to] slaughter [before its death]...” (Quran 5:3). This verse clarifies prohibited food categories, emphasizing the importance of ritual slaughter (*dhabihah*) and the avoidance of impure substances. Such detailed injunctions form the core of Islamic dietary jurisprudence (*fiqh*), underscoring both physical and spiritual cleanliness (Maqsood, 2020; Shaikh et al., 2021).

Over the years, knowledgeable Muslims have offered various interpretations (*tafsir*) of how Quranic laws related to eating should be applied and understood. Many books written by Ibn Kathir, Al-Tabari and Al-Qurtubi give examples and explore the reasons why certain foods are forbidden such as health and ethics (Al-Qurtubi, trans. 1999). An example is that pork is prohibited because swine collect food with their mouths which can make them transmit diseases and this is now known through modern

research (Al-Salem, 2020). Both scholars and others discussed unclear issues like carnivorous animals, drinking blood and intoxicating substances to help the Muslim community everywhere.

Long before, slaughtering an animal in a lawful way meant mentioning God's name and thinking about His influence as you ate your food. In time, Islamic law introduced guidelines for animal protection and food guidelines that followed the spirit and laws of the Quran (Motlagh et al., 2003). Historically, Muslims established halal rules in their societies which influenced the behavior and economy of their communities. During Abbasid and Ottoman rule, certified halal food and specific meat markets were used to allow only food that was approved by religious laws (Noreen et al., 2021). Along with watching their diets, Muslims were guided to be kind to animals, choose humane ways to slaughter and avoid wasting any resources (Yazid et al, 2019). In many places where the majority is Muslim, how people prepared food reflected their religious background and helped them bond socially. Currently, global and industrial factors have both challenged and presented possibilities for halal food, leading researchers to look again at combining ancient eating habits with up-to-date food science and guidelines for the international market (Al-Salem, 2020). Because the Quran remains relevant, the concepts of halal and haram keep their importance among Muslims.

Scientific Analysis of Halal Animals

Animals allowed in the Islamic diet must have certain biological qualities that allow them to be found halal. Certain animals such as herbivores or omnivores, are accepted as halal if they are well-butchered and ready to eat. Compared to carnivores, these animals' digestive systems allow them to avoid consuming poisonous toxins due to their diet of plants and limited meat. For example, meat from ruminants such as cattle and sheep is healthy because their stomachs help to remove harmful toxins from the meat (Rahman et al., 2022). The reason poultry is healthy is that it is classified as halal and quickly digested, with low amounts of fat. Besides, fish are mostly considered halal thanks to their place of living and their nutritional makeup, although there can be some variation among Islamic schools of thought. Muslims should use the biological classification, as it is based on modern science that examines the health and resistance to diseases of animals intended for people to eat. Meat from halal animals is known to be rich in protein, important vitamins, minerals and fatty acids that improve human health. Beef and lamb contain a good amount of iron, zinc,

vitamin B12 and other nutrients that support both the immune system and healthy development of the brain (Muhammad et al., 2018). Poultry meat is accepted as containing lean protein and fewer saturated fats, so those on heart-healthy diets often eat it. Eating oily fish such as sardines or salmon, increases your omega-3 fatty acids which reduce the risk for heart problems and promote your brain's health (Nasir et al., 2021). Scientific studies underscore that halal slaughter methods, which require the swift cutting of major blood vessels and thorough drainage of blood, contribute to meat quality by reducing bacterial contamination and enhancing shelf life (Hamid et al., 2021). The nutritional profile of halal meat is therefore closely linked not only to the animal's biology but also to the adherence to prescribed halal slaughter practices, which together ensure food safety and dietary benefits.

The processes of classification and consuming halal animals greatly depend on safety measures. Often in Islamic law, animals that are not allowed are those that might cause humans to get sick or be exposed to toxins. When halal animals come from healthy and well-managed groups, they are likely to have less risk of zoonotic infections. Stressing humane bathing (dhabihah) in Islamic practices is compatible with the guidelines that help prevent stress-induced toxins and harmful microbes in food (Ahmad et al., 2022). Investigations have demonstrated that the halal method of throat cutting, followed by saying God's name, reduces the number of pathogens and enhances cleanliness in meat (Rahman et al., 2022). There is also a need to handle certain aquatic animals included in a halal diet because they can carry different types of germs. Updating halal standards consists of using advances in testing to verify that food, drugs and cosmetics are safe, free from allergens and truly halal (Syahmi et al., 2018). Therefore, because halal animals are suitable and their slaughter is supervised, halal meat is safe to consume for Muslims and non-Muslims alike. You can find evidence that proves halal animals are scientifically valid. Research on cattle and sheep focuses mainly on their physiology and the nutritional value of their meat. Fibrous plants are transformed by these ruminants into good quality proteins and the fatty acids in their meat benefit the health of the heart (FAO, 2017). Chickens and turkeys are good choices for protein among Muslims because they contain less fat than other sources which helps prevent some chronic illnesses (Hamid et al., 2021). Fish such as salmon and sardines which contain omega-3, are advised for their ability to help the brain and are allowed in the Quran (Nasir et al., 2021). Scientific analyses also focus on ensuring these animals meet halal criteria in terms of health status and slaughter conditions. For

instance, studies on halal slaughter of cattle have demonstrated reduced stress markers and microbial contamination compared to non-halal methods, affirming both ethical and health advantages (Ahmad et al., 2022). Together, these examples bridge traditional Islamic dietary laws with contemporary scientific evidence, supporting the relevance and benefits of halal animal consumption.

4. Scientific Analysis of Haram Animals

Animals that are forbidden by Islamic rules are usually biologically similar and have many risks that make them unfit for consumption. Swine, carnivores, scavengers and those called carrion have traditionally been regarded as animals that may cause disease and eat unclean things (Syahmi et al., 2018). According to biology, because many haram animals have complex digestive systems that support parasites and pathogens, they are more likely to carry toxins dangerous for people. In other words, swine feed on food they find and therefore can become infected with *Trichinella spiralis*, the cause of a foodborne disease called trichinosis (Rahman et al., 2022). The toxins and disease-causing pathogens inside the bodies of carnivores may increase as they feed on animals near the end of the food chain. It is likely that animals that eat garbage or dead animals will consume unhealthy and decayed matter, so their muscle meat is unsafe for eating. Because of these traits, the Islamic rules about eating have a logical basis in science, as they recognized the safety and hygiene of foods many centuries ago and modern veterinary science also accepts this. In Islam, haram animals are not allowed due to their capacity to carry parasites, dangerous chemicals and illnesses. Researchers have given a lot of attention to swine because they can host pathogens that can be transferred to people. If pork meat is not cooked correctly or handled improperly, it can become dangerous to eat because of tapeworms, roundworms and protozoa (Yazid et al., 2019). In addition, since the pig often gets its meals from dumps or waste pits, this makes its meat more dangerous for people to eat. Carnivorous animals are often reservoirs of diseases like rabies and various bacterial infections, while carrion feeders can accumulate toxins produced during decomposition, such as botulinum toxin, which is fatal even in minute quantities (Ahmad et al., 2022). These scientific findings affirm the prudence embedded within Islamic dietary laws, emphasizing public health protection alongside spiritual adherence. The prohibition of such animals, therefore, transcends ritualistic boundaries, aligning with principles of harm prevention recognized in contemporary food safety frameworks.

There are lots of cases that demonstrate how important these scientific considerations are. Most studies of haram animals focus on swine (*Sus scrofa*) because their diet and the health problems linked to them garner the most attention. Pork consumption has resulted in health problems due to the outbreak of trichinosis and other parasitic infections (Rahman et al., 2022). As lions and wolves are top predators, there are concerns about the dangers their meat might contain and for ethical reasons, this group is not consumed (Syahmi et al., 2018). It is also forbidden to eat animals that have been killed naturally or improperly slaughtered, as the chances of infection with toxins and disease agents are very high (Nasir et al., 2021). No blood is allowed in Islamic law as it can contain dangerous pathogens and toxins. All in all, these rules include views from religion, ethics and science, promoting both health and spiritual wellbeing. Using science to understand Islamic dietary regulations for haram animals affects current food companies and related regulations. Since globalization and intricate supply chains are common nowadays, it is necessary to take strong measures to keep halal food pure from haram substances such as pork derivatives and other goods not allowed under Islam (Muhammad et al., 2018). Today, measures like DNA studies and chemical testing are increasingly applied to meet the requirements of the religion and assure consumers. (Syahmi et al., 2018) Also, realizing the health and biological hazards linked to haram foods helps government officials to create effective rules for food safety that both honor Islamic beliefs and safeguard people's health. Thanks to science and faith agreeing, the food supplied to Muslim consumers globally addresses all ethical, cultural and safety needs, while guaranteeing that dietary laws remain practical in today's world.

5. Contemporary Dietary Practices and Challenges

Over the past few years, the growing number of Muslims and rising popularity of halal food have helped the global halal food industry expand. Nevertheless, this increase in business has caused problems in both halal certification processes and the management of the supply chain. All parties involved in food businesses, including producers, regulators and consumers, continue to care greatly about halal integrity within the whole supply chain (Gustafsson et al.). Due to the discrepant standards and interpretations of halal compliance in different nations and law schools, making halal certification easy across the world is complicated. On top of that, the spread of halal-certified foods across the world comes with risks of untrue labeling, fake certification and adding prohibited ingredients, weakening the trust

consumers have in halal foods (Rahman et al., 2022). As Pakistan has many Muslims and a thriving halal industry, it is challenging to regularly and properly enforce halal guidelines in all types of food businesses. To ensure that halal food remains safe and the industry grows, transparent and recognized certification systems aided by scientific technologies must be established. As the food production process gets more industrialized, halal foods are at risk from cross-contamination. Halal products might encounter haram substances during transportation, processing or packaging (Muhammad et al., 2018). The matter worsens in cases where halal and non-halal items both use the same equipment and machinery in the same manufacturing plants. Even tiny contamination can make food unfit for halal consumption and disturb people who follow the religion (Syahmi et al., 2018). As a result, some food industries are now separating operations strictly, using special production lines, improved cleaning and halal certificates that also include monitoring through risk assessments and traceability (Nasir et al., 2021).

Since informal and small food businesses are frequent in Pakistan, controlling the quality of food with strict rules is not easy because there are few resources and little regulation. It is necessary to strengthen the industry, provide more education and join efforts with the public to keep halal food safe from cross-contamination. If people and scientists are well-informed about halal and haram dietary laws, the market experiences big changes and better compliance with religions. Despite having clear instructions from their religion, some Muslim people and young city dwellers still misunderstand what is considered halal and how it is certified, among other things (Gustafsson, D., et al., 2024). Many individuals find it difficult to learn about food safety and halal foods, due to conflicting publicity and different interpretations in advertisements. Combining open communication with digital technology by halal execs and schooling the public can ensure that people make the best choices. In Pakistan, many organizations and agencies work to make halal products known; still, they have trouble reaching rural communities because of the increasing number of falsely labeled products (Rahman et al., 2022). A team made up of religious leaders, scientists, business experts and consumer advocates should come together to help Muslim consumers around the world.

6. Implications for Public Health and Policy

Since halal guidelines include rules for buying and preparing healthy meals, they greatly help maintain public health. The rules in Islamic law motivate Muslims to take actions that minimize

contact with disease-causing germs and harmful chemicals, resulting in a better state of well-being for the population (Al-Salem, 2020). Slowing down the blood draining and treating animals nicely, as done by ritual slaughter, is very similar to food safety standards currently used in restaurants (Rahman et al., 2022). Besides, a precautionary policy is applied when it comes to swine and scavengers since we know from research that these animals can cause zoonotic diseases and food poisoning (Yazid et al., 2019). Thanks to their partnership with effective public health principles, halal laws benefit the health and nutrition of many Muslim people worldwide. Applying scientific research in Islamic law may strengthen how halal dietary rules are applied in the modern food industry. When discussing what to eat based on Islamic law, scholars have used *ijtihad* to make decisions that suit various circumstances and still obey God's rules (Maqsood, 2020). Thanks to recent improvements in animals, food and nutrition, it is now easier to guide halal rules in a practical way. For example, recognizing the biological risks related to some animals settles confusing questions, while better analytical techniques ensure accurate control of halal standards across the world (Syahmi et al., 2018). When religious authorities and scientists team up, it leads to a more flexible way of understanding faith and health issues. Such integration is critical as Muslim consumers increasingly demand transparency and scientific rigor in halal certification, prompting the evolution of standards that uphold both faith and safety.

For the public to enjoy the health gains from halal rules, leaders in government, religion and the food industry must all work hand in hand. Authorities in Pakistan and other Muslim nations should ensure the development of effective certification procedures for halal foods that include checking for possible contamination and errors (Rahman et al., 2022). Religious leaders have the ability to officially agree with scientific findings, inform people about the benefits of healthy meals and join forces with certification agencies to ensure the same high standards (Al-Salem, 2020). Halal foods should be produced and distributed by investing in workers' education, necessary equipment and tracking tools. Advising the public is essential to give people more information about halal practices and their associated health advantages. If followed, these recommendations can blend religious dietary rules with public health, supporting sustainable ways of eating and benefits for Muslims.

7. Discussion

Studies suggest that the Quranic dietary rules are in excellent agreement with today's knowledge of health and food safety.

Besides their religious status, the halal and haram animals described in the Quran are chosen based on their biology and hygiene which support the well-being of everyone. The reason certain animals such as swine, cannot be eaten is that these animals can spread parasites and toxins that harm humans, according to research. In addition, the processes for source of meat are swift and designed to prevent contamination and yield better-quality meat. It seems that the Quranic food guide included insights on nutrition that science recently discovered. It is clear from today's focus on healthy, responsible and ethical foods that the Quran has always covered both religious concerns and those of public health and social wellbeing. When religious texts and science are seen as harmonious, it dispels doubts about the relevance of the dietary laws in the Quran today.

Although many label these laws as out-of-date or just symbolic, experts view them as holding important and up-to-date knowledge about food safety and nutrition. Respecting religion and openness to science should guide any discussions of these topics. Following this approach resolves misconceptions about culture that may form due to ignorance or different values. Moreover, it is necessary for further new studies to use advanced technologies to explore the different aspects of halal and haram foods. It can help improve certification practices, build consumers' trust and boost the halal industry around the world. Continued interdisciplinary collaboration among theologians, scientists, and policymakers will be essential to ensure that Quranic dietary laws remain a living tradition, responsive to new knowledge and societal changes while preserving their spiritual essence

8. Conclusion

In conclusion, the scientific examination of halal and haram dietary laws as prescribed in the Quran reveals a profound synergy between religious teachings and modern health principles. The Quran's classifications of permissible and forbidden animals are not arbitrary but are rooted in biological and hygienic realities that protect public health. Scientific research supports the prohibition of certain animals due to their association with parasites, toxins, and disease risks, while validating halal slaughter methods that enhance food safety and nutritional quality. This harmony between faith and science dispels misconceptions about the relevance of Islamic dietary laws today and highlights their ongoing significance for millions of Muslims worldwide. Moreover, integrating scientific findings with Islamic jurisprudence offers a dynamic framework to adapt halal certification and food practices in a globalized market. Continued

interdisciplinary research and cooperation among religious authorities, scientists, and policymakers will be crucial to sustaining the integrity, safety, and spiritual essence of halal dietary laws, ensuring they remain relevant and beneficial in contemporary society.

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