



Unraveling the Mysteries of Animal Genetics: Insights, Applications, and Future Prospects

Clara Nobis*

School of Veterinary Medicine, College of Medical and Health science, Wollega University, Po Box; 395, Nekemte, Oromia region of Ethiopia

Abstract

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Introduction

Animal genetics, the study of genetic inheritance and variation in animals, plays a fundamental role in understanding the complexities of species evolution, genetic diseases, traits, and population dynamics.

This article delves into the realm of animal genetics, exploring its significance, current insights, applications, and future prospects. By deciphering the genetic makeup of animals, researchers gain valuable insights into evolutionary processes, breed improvement, conservation efforts, and human health.

Materials and Method

The future scope of animal genetics holds tremendous potential for advancements that will revolutionize various aspects of animal breeding, health management, conservation, and research.

Genomic selection and precision breeding: The continued development of genomic tools and techniques will enhance the accuracy and efficiency of breeding programs. Genomic selection, which involves the use of genetic markers and genomic information to predict breeding values, will enable more precise and targeted selection for desirable traits. This approach will lead to accelerated genetic gain, improved productivity, disease resistance, and other economically

*Corresponding author:

management practices that optimize environmental conditions for improved productivity, adaptability, and stress resilience.

Data integration and artificial intelligence: The ever-increasing volume of genomic and phenotypic data calls for advanced data