

Case Studies

Sixth International Workshop on Regulatory Approaches for Agricultural Applications of Animal Biotechnologies

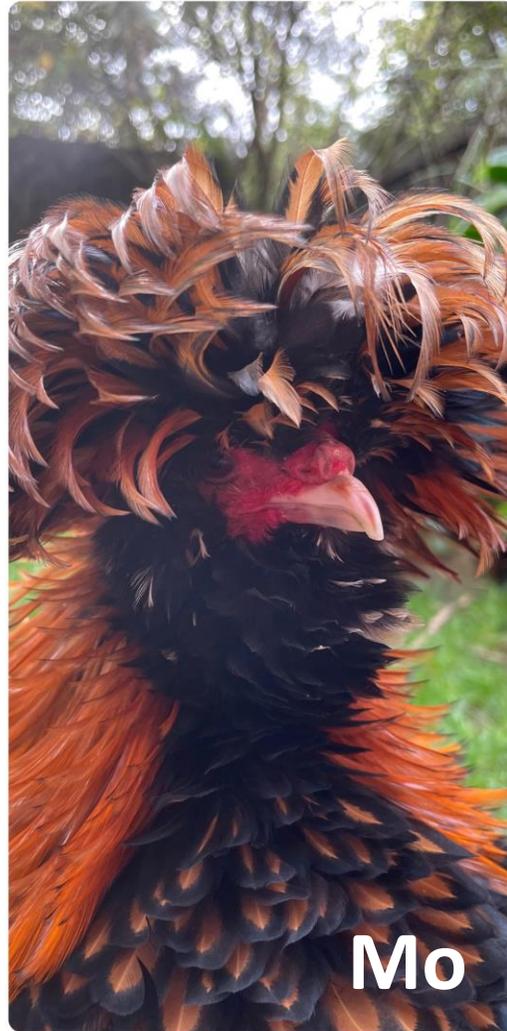
7th November 2025



ChatGPT (GPT-



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Case Studies

CASE STUDIES

- Three case studies
- Each case study has two concept products.

PURPOSE:

Consider how the applications would be handled in your own country's regulatory system

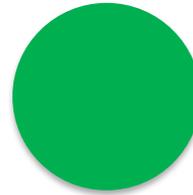
REMEMBER:

You are a subject matter expert. Your input is **NOT** considered to be **ACTUAL** policy of your country

YOUR TASK

- In your group, assess each case for report back to the main group.
- You will bring the context of your local regulatory system to each case
- You will examine 3 key parts and address the primer questions for each case.

Case Study 1: FISH



Fish—Enhancing Productivity and Environmental Containment

This case study examines two distinct applications of gene editing in aquaculture. **1: Myostatin Knockout (KO) Tilapia**, focuses on enhancing a production trait (muscle growth) by inactivating a naturally occurring gene. **2: Sterile Salmon**, focuses on environmental containment by using gene editing to induce sterility.



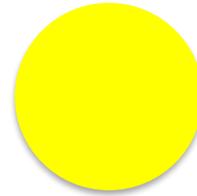
Case Study 2:

Cattle—Disease Resistance and Accelerated Gain

This case study explores two advanced applications in cattle. **1: a Trypanosomiasis-Resistant Cow**, uses gene editing to enhance animal health and welfare by introducing a naturally occurring trait for disease resistance. **2: a Surrogate Sire**, represents a novel reproductive technology designed to accelerate the dissemination of elite genetics throughout the livestock industry.



Case Study 3:

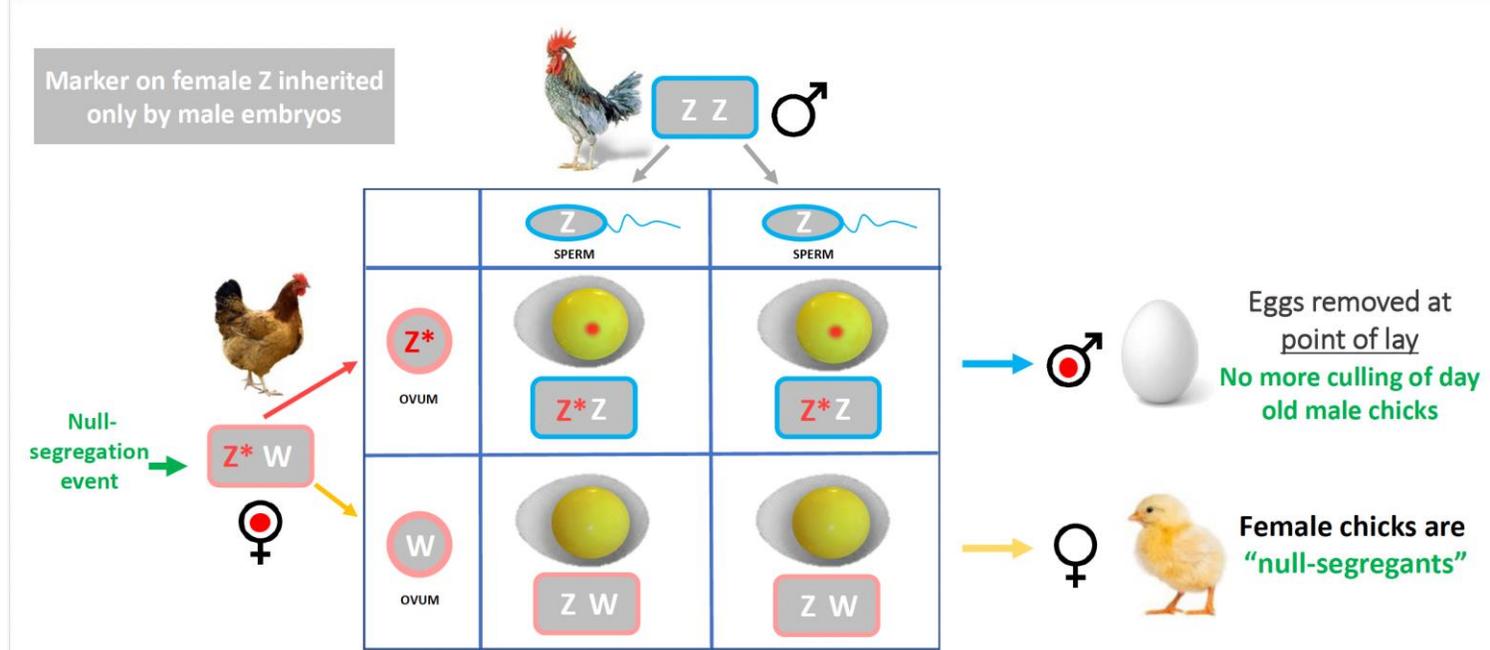


Poultry—Addressing Consumer Needs and Animal Welfare

This case study presents two applications in poultry that raise some of the most nuanced regulatory questions. **1: Allergen-reduced Chickens**, uses gene editing to directly benefit a subset of consumers. **2: Single-Sex Chickens**, uses a transgenic parent to produce a non-transgenic commercial animal (a null segregant) to solve a major animal welfare problem in the egg industry.



SEGREGATION OF SEX CHROMOSOMES DURING THE FORMATION OF OVUM AND SPERM



The Task

Understanding the Technology (30 min)

- In simple terms, what is the intended biological change?
- What is the primary agricultural or economic problem each of these technologies aims to solve?
- Who are the intended beneficiaries (farmers, consumers, the environment)?

Identify Potential Pathways to Harm (30 min)

- Human health?
- Animal health?
- Environment/Social?

Regulatory Approaches and Trade Implications (90 min)

- Regulatory trigger?
- Data requirements?
- Traceability, labelling, identity?
- Trade implications?

Thank You

