*Faculty Research Summary*

# Dr. Elijah Kiarie

Dr. Elijah Kiarie's primary research focus is on poultry nutrition. More specifically, Kiarie focuses his research on improving feed efficiency to reduce feed cost and environmental impact of poultry production.

Recently, the Kiarie lab has shifted its attention to sustainability. Dr. Kiarie explains that when people think of livestock and sustainability, cattle and greenhouse gas emissions usually come to mind. While poultry are generally efficient, undigested feed protein can increase ammonia and nitrous oxide emissions from manure. This undigested protein is not only an economic loss but also causes gut health issues. When protein isn't fully digested in the small intestine and instead ferments in the cecum, it can lead to problems like the growth of E. coli and Clostridium, which can limit growth and productivity

Kiarie aims to enhance feed protein digestibility and utilization. He is starting to investigate functional amino acids, exogenous proteases, novel and further processed proteins to complement conventional feed protein sources, such as soybean meal, but states these come with their own challenges.

When asked about getting research into practice, Kiarie says he tries to get research in front of end users. He had built strong relationships with commodity groups, and this allows him to attend and share his research at national and international conferences. However, he finds tools like summaries, infographics, and posting findings on social media is a faster method of delivering results directly to producers.

Fittingly, Kiarie's favourite animal is the laying hen, which he calls a "biological machine." He's amazed that a hen can eat just 100 grams of feed a day yet produce a 65-gram egg daily—an efficiency far beyond what any human could achieve.