# Curriculum Vitae

Family Name: Malgwi
Given Name: Isaac Hyeladi
Nationality: Nigerian
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## Education:

• Ph.D. in Animal and Food Science | Università degli Studi di Padova | Italy          (2019 - 2022)

• M.Sc. in Animal Nutrition and Feed Safety Engineering | The Hungarian University of
        Agriculture and Life Science | Kaposvár - Hungary          (2016 - 2018)

• B.Sc. in Animal Science | University of Maiduguri | Nigeria          (2006 - 2012)

## Research areas:

- Animal Nutrition and Feeding, Animal Product Quality and Food Safety

- Metagenomics, Next Generation Sequencing, Nutrigenomics and Nutrigenetics

- Meat (Dry-cured ham) Microbiology and Chemometrics (NIRS)

## PhD project:

Meat quality composition, visual appearance (fat depth and fat colour, marbling, drip loss, meat colour, pH, haemorrhage, veining) and palatability (tenderness, juiciness, flavour, and taste) are important traits in meat products. These determine consumer quests and meat premiums. Strategies to improve fat deposition and intramuscular fat content of meat are crucial to human health, and the economic and environmental sustainability of animal production. Studies have evidenced that animal genetics, age, sex, environment, and dietary nutrients are known key factors regulating the rate of development of these traits in animals. Today, the integration of high throughput "omics" technologies into nutritional genomics research has revealed many quantitative trait loci (QTLs) and single nucleotide polymorphisms (SNPs) for the mutation(s) of key genes directly or indirectly involved in fat metabolism and IMF deposition in animals.

Nutrient–gene interaction and the underlying molecular mechanisms involved in fatty acid synthesis and marbling in pigs are difficult to unravel. While existing knowledge on QTLs and SNPs of genes related to fat metabolism and IMF development is yet to be harmonized, the scientific explanations behind the nature of the existing correlation between the nutrients, the genes and the environment remain unclear, being inconclusive or lacking precision. In my PhD research, we will investigate better strategies based on the ongoing revisions of the European Union (EU) guidelines and the Veneto region production regulatory guidelines for pork from pigs destined for dry-cured ham within the circuit of protected designation of origin (PDO) ham production. Our novel approach includes:

- Matching nutriome (nutrient intake combination) with genotypes, and age, sex, body weights, or individual nutritional status of pigs from selected genotype (s) (Goland C21 pigs) to optimize and modulate cellular metabolic functions and to improve the quality and characteristics of the meat (pork), carcass yield, quality fresh and dry ensuring environmental sustainability.

- Microbiome analysis and investigation using metagenomics; next-generation sequencing technology for 16S DNA and rRNA gene sequencing to identify and to characterise pathogenic and non-pathogenic bacteria associated with the interior and exterior surfaces of dry-cured ham (meat) or found in milk and faecal samples.

- Application of non-invasive next-generation diagnostic methods in livestock production: Near-Infrared Spectroscopy (NIRS) and Fourier Transform Infrared Spectroscopy (FTIR); in animal and food product quality evaluation (chemometrics).

- Building a model or calibration curve for the prediction of dietary nutrient digestibility in pigs using NIRS spectra collected on fresh and dry faecal samples.

## Supervisors:

Stefano Schiavon and Veronika Halas

## Publications: