RESEARCH PROGRAM ON Livestock
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Introduction to bioinformatics and population genomics applied to livestock

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ILRI INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE
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Name of the training event	**Introduction to bioinformatics and population genomics applied to livestock**
Aims of the course	The introduction to Bioinformatics and population genomics applied to livestock free online course aims to provide early-career scientists with the theoretical knowledge and practical skills to utilize genetic data to address research questions in livestock genomics and breed characterisation improvement.
Dates	May 24 to June 4 2021
Venue	The live course sessions took place via the Zoom meeting app. The SLU canvas was the learning platform where course materials, videos and assignments were accessible to participants
Instructors and their affiliation	Erik Bongcam Rudloff, Swedish University of Agricultural Sciences (SLU) Anna Maria Johansson, Swedish University of Agricultural Sciences (SLU) Renaud Van Damme, Swedish University of Agricultural Sciences (SLU) Yuri Utsunomiya, Sao Paulo State University (UNESP - Brazil
Participant information, including a number by gender	Forty-two participants, comprising 16 females and 26 males, were admitted to the course. Thirty-three participants (33% female, 67% male) from 20 countries in sub-Saharan Africa (Algeria, Benin, Burkina Faso, Congo, Côte d'Ivoire, Egypt, Ethiopia, Ghana, Kenya, Malawi, Morocco, Nigeria, Rwanda, Senegal, Somalia, South Africa, Sudan, Tanzania, Tunisia and Zimbabwe) completed the courses.
Funder	The Livestock CGIAR research program (Livestock CRP) and Global Impact Accelerator Award From the University of Edinburgh
Course summary or agenda	**Date Time (UTC+2) Topic** 24 May 13h-13h30 Welcome May 24 13h30-13h45 Practical Information on asynchronous Basic genomic and Rsessions May 24 13h45-15h What is bioinformatics and genomics Lecture May 25 13h-14h Bioinformatics resources and biological databases Lecture May 25 14h-15h Bioinformatics resources and biological databases Tutorial and List May 26 13h-14h Basics of Bioinformatics using Emboss software suite Lecture download May 26 14h-15h Basics of Bioinformatics using Emboss software suite Tutorial May 27 13h-14h Introduction to Linux Lecture download May 27 14h-15h Linux tutorials and exercises 24-27 May Introduction to R Lecture 24-27May R tutorial and exercises 24-27 May Introduction to population genetics Lecture May 28 13h-14h Question Time about R May 28 14h-15h Basic Manipulation of High-density SNP data Lecture and tutorial May 31 13h-13h30 Introduction to NGS technologies Lecture download May 31 13h30-15h Working on NGS data and File Formats with Ugene Tutorial June 1 13h-14h Working on NGS data and File Formats with Ugene Tutorial June 1 14h-15h Theory on signatures of selection Lecture June 2 13h-14h Theory on ancestry analyses Lecture June 2 14h-15h Practice demonstrating a selection signatures analysis with cattle data June 3 13h-15h Practice demonstrating a breed composition analysis with cattle data June 4 13h-13h20 Access and Benefit Sharing of genetic resources June 4 13h20-14h30 Q&A all material

Links to training material, if available	The course materials, videos and assignments were exchanged via the SLU canvas learning platform. https://slu-se.instructure.com/courses/4344 (Requires login)
Any other remarks	The free online course sparked a phenomenal response when it was first announced, with over 1,000 early-career scientists from 27 African countries applying for the 40 places available. We received positive feedback from thirty-three participants who completed the course
Course Organizers	Abdulfatai Tijjani, International Livestock Research Institute, ILRI-Ethiopia Emelie Zonabend König, Swedish University of Agricultural Sciences (SLU) Karen Marshall, International Livestock Research Institute, ILRI-Kenya
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