Original Research Article||

Graduate Research in Animal Sciences at Hawassa University: Scoping Review of Published Theses during 2009 to 2022

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Abstract

Hawassa University launched its first MSc programs in 2004 in various agricultural fields, including animal science specializations. In the past 20 years, the study programs diversified by fields of specializations and increased admissions. This scoping review assessed abstracts of 200 MSc theses of animal science graduates from Hawassa University produced during 2009 to 2022. The study was initiated to shed light on the trends in terms of diversity and quality of research conducted students. The study described theses in terms of research focus by livestock species studied, disciplines, geographic coverage, data collection approaches and statistical methods employed by students. The study further assessed whether graduate researches are orientated towards problem solving or whether they focus on information seeking/gathering/assessments. The most frequently studied species (96%) were cattle, sheep and chicken/poultry and goats, in descending order. Of the total theses, 85% were skewed to three research themes, 1) livestock feed resources and nutrition, 2) livestock production systems and/or product characterizations and 3) livestock genetic resources, breeding systems, reproduction and genetic improvements. The majority of the graduate students (89%) combined two or more data collection approaches. Out of the total MSc theses, 77% fall under information seeking/gathering/assessment researches. Only 22% theses were orientated towards investigative and problem-solving research. This scoping reveiw might shed lights to a further country wide study for all agricultural fields offered by the concerned Ethiopian public Universities which are running BSc, MSc and PhD programs. The results of such study can also be used to inform the need for developing suitable strategies for improving graduate studies in Ethiopia, in order to ensure that graduate studies will contribute to societal change and economic development through quality and impactful research outputs. Revisiting the animal science graduate study programs would contribute to increasing the contributions of graduate research for livestock sector development.

Key words: Graduate study programs; Quality research; Ethiopian Universities; Problem solving research

Original submission: May 09, 2024; **Revised submission**: September 13, 2024; **Published online**: November 21, 2024
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INTRODUCTION

Globally, the role of higher education institutions to overall development of human capital and its contributions for science, technologies and innovations as well as economic development is very well recognized (David et al., 2008; Allais, 2017; Agasisti and Bertoletti, 2022; Bing, 2023). Countries that invest more on higher education development programs have been rewarded by their continuous and sustainable economic development. For example, according to Bing (2023), China's gross enrolment rate in higher education increased from 30% in 2012 to 57.8% in 2021. In the same period, the country achieved a historic leap forward in building the world's largest higher education system which in turn led to rapid and consistent economic development in the country. However, a lot of shortcomings have been reported on the higher education systems of sub-Saharan Africa, which is identified as the only region in the world where food production per capita has decreased since 1970 (African Union, 2007). Africa's higher education system needs more investment not only to increase enrolments but also to substantially improve the quality of education and research in the existing programs. In many African universities and other academic and research institutions, quality of research is usually judged on the basis of scientific rigor including use of sound methodologies, and the communication of research results and deployment of graduates to

the wider job market and scientific community (Ochola et al., 2013). Further, it is imperative to analyze the impact of research from higher education systems, notably from graduate students, in view of its impact on societal change and overall economic development.
Countries usually review such graduate study programs and revisit their curriculums accordingly. Since agricultural sciences were introduced to Ethiopia, first at Diploma and later at Bachelor, MSc and PhD levels, there have been limited efforts to evaluate the quality of education and research outputs from universities. Few studies have been conducted to shed lights on the quality of education and thesis based research works. According to our review, the first and only scoping study was initiated by Eyasu Seifu (2005) who evaluated theses of MSc students from Haromaya University after programs were launched in the late 1980s.

Over the past three decades, Ethiopia witnessed a rapid growth and massification of higher education at undergraduate and graduate study programs. Hawassa University (HU), as one of first generation public Universities in Ethiopia, launched its first MSc study programs in 2005 and its PhD programs in 2012, both at the College of Agriculture. The programs included various agricultural study programs, including animal science. Until MSc programs were launched in 2005, Haromaya University was the only University in the country to run graduate study programs in animals science fields (Eyasu, 2005). During the last 20 years, the school of animal and range sciences of Hawassa University has produced over 200 MSc students in various animal science fields/specializations. This study seeks to review the theses which were electronically published/deposited at HU library, to assess the trends in terms of diversity and quality of research by graduate students. The study described the theses in terms of research focus by livestock species, discipline, geographic coverage/production system, data collection approaches, and statistical methods employed for data analysis. The study further assessed whether graduate researches have been orientated towards problem solving and investigative nature or if they rather focus on information seeking/assessments. Empirical evidences generated from this study will contribute to inform the need to revisit the graduate study programs in animal science fields to tailor them towards impactful research outputs which significantly contribute to inform responsible bodies on the development of livestock sector in the country. By taking this case study as an example, we will try to showcase how future graduate study programs in the fields of agricultural sciences should be impactful for societal change and economic development of the country.

MATERIALS AND METHODS

Data Collection Approach

Qualitative and quantitative research approaches have been used in describing and interpreting the information. The study adopted graduate thesis review methods, mainly involving systematic examination of electronic sources (Dolmaz et al., 2020). Electronic abstract of theses were used to extract both quantitative and qualitative information as used in Maxwell (2007) and Bowen (2009). The data was collected from Hawassa University Library and the detail can be accessed at http://etd.hu.edu.et(http://etd.hu.edu.et/handle/123456789/1779).

The MSc study program at Hawassa University was launched in 2004, and the first batch were admitted starting 2005. Theses produced from the school of animal and range sciences and those deposited at the library during 2009 to 2022 GC were used. Theses that were produced in the first two years (2007 and 2008) were not considered for the current analysis as they were not readily available in electronic forms. Data were extracted from MSc thesis titles, abstracts and key words on theses published by graduate students. Main sets of data extracted from the theses include profiles of graduate students, year of graduation, sex, nationality and fields of specializations. Major geographic locations of study areas, main livestock species studied, data collection methods, as well as data analysis methods applied by graduate students were analyzed. The theses were thematically analyzed by thesis categories (i.e. whether they were information seekers or more problem solving and investigative types). Data were organized on spreadsheets for further analysis. Contents of the abstract referring to their topic,

methods and main results were used for data extractions.

Working Definitions for Variables used in The Study

Study Areas: in this study all study areas of the graduate students were plotted into Ethiopian map. Students might have one or multiple Kebeles, districts or Zones in their theses. We considered a given administrative zone as a study area if there is any mention of Kebeles or districts from that zone its field experiment or social surveys.

Fields of Specializations: until this study was conducted, the school of animal and range sciences at Hawassa University had 5 MSc study programs/specializations within animal science fields. Graduate students might specialize in animal production, animal nutrition, animal breeding, dairy science and technology, animal biotechnology and range sciences (which was later named as range land ecology and management).

Data Collection Methods: In this study data collection methods were categorized into three 1) laboratory experiment/analysis, 2) field experiments and 3) social survey/house hold survey. Graduate theses were categorized based on their research unit and data sources for their primary data. Students might use only or combinations of two or three data collection methods. For example, if students used animal experiments (on farmers' fields or on stations), this study falls under category two. If students conduct formal or informal survey, or key informant surveys or group discussions or all, it falls under category 3.

Information Seeking versus Investigative/Problem Solving Thesis: in this study, theses were categorized into two as information seeking/assessment or investigative. If a given lab analysis, field experiment or social survey only assess information to describe and/or compare commodities, production systems or study areas by the given descriptors, it falls under information seeking/assessment. On the other hand, if students conduct experimental studies to test new methods, new products, new technologies, new innovations that solve a given societal problem, it falls under investigative research category. For example, if a given thesis deals with prevalence of a given diseases or nutritional contents a feed stuff, it falls under the first category. On the other hand, if the thesis deals with developing methods that minimize or control diseases on animals or developing a new feeding system, new diet formulations or introducing new products and test it, it falls under the investigative research category. Lists of MSc these titles are found as Annex 2.

Data Analysis

The data collected from graduate theses was organized in a way suitable for analysis on the basis of the various variables categorized by thematic focuses and methodological classes. The data content includes: year of publication (submission), gender, nationality, field of specialty, study area, species under consideration, data collection methods, statistical test, data analysis methods and tools (summary found as Annex 1). The data analysis was done using R software and MS Excel tools. The result was subjected to multiple analysis and plotted using tidyverse package to plot bar, histogram and others. The diagrammatic representation of workflow is shown in Figure 1.

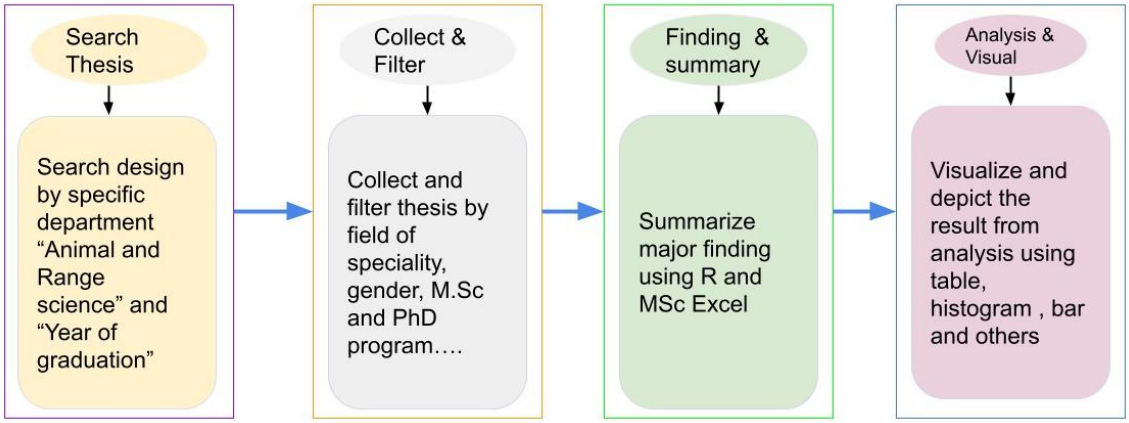

Figure 1. Workflow for thematic and methodological trend analysis from graduate theses 2009-2023

RESULTS AND DISCUSSION

Trends and Distributions of Graduate Theses by Fields of Specializations and Research Areas

Over the past three decades, Ethiopia witnessed a rapid growth of higher education and massive admissions of students in various animal science fields at undergraduate and graduate study programs. During these period, curriculums/programs for undergraduate and graduate study programs were rapidly growing and diversified. HU launched its first MSc study programs in 2005 and its PhD programs in 2012 including animal science under the College of Agriculture. By then, 4 MSc specializations, namely Animal Production, Animal Nutrition, Animal Breeding and Dairy Sciences were launched as research-based programs and begun admitting students. Between 2009 and 2022 GC, a total of 190 masters research theses were deposited at Hawassa University library (can be accessed at http://etd.hu.edu.et). Theses based on MSc research were produced since 2007, but electronic versions were available beginning from 2009.

Numbers of graduate theses documented under HU library system is presented in Figure 2 below. The result showed an increasing trend in the number of graduate theses published except the sharp decline during 2014 and 2015 resulting from admission of students only in two programs in 2012 and 2013. The highest number of MSc theses were produced during 2016 to 2021 as a result of the initiatives taken by the school to revise curriculums of existing programs, launching of more specialized fields followed by successive promotion of the study programs. After 2021, the number of graduate theses again started to decline, which might attributed to the increasing number of graduate study programs launched in various public Universities in the country in general and in southern region in particular. The national graduate admission test (GAT), which was introduced and implemented since 2023, significantly affected further admissions. For instance, no graduate student was admitted to HU during 2023/24 academic year). This policy might continue to affect admissions of graduate students and number of theses to be produced in the following years, as very few students have been able to pass the GAT. The first MSc thesis in animal science fields was produced in 1981 from Haromaya University which was the only University running MSc programs in animal science fields until 2004 (Eyasu, 2005). Today, over 50 public Universities in Ethiopia have animal science programs, at least at Bachelor level and most of them have also launched MSc and PhD programs. This will in one hand increase the total number of graduate students in the country, but have affected and may continue to affect admission rates per university including HU as the students are tending attend their graduate studies in the relatively nearby Universities.

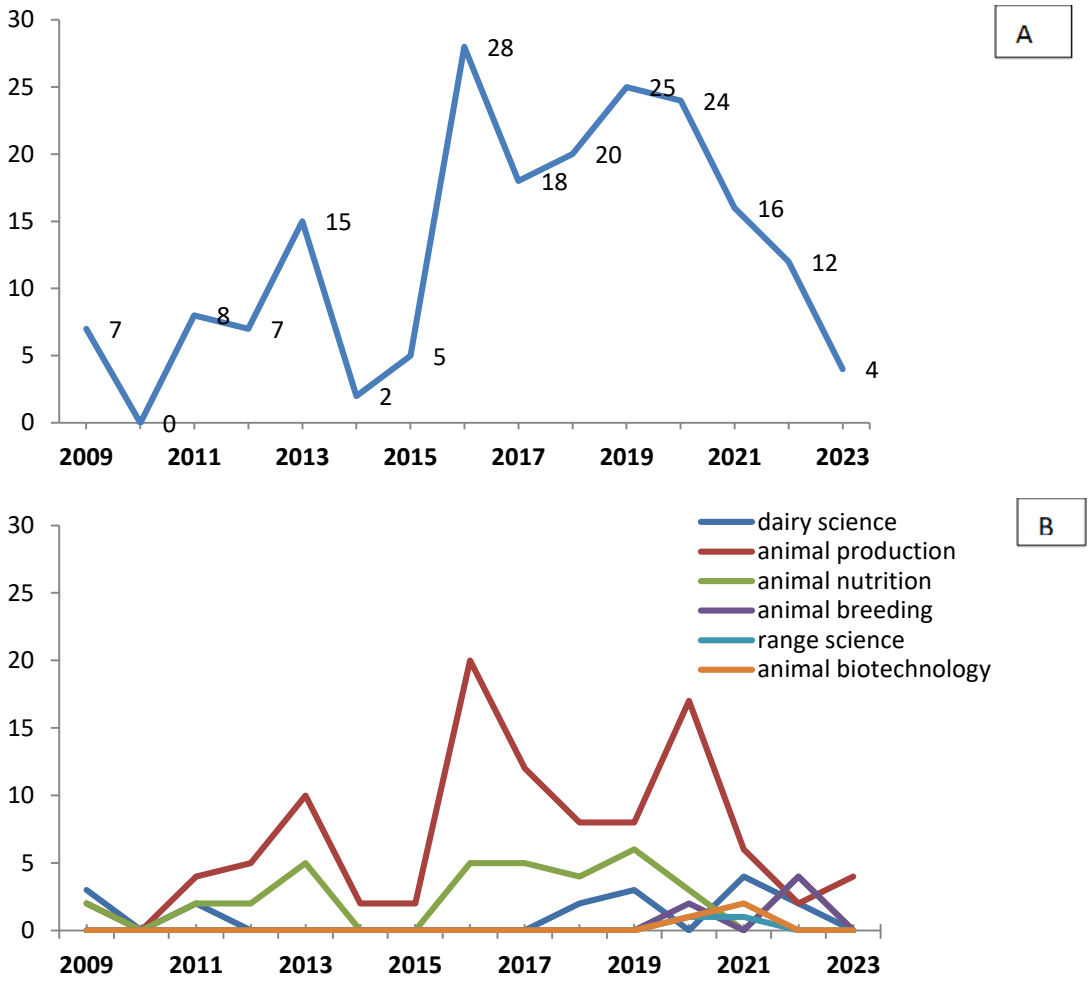

Figure 2. Overall trends on the number of graduate theses produced annually (A) and the corresponding specializations (B)

Figures 3 shows the profiles of graduate students by fields of specializations as disaggregated by sex of the graduates. The number of female graduates admitted during 2009-2022 were low and account only about 13% of the total graduates. Among the female graduates, 21% and 10.8% have attended animal nutrition and animal production programs, respectively. The overall proportion of female graduates in HU is low. However, it is higher than the reported 4.4% for Haromaya University (Eaysu, 2005). Inadequate physical infrastructure, equipment, and communication facilities; limited teaching and research capabilities; poor incentives for the academic staff; and limited funding for research have affected quality of research by graduate students in African Universities (Kristin et al., 2008), which also applies to Ethiopian public universities including HU. The proportion of international students in animal science study programs at HU were only 1%. Moreover, the graduate programs could not attract international students even from neighbouring countries. Should capacities of African Universities improve and contribute substantially to advancing science, internationalizing graduate study programs is highly recommended (Kristin et al., 2008). Low-income African nations were not succeeding well with internationalizing their graduate programs (Mohammad and Alireza, 2024). Lack of clear policies and guidelines; inefficient organizational structure; finance, infrastructure, and equipment problems; weaknesses in scientific skill, and language competences as well as cultural differences were mentioned as important barriers.

Internationalization is not a goal by itself but a means to excel and advance science and scientific outputs. More efforts should be made by the education stakeholders including the Ministry of Education and Ethiopian Universities to ensure quality of the graduate programs.

The highest number of theses were produced from graduates of animal production, which accounts for 53.7% of the total theses generated under animal science (Figure 3A). The number of students specialized in animal biotechnology and range sciences were low, as the two programs were launched only since 2018. Overall, the peak years by the number of theses produced were 2013, 2016 and 2020, while animal production and animal nutrition programs were dominating the graduate thesis research works. Since 2016, the school re-launched an MSc program in dairy sciences, which was later renamed as dairy science and technology. In 2018, most of the MSc curriculums were revised and new programs such as animal biotechnology were launched.

As shown in Figure 3 (B), the majority of graduate theses addressed three major thematic areas including, 1) livestock feed resources and nutrition, 2) livestock production systems and/or product characterizations and 3) livestock genetic resources, breeding systems, reproduction and genetic improvements in descending order (34.4%, 30.4%% and 19.8%), respectively. Overall, the above thematic accounted for 85% of the total graduate theses produced under animal science during the indicated period. The remaining 15% of the graduate theses focused on topics related to animal products safety and health, range and pastoralism, as well as other issues (such as wool, hide and skin, honey bees, draft animals, and biotechnology). The current study is supported by the unique study conducted at Haromaya University which studied graduate research topics during 1981-2005; which also showed that the highest proportion of students at Haromaya University focused on research topics related to feeds and nutrition (Eyasu, 2005). This could also be attributed to better availability of subject matter specialists in animal nutrition at the school, which was reflected over longer periods of time. The choices of fields of specializations as well as research topics/areas selected by graduate students may not necessarily reflect the country's/regional state's needs and priorities, but might be a reflection of multiple factors including the student interests and their supervisors. This entails the need for a strategy by which graduate research focuses should be guided in a demand driven manner. We observed that students who come from development and livestock extension have shown to join animal production programs while those coming from academic and research institutions prefer to specialize in highly specific fields such as animal nutrition, animal breeding, dairy science and animal biotechnology.

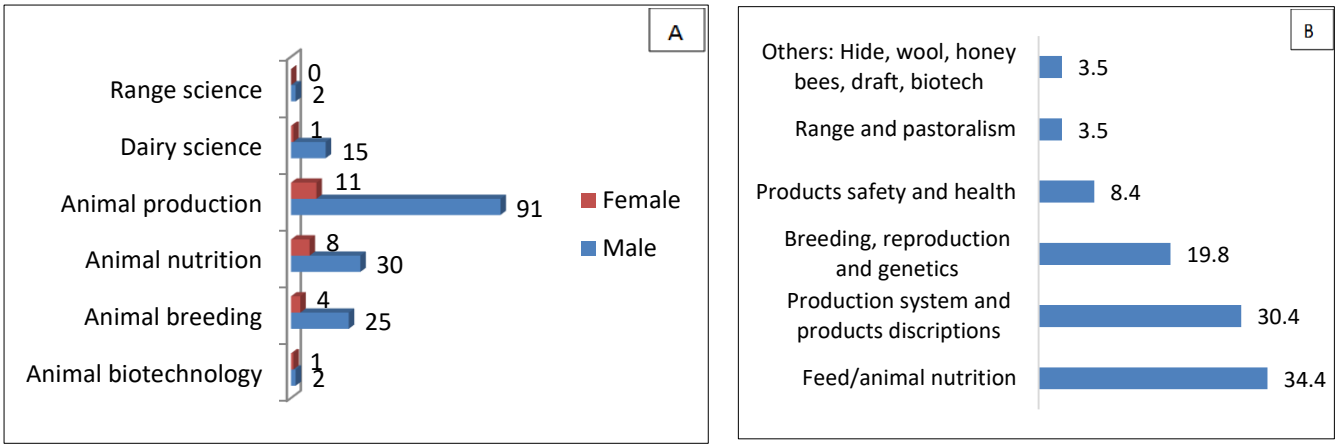

Figure 3. Number of MSc theses by fields of specializations and gender (A), and proportion (%) of theses by research thematic areas (B)

The result shows that the MSc theses were skewed to few thematic areas. This might have been due to lack sufficient experts/supervisors, or lack of the necessary courses to encourage graduate students to diversify their study areas. Some research areas such as livestock products quality (animal source foods), by-products utilization (such as wool, hair, hide and skin or other by products) were almost neglected in the graduate research undertakings. Feed is one of the most important inputs to livestock, and the major bottle neck for the country's livestock development, but graduate research works have not focused on developing/testing different feed processing technologies. Vibeke et al. (2008) showed that graduate students in the developed world are blamed for their low focus on spatial scale and lack of the broader perspectives at systems level (farm, landscape, and regional levels). Whereas our graduate students research is lacking rigor and not addressing more specific livestock problems.

Distributions of Theses by Geographic Locations/Study Areas

Figure 4 shows the major study areas covered by the graduate research theses. It shows that graduates of Hawassa University have a wide coverage of study areas within Ethiopia. No student did his/her study outside Ethiopia. Almost all regional states of Ethiopia were covered in the thesis research works of graduate students at Hawassa University. Mixed crop-livestock production systems in the mid-and highlands of Ethiopia have been mostly covered in the graduate research works. The Eastern, Western and South-Eastern low lands of Ethiopia were less covered by the graduate research works. In the past, graduate students usually cover wide areas (comparing multiple districts, zones or regions). In recent years, students are showing a tendency of reducing the spatial scale to the lowest administrative structures, covering only a glimpse part of a given district/Kebele due to its proximity to the University, their workplace or even to their home/residence places. This could be attributed mainly to the declining research funds and to avert associated risks.

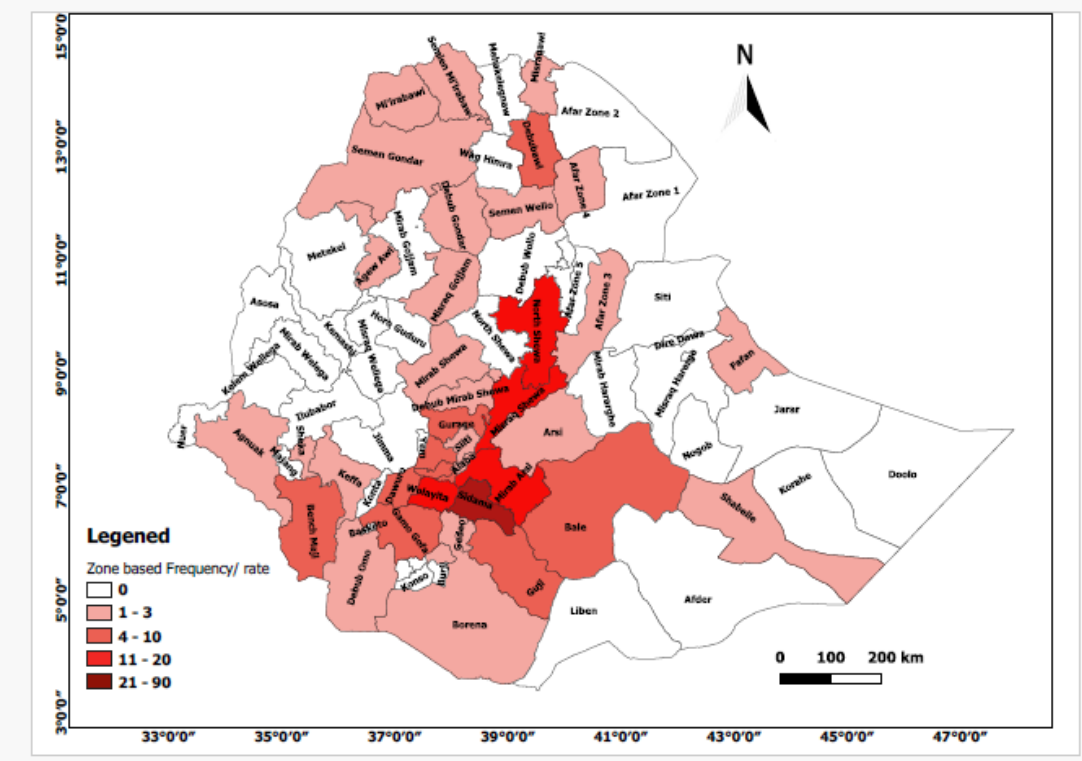

Figure 4. Geographic coverage of graduate research works at HU

Distributions of Graduate Theses by Studied Livestock Species

Figure 5 shows the major livestock species studied by the graduate students. Cattle,

sheep, poultry and goats, in descending order, were the most frequently studied livestock species. Graduate students specializing in animal production mostly did their thesis research on poultry followed by cattle and sheep. Honey bees, fish, equines/draft animals and other non-conventional livestock species (such as Guinea fowls) were not covered in the graduate research works. Ethiopia is known for plant and animal diversity. In view of this, the country would benefit much from diversifying studies on the commonly used as well as those neglected but important farm and non-farm animals. Hence, graduate students in animal science should not neglect camels, donkeys, horses, mules, and other poultry species besides chicken. This is possible only if the University/School could develop a research strategy for guiding graduate thesis, encompassing such as aspects as well. Undergraduate animal science programs have courses on swine production, camel production, honey bees (including the non-conventional ones). However, these have not been well captured in the MSc programs. This calls for the need to revisit curriculums and develop expertise on those areas and encourage graduate students to conduct their thesis researches on such neglected livestock species.

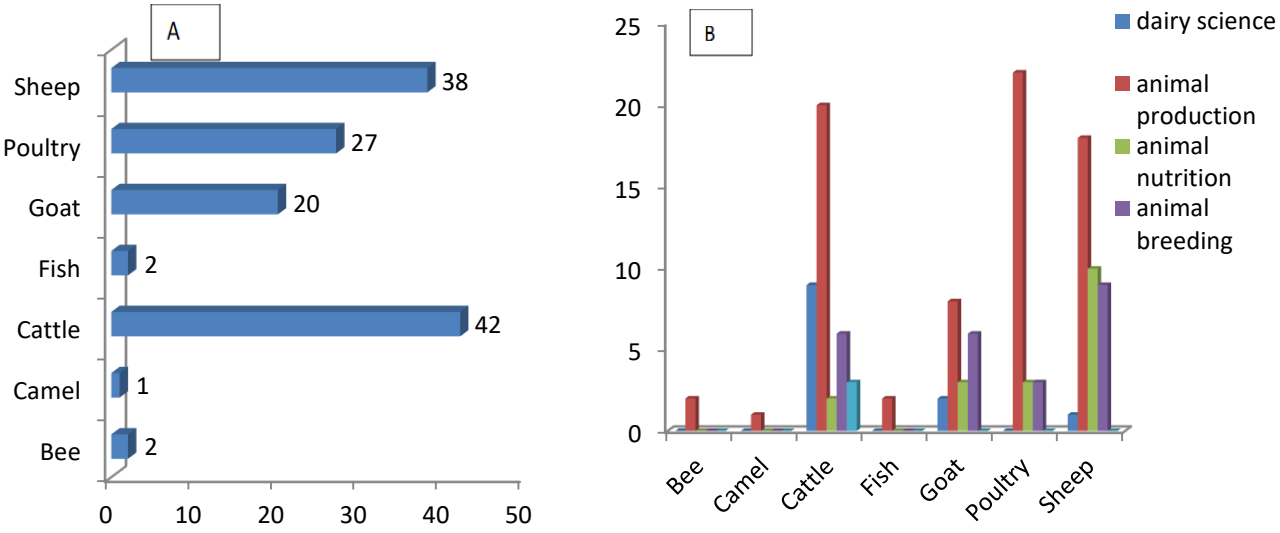

Figure 5. Overall frequencies of livestock species targeted in the graduate research (A), and also by fields of specializations (B)

Methodological Approaches and Data Analysis Techniques Applied by Graduate Students

Designing of experiments and conducting good data/statistical analysis are critical aspects of the education programs at graduate levels (Nick et al., 2021). Figure 6 below shows data collection approaches followed by the graduate students at HU. According to our assessment, graduate students applied three main data collection approaches: social assessments/farm-household survey, laboratory analysis/experiments, field experiments and/or combinations of the two or the three data collection approaches. Majority of the graduate students (89%) combined two or more of data collection approaches like social/household survey plus laboratory experiments, social/household survey plus field experiments, field experiments plus laboratory experiments, as well the combinations of the three approaches. The most predominant approach, however, was the field experiment followed by laboratory analysis.

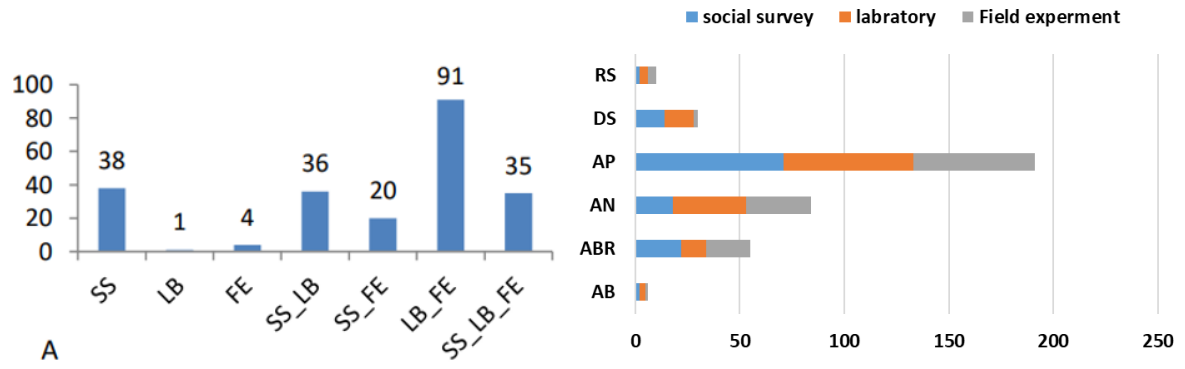

Figure 6. Data collection approaches followed by graduate students - SS (Social Survey), LB (Laboratory Analysis/experiment), and FE (Field Experiment), RS(Range Science), DS (Dairy Sciences), AP (Animal Production), AN (Animal Nutrition), ABR (Animal Breeding), AB(Animal Breeding)

Figure 7 shows sample sizes most graduate students used during household/farm assessment studies. Regardless of the research subjects/units, the most frequently mentioned sample size by the graduate students ranges between 100-200, accounting for over 75% of the cases.

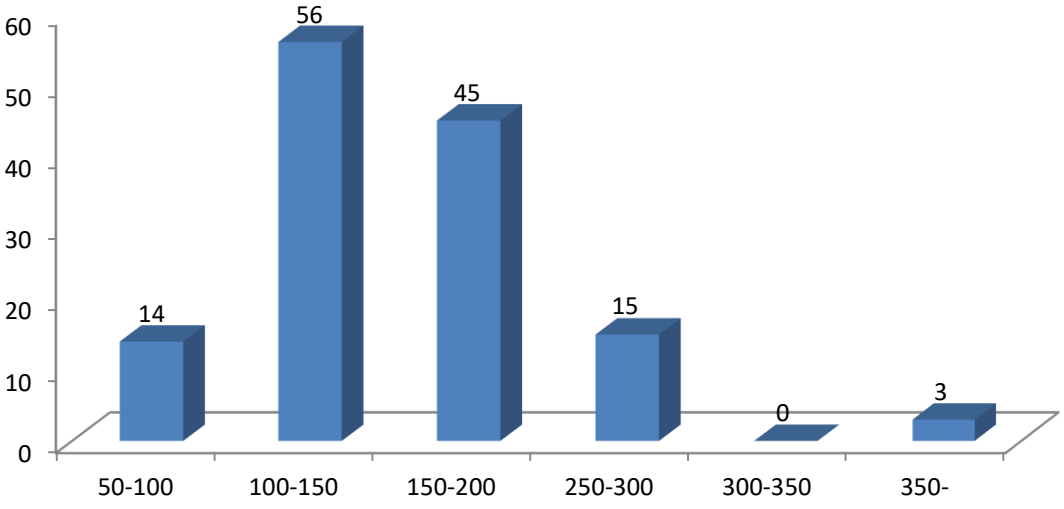

Figure 7. Sample sizes used by graduate students for collecting social survey data

Field experiments like forage agronomy, range/pastureland management and on-farm/on-station animal experiments have been shown to have very variable sample sizes depending on experimental designs and treatments to be tested. It was observed that sample sizes for laboratory assessments and controlled experiments were highly variable; ranging from one composite sample to tens of samples of feeds, milk, carcasses, blood, urine, feces, and hair/wool. Such studies usually

duplicate/triplicate samples to avoid sampling errors in their results.

Statistical Methods Employed by Graduate Students

Figure 8 illustrates the major types of statistical methods used for data analysis and testing treatment means by graduate students specializing in different fields. The heat-map on figure 9, further depicts the magnitude of test statistics applied by graduate students and the associated preferences by the respective fields of specializations. Non-parametric tests like Chi-square, and mean comparisons using Duncan, Tukey and LCD tests were mostly used by the students specializing in animal production. Statistical packages for social sciences (SPSS), followed by SAS, were widely used by those specializing in animal production and animal nutrition fields. Most students specializing in animal nutrition and those who conduct animal experiments use one-way ANOVA while those specializing in animal breeding and genetics use more advanced inferential statistics such as regressions using more specific statistical models.

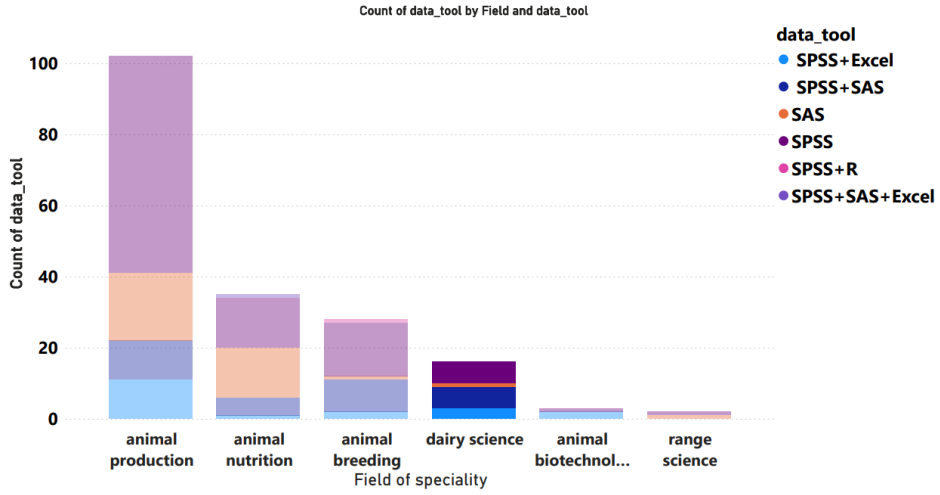

Figure 8. Statistical analysis tools used by graduate students specilizing in different fields

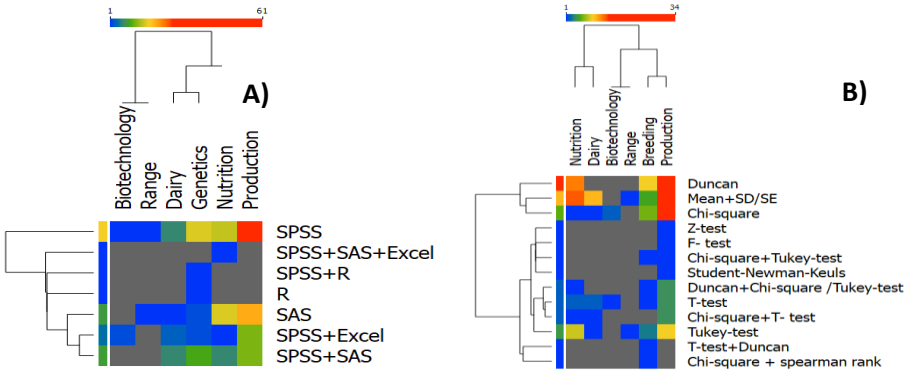

Figure 9. Heat map that shows softwares (A) and statistical tests (B) applied by graduate students (hint: frequency of the uses increases from the blue to red colors).

Information Seeking versus Investigative Research

Figure 10 shows the proportions of theses on the basis of graduate research orientation, i.e. information seeking Vs investigative and problem solving type of research. The result shows investigative and problem-solving research accounts for about 23.6% of the

graduate thesis research at HU. The rest 77.6% of the theses were tending towards information seeking types of research. Students tend to generate the types of data used to describe their study subjects (production system, livestock species, functions or performance of animals, morphometric and genetic traits, feed resources, quality and safety levels of animal products) through household surveys, field experiments or laboratory analysis. Kristin et al., (2008) reported that one of the key challenges of sub-Saharan African nations is the failure to make best use their universities as centers of innovations and problem-solving research institutions, mainly attributed to lack of well-established research infrastructures, experienced faculty members and funding.

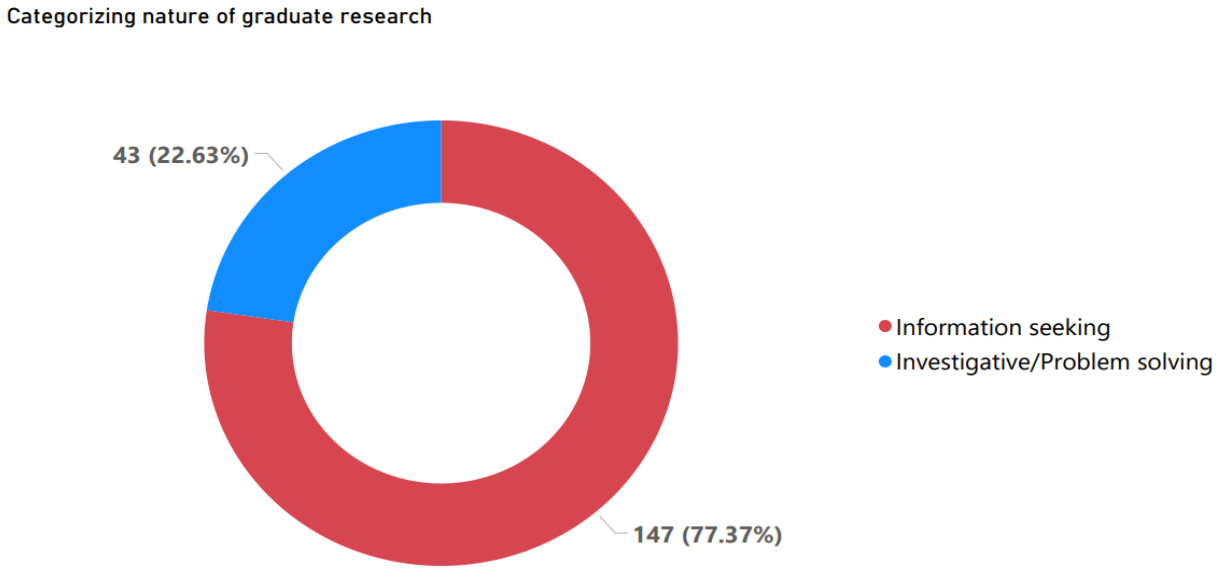

Figure 10. Proportion of graduate theses by the nature of research (information seeking Vs instigative/problem-solving)

Overall Implications of the Findings and Future Directions

Formal degree training in agricultural sciences in sub-Saharan African universities is largely discipline-based (Ochola et al., 2013). Graduates are equipped with the skills to design, manage and report on research projects, but are rarely able to deal with 'real life' situations related to empowering smallholder farmers and reducing poverty.

Agricultural education and training in sub-Saharan Africa can contribute to agricultural development by strengthening the capacity to innovate and introduce new products and processes, relevant to the major farming communities-smallholder farmers and allied actors. This intern would contribute to societal and economic developments (David et al., 2008). For this, not only curriculums and training approaches, but also researches conducted by graduate students should be orientated towards identifying more researchable problems, and generate problem-solving research outputs.

Little attention is given to the relevance of these graduates and their research findings in spurring innovation at different levels. Graduates should develop skills to design, implement and report on research and innovation processes, drawing on the scientific rigour that gives credibility to agricultural development. Further, quality of research by graduate students should be assessed on the basis of its contribution to reducing poverty through problem solving research, innovations and use of new knowledge and practices. This has been largely lacking in graduate research programs of many universities (Ochola et al., 2013).

A study conducted on graduate research focus in the West, notably in USA, Canada and Denmark has shown how graduate studies have advanced science and are becoming more rigor over time, However, still focusing is on lower levels of spatial scale, where graduate researches are lacking the broader perspectives at systems level (farm, landscape, and regional levels) (Vibeke et al., 2008). On the other hand, graduate research in Africa are blamed for its rigor and its contributions to bringing change to societal development. Should the research outputs be used to solve societal problems, graduate students should be encouraged and well supported technically and also logistically.

Considering the life of research by MSc studies, which is usually less than 1 year on course works, MSc research might be well designed/integrated as part of bigger thematic projects. Graduate students could, in one hand, learn how to design rigor research; on the other hand contribute to answering research questions faculty members are addressing as a long-term research that solves societal problems. Graduate research theses may be accessed only by certain segments of the society, mainly the scientific community. More communication documents, such as policy briefs, need to be emanated from MSc theses for the benefit of the wider end users.

Professional societies like the Ethiopian Society of Animal Production (ESAP) and the Ministry of Agriculture should not neglect the human resource development efforts of Ethiopian Universities, and should organize platforms and forums to review the overall teaching programs of the universities at all levels and accordingly identify intervention areas for improvement. This kinds of studies may help to provoke discussions/debates to assess the overall education system in the country. According to Erickson et al (2020), the role of American Society of Animal Sciences (ASAS) centennial review of animal sciences teaching was immense to transform animal science education programs in the USA. It resulted in a nationwide re-evaluation of the learning outcomes, course experiences, and re-assessment of the undergraduate programs in animal sciences. In view of this, ESAP could play a pivotal role in assessing the animal science education programs being implemented by the different Ethiopian Universities and outline suitable directions for policy actions.

CONCLUSIONS

This study made scoping review on graduate research in terms of the study programs, fields of specialization, geographic focus of the research, most studied livestock species, approaches of data collection and statistical methods/tools used for data analysis. The findings in this work may help to provoke discussions among the different stakeholders, and also further detail studies on graduate programs in the country at large, as part of improving quality of graduate research in animal science fields. Such discussions and further studies would increase the contributions of Ethiopian Universities and their graduate study programs to scientific outputs, human resource development and to their respective sectoral economic developments. This case study might shed lights to a further country wide scoping review for all agricultural fields offered by the concerned universities at BSc, MSc and PhD levels. The results of such study can also be used to inform the need for devising suitable strategies in order to ensure that graduate studies will contribute to societal change and economic development through quality and impactful research outputs. Revisiting the programs would contribute to increasing the contributions of such graduate study programs for livestock sector development.

The following issues might require due attention for further studies:

- Tracer studies on graduate students and their employees may help to revisit the study programs, for instance if thesis-based MSc is always required or else
- The current study could not address the scientific outputs from the theses/graduate students. Hence, further studies should consider to assess graduate research outputs in terms of their contribution to scientific publications in peer reviewed journals

- There is a need to extract applicable results from graduate theses and avail them in a way utilizable by different clients, including the grass root users-smallholder farmers. The recent initiative by HU to make abstracts public, is one encouraging step
- Universities may need to have strategies by which graduate research will be guided. Extending the study to more universities and various graduate programs at both MSc and PhD levels.

CONFLICTS OF INTEREST

Authors declare that they have no conflicts of interest regarding the publication of this paper with the Journal of Science and Development.

ACKNOWLEDGEMENT

Authors would like to express their appreciation for the support received from HU library, notably at the college of agriculture. We are indebted to CLIFOOD project at Hawassa University, for the small financial support to the library technicians in organizing the documents for this study and beyond. We are also grateful for the valuable inputs we might receive from anonymous reviewers of this article.

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Annex 1: Statistical Test Used by Graduate Thesis

Table 1: Statistical data analysis summery

Study approach	Description	characteristics features
Experimental design	Completely Randomized Design and Randomized Complete Block Design	
Social survey	Random sampling, Purposive random sampling, Multi- stage purposive sampling, Systematic stratified random sampling	
Qualitative	Descriptive and interpretive analysis	
Inferential	Apply inferential approach	ANOVA, Chi-square, t-test, p-value
Descriptive	Summarize data features	mean, median, Standard deviation,
Combined	Multiple statistical approach used for both qualitative and quantitative dataset	

Annex 2: List of graduate theses

2009

1. Alewi, Musa (2009-04-10) Characterization Of Smallholder Dairy Production Systems In Enemor And Ener Wereda Of Gurage Zone Of The Southern Nations Nationalities And Peoples Regional State, Ethiopia
2. Belay, Beshaw (2009-04-10) The Importance Of Small Ruminants To The Socio-Economic Well-Being Of People
3. Belete Shenkute (2009-04) Production And Marketing Systems Of Small Ruminants In Goma District Of Jimma Zone, Western Ethiopia
4. Mekonnen, Semira (2009-04-10) Effect Of Grazing Land Exclosure And Feeding Strategy On Livestock Water Productivity In Lencha Dima Watershed, Guba Lafto Woreda, Amhara Region
5. Tesfaye, Mulugeta (2009-06-10) Cattle Milk And Meat Production Systems In Arsi-Negelle Town, Oromia, Ethiopia
6. Tezera, Workneh (2009-06-10) Goat Husbandry Practices And Comparative Performance Of Amato And Introduced Begait Goats In Amaro Special Woreda, Southern Ethiopia
7. Zelalem, Tikunesh (2009-07-10) Assessment Of Livestock Production And Feed Resources In Gondar Zuria Woreda, Amhara Region

2011

8. Abebe, Almaz (2011-04-10) Dairy Production, Mastitis Prevalence And Milk Compositional Quality In Sebeta–Hawas Woreda Oromia Regional State, Ethiopia

9. Abie, Meseret (2011-02-10) The Effect Of Urea Treated Teff And Millet Straws Ongrowth Performance Of Sheep In Awi Zone, Northern Ethiopia
10. Alewi, Misba (2011-06-10) On-Farm Performance Evaluation Of Local Chickens And Their F1 Crosses With Rhode Island Red And Fayoumi Breeds In Beresa Watershed In Guraghe Zone, Southern Ethiopia
11. Bereda, Abebe (2011-02-10) Handling And Utilization Of Milk And Milk Products In Ezha District Gurage Zone, Snnrps
12. Bino, Gashahun (2011-05-10) Smallholder Goat Husbandery Practices And On-Farm Evaluation Enset Leaf Supplementation On Milk Yield And Composition By Lactating Does In Umbulo Wacho Watershed, Sidama Zone, Southern Ethiopia
13. Netsere Teklehaimanot Zewdea (2011-09) Pastoralists' Perceptions On Rangeland Degradation And Effect Of Prosopis Juliflora Canopy On Herbaceous Species In Goden District, Somali Regionland, Eastern Ethiopia
14. Thomas, Mesfin (2011-05-10) Evaluation Of Farmer's Perception, Chemical Compositin And Degradability Of Enset (Enset Ventricosum) As Animal Feed In Wolaitta, Southern Ethiopia
15. Worku, Zemene (2011-06-10) Investigating Village Chicken Production System, Consumption Pattern And Egg Quality Parametre In Goncha Siso Enesie Woreda Of Amhara Region

2012

16. Abiy Fisseha (2012-09) Effect Of Supplementation Of Effective Microbes On Growth, Serum Biochemical Parameters And Carcass Traits Of Bovans Brown Chicks
17. Akuri Alemu (2012-09) The Effect Of Feeding Different Proportions Of Enset Leaf And Whole Sugarcane On Intake And Growth Of Goat And Dry Matter Degradability Of Enset Leaf And Whole Sugarcane
18. Ayele Abebe (2012-11) Small-Holder Farms Livestock Management Practices And Their Implications On Livestock Water Productivity In Mixed Crop-Livestock Systems In The Highlands Of Blue Nile Basin: A Case Study From Fogera, Diga And Jeldu Districts (Ethiopia).
19. Aynalem Teshome Demissie (2012-03) Characterization Of Smallholder Chicken Production System In Sinana District Of Bale Zone, Southern Oromia
20. Dinku Getu (2012-09) Nutritive Value Of Natural Pasture From Grazing Land, Two Varieties Of Sweet Potato Morphological Fractions, And Effect Of Feeding Sweet Potato Vine To Grazing Sheep
21. Fsahatsion Hailemariam Baragaber (2012-02) Production System And Morphological Characterizations Of Indigenous Sheep Populations Found In Gamogofa Zone, Southern Ethiopia
22. Teshome Gedefa (2012-11) Evaluation Of Production and Reproduction Performances Of Arsi-Holstein Friesian Crossbred Dairy Cattle: A Case Of Assela Model Agricultural Enterprise, Arsi Zone, Oromia Region

2013

23. Amare Abera (2013-12) Livestock Feed Resource Assessment, Growth Performance And Blood Biochemistry Of Grazing Local Goats Supplemented With Graded Levels Of Sweet Potato (Ipomoea Batatas) Silage In Loma Woreda, Southern Ethiopia.
24. Asdesach Churfo (2013-06) The Effect Of Substituting Noug Seed Cake With Pigeon Pea Leaf On Feed Intake, Digestibility, Nitrogen Utilization And Growth In Sheep Fed A Basal Diet Of Rhodes Grass Hay
25. Biruk Bogale (2013-01) Assessment Of Feed Availability And Effect Of Processing Techniques Of Sweet Potato (Ipomoea Batatas) Vine On Growth Performance And Serum Biochemistry Of Lambs In Damot Gale Woreda Of Wolaita Zone, Snnpr.
26. Churfo, Asdesach (2013-06-10) The Effect Of Substituting Noug Seed Cake With Pigeon Pea Leaf On Feed Intake, Digestibility, Nitrogen Utilization And Growth In Sheep Fed A Basal Diet Of Rhodes Grass Hay
27. Deneke Negassa Sima (2013-05) Production System And Morphological Characterization Of Indigenous Chicken In Tiyo, Hetossa And Dodota Woredas Of Arsi Zone, Oromia, Ethiopia

28. Gebreegziabher Zereu (2013-03) Chemical Composition And In Vitro Dry Matter Digestibility Of Fresh, Dried And Ensiled Vines Of Sweet Potato (Ipomoea Batatas) Cultivars
29. Girma Terefe Kokobe (2013-04) Estimation Of Body Weight Of Native Cattle Using Some Morphological Measurements At Maki District
30. Hiwot Bekele Hailu (2013-06) Assessment Of Indigenous Knowledge In Livestock Rearing Practices At Arbegona And Lokabaya Woreda Of Sidama Zone, Southern Ethiopia
31. Kassa Demo (2013-02) Performance Of Local Sheep Fed Natural Grass Hay Supplemented With Different Levels Of Millettia Ferruginea Leaf Meal
32. Kassahun Habtegiorgis (2013-02) Evaluating Poultry Production System And Egg Quality Parameters Of Village Chickens At Hawassa Zuria Woreda, Southern Ethiopia
33. Lijalem, Tsegay (2013-03-10) Assessment Of Consumption, Some Nutritive Parameters And Marketing Of Ruminant Meat And Meat Animals In Hawassa City, Southern Nations, Nationalities And Peoples Regional State, Ethiopia
34. Roman Alemayehu Gibe (2013-03) Effect Of Drying Methods And Plant Fraction On Chemical Composition And Nutrient Degradability Of Sweet Potato (Ipomoea Batatas) Leaves And Vines With And Without Rhodes Grass (Chloris Gayana) Hay
35. Seyoum Debebe (2013-12) Effect Of Feeding Different Levels Of Furfurame Replacing Maize On Growth Performance And Carcass Characterstics Of Hubbard Chickens
36. Tsegaye, Meseret (2013-06-10) Effects Of Substituting Maize With Kocho On Intake, Digestibility, Nitrogen Utilization And Weight Gain In Sheep Fed A Basal Diet Of Rhodes Grass Hay
37. Yared Fanta (2013-06) Studies On Some Wool Quality Parameter Sheep, Arsi-Bale Locations 1 Some Wool Quality Parameters Of Dorper Bale Sheep And Their Crosses Reared In Two Locations Of Southern Ethiopia

2014

38. Aman Getiso (2014-01) Effect Of Substitution Of Kocho For Maize On Feed Intake, Digestibility, And Body Weight Gain Of Sheep Fed Rhodes Grass Hay As Basal Diet
39. Deginet H/Meskel (2014-04) The Effect Of Feeding Graded Levels Of Moringa Stenopetala Leaf Meal On Feed Intake, Growth And Carcass Characteristics Of Arsi- Bale Goats

2015

40. Chiemela Peter Nwogwugwu (2015-06) Some Morphometric Traits And Structural Indices Of Boer, South Wollo And Their F1 Crossbred Goats Reared At Ataye Farm, Ethiopia
41. Gelaye Gebisa (2015-06) Effects Of Non – Genetic Factors On Wool Quality Parameters Of Menz Sheep At Debre Birhan, Ethiopia
42. Metsafe Mamiru Mamo (2015-01) On-Farm Performance Evaluation And Community Based Traditional Selection Methods Of Bonga Sheep In Adiyo Kaka Woreda, Southern Ethiopia
43. Mitiku Yohannes (2015-01) Comparative Studies Of On-Farm And On-Station Performance Of Crossbred (Dorper X Arsi-Bale) And Arsibale Sheep Reared In Southern Ethiopia
44. Temesgen Alemu (2015-01) Evaluating The Effect Of Feeding Different Levels Of Sweet Potato (Ipomoea Batatas) Leaf Meal On Feed Intake, Growth Performance And Carcass Characterstics Of Broilers

2016

45. Abiyu Tadele Alene (2016-06) Phenotypic Characterization Of Indigenous Chicken Populations And Their Productio N Systems In Kaffa Zone, South Western Ethiopia
46. Abule Guye Wodeso (2016-06) Traditional Husbandry Practices With Some Productive And Reproductive Performance Traits Of Gumuz Goat In Nuer Zone, South Western Ethiopia

47. Ahmed Hussein Gobena (2016-06) The Potential Of Coarsely Ground, Gelatinized And Soaked Maize Grain And Wheat Bran As Energy Supplements To Arsi-Bale Sheep Fed A Basal Diet Of Native Grass Hay
48. Asemahegn Mersha (2016-01) Determination Of Cultivar-Dependent Variation In Food-Feed Traits In Lentil (Lens Culinaris)
49. Behailu Samuel (2016-03) Husbandry Practices And Productivity Of Arsi-Bale Goats In Agarfa District Of Oromia Regional State, Ethiopia
50. Belete Kuraz Abebe (2016-11) The Role Of Bole (Lake Soil) As A Mineral Supplement To Arsi-Bale Sheep Fed Native Grass Hay And Concentrate Supplement
51. Debir Legesse (2016-01) Assessment Of Breeding Practices And Evaluation Of Estrus Synchronization Of Dairy Cattle In Sidama Zone, Southern Ethiopia
52. Dereje Andualem Gellaw (2016-06) Nutritional Evaluation And Supplementary Value Of Stinging Nettle (Urtica Simensis S) On Milk Yield And Composition Of Lactating Arsi-Bale Goats And Growthperformance Of Their Suckling Kids
53. Eyob Marufa Wobisa (2016-03) On-Farm Performance Evaluation Of Abera Sheep Under Community Based Breeding Practices In Dara Woreda, Southern Ethiopia
54. Feleke Tadesse Froche (2016-06) Growth Performance And Nutritive Quality Of Tree Lucerne (Chamaecytisus Palmensis) Fodder Under Different Management Conditions In The Highlands Of Ethiopia
55. Fisahaye Abraha Woldu (2016-01) Indigenous Knowledge Of Livestock Husbandry And Ethno Veterinary Practices In Endamohoni District Of Tigray Region, Ethiopia
56. Gashu Geremew (2016-06) Assessment O F Availability And Nutritive Values Of Feed Resources And Their Nutrient Contribution To The Livestock In Chire Woreda, Southern Ethiopia
57. Gebregiorgis Gebrehiwot Hailu (2016-11) Effect Of Feeding Leucaena Leucocephala Leaves And Pods On Feed Intake, Digestibility, Body Weight Change And Carcass Characteristic Of Tigray Highland Sheep Fed Basal Diet Wheat Bran And Grass Hay
58. Hailu Assefa Getahun (2016-11) Production System And Phenotypic Characterizations Of Indigenous Chicken Populations In Sheka Zone, South Western Ethiopia
59. Kedir Abdurahman Terie (2016-06) Studies On Poultry Management Practices, Marketingsystem And Effect Of Feeding Fish Meal On Growth Performance And Carcass Characteristics Of Koekoekchickens In Bora District, East Shoa Zone
60. Mastewal Asfaw Defar (2016-11) Effect Of Including Graded Level Of Silkworm (Bombyx Mori) Feces In The Diets Of Nile Tilapia (Oreochromis Niloticus) On Their Growth Performance In Ziway, Ethiopia
61. Mekete Girma Asfaw (2016-01) Morphological Traits And Structural Indices Of Woyito-Guji Goats Reared At Nyangatom And Malle Woredas Of Snnprs, Ethiopia
62. Mengistu Lemma Lebena (2016-02). Assessment Of Feed Resource Availability And Quality In Kedida Gamela Woreda, Southern Ethiopia
63. Merga Bayssa Becho (2016-09) Nutritional Evaluation Of Major Browse Species From Afar And Borana Rangelands And Supplementary Values Of Acacia Tortilis Leaves To Arsi-Bale Goats
64. Mulugeta Gudisa Goro (2016-03) Assessment Of Grazing Land Condition, Herbaceous Biomass Species And Chemical Composition In Adami-Tullu Jido-Kombolcha And Arsinegelle Woredas, Southern Ethiopia
65. Nebiyu Chalew (2016-06) The Effects Of Sweet Potato (Ipomoea Batatas) Leaf Supplementation On Nutrient Intake, Growth Performance, Digestibility And Nitrogen Utilization Of Arsi-Bale Sheep Fed Natural Grass Hay As A Basal Diet
66. Nigatu Wolde (2016-11) Assessment Of Feed Resource Availablity, Feeding System And Nutritional Quality Of Some Feedstuffs Used For Dairy Farms In Sodo Town And Sodo Zuria Woreda, Southern Ethiopia

67. Simachew Fetene Ayenew (2016-11) Effect Of Nitrogen Fertilizer Rates And Harvesting Days On Yield And Quality Of Blue Panic Grass (Panicum Antidotale Retz) Under Irrigation At Gewane District, North Eastern
68. Tamene Tadesse Tessema (2016-02) Effect Of Faba Bean (Vicia Faba L.) -Forage Inter-Cropping: Benefits And Trade-Offs To Improve Feed Resources In Lemo Woreda, Southern Ethiopia
69. Tesema Tego (2016-01) Effect Of Supplementing Different Proportionof Enset(Ensete Ventricosum) And Sesbania (Sesbania Sesban) Leaf Meals On Feed Intake,Digestibility,Nitrogen Utilization, And Growth On Sheep Fed On Natural Grass Hay As Basal Diet
70. Tewelde Gebru (2016-01) Studies On Morphometric Characteristics, Performance And Farmers' Perceptions On Begait Cattle Reared In Western Tigray,
71. Welelaw Edmew Worku (2016-11) Assessment Of Production System, Egg Quality And Carcass Characteristics Of Village Chicken In Bench Maji Zone, South Western Ethiopia
72. Zerihun Janje Boroje (2016-11) Assessment Of Livestock Feed Resources And Nutritional Qualities Of Major Livestock Feeds In Aleta Chuko Woreda, Southern Ethiopia

2017

73. Abebayehu Demeke Alagaw (2017-03) Physiomorphological Parameters Of Semen Obtained From Selected Bulls Raised At National Artificial Insemination Center And Its Effect On Conception Rate Of Cows Reared At North Shoa, Amhara Region, Ethiopia
74. Addisu Abera Wondimie (2017-02) Effect Of Poultry Litter Supplementation On Feed Intake, Digestibility, Weight Gain And Carcass Characteristics Of Arsi- Bale Sheep Fed Natural Pasture Hay
75. Amine Mustefa (2017-10) Genetic And Non-Genetic Factors Affecting Survivability, Growth And Reproductive Performance Of Boer And Central Highland Goats And Their Crosses Reared At Ataye Farm, North Shoa, Ethiopia
76. Askale Dubale (2017-06) Assessment Of The Utilization Practices Of Banana And Mango Residues, And Effect Of Ensiling On Silage Quality And Performance Of Indigenous Sheep Grazing Natural Pasture In Arba Minch Zuria District Of Gamo Gofa Zone
77. G/Hiwot W/Ananya Yigzaw (2017-01) Effect Of Urea Fertilization Rate And Harvesting Stage On Yield And Nutritive Value Of Buffel Grass (Cenchrus Ciliaris Linn) Under Irrigation At Gewane District, North Eastern Ethiopia
78. Galaye Ganebo (2017-11) Effect Of Partial Substitution Of Noug Seed Cake With Stinging Nettle (Urtica Simensis S.) Leaf Meal On Egg Quality Parameters Of Commercial Layer Hens
79. Gezahegn Shirmeka Hemecho (2017-06) Bovine Tuberculosis In Crossbred Dairy Cattle In Wolaita Sodo Town, South-Western Ethiopia: Prevalence, Associated Risk Factors And Its Effect On Milk Production
80. Hussein Abduku Worku (2017-09) Farming System And Traditional Grassland Management Practices: The Case Of Kofele District, Western Arsi Zone, Ethiopia
81. Kaangundue Brian (2017-02) Assessment Of Feed Resources Availability, Quality And Livestock Production In Mixed Crop-Livestock System In Loka Abaya District Of Sidama Zone, Southern Ethiopia
82. Mengistu Masebo Lambebo (2017-03) The Effect Of Partial Substitution Of Noug Seed Cake With Cassava (Manihot Escutulata C.) Leaf Meal On Feed Intake, Growth Performance And Carcass Traits Of Ross 308 Broiler Chickens
83. Moges Demilie Temesgen (2017-02) The Effect Of Growing Niche, Management System And Season On Yield And Quality Of Desho (Pennisetum Pedicellatum)Grass In Jeldu District, West Shewaethiopia.
84. Mosebework Kassa (2017-10) Effect Of Replacing Maize (Zea Mays L.) With Partially Cooked Orange Fleshed Sweet Potato Tuber (Ipomoea Batatas) On Feed Intake, Body Weight Gain And Carcass Characteristics Of Cobb 500 Chickens

85. Nigatu Dejene Deneke (2017-03) Assessment Of Production And Marketing Systems, And On-Farm Evaluation Of The Effect Of Supplementing The Leaves Of Balanites Aegyptiaca And Maize Grain On Growth Performance And Economic Return Of Indigenous Goats In Gamogofa Zone
86. Serkalem Assefa (2017-11) Management Practices, Egg Production And Linear Body Measurment Traits Of Local And Exotic Chickens Reared Under Traditional Production System In Boricha Woreda, Sidama Zone
87. Tadesse Bokore (2017-01) The Effect Of Feeding Itacha (Dodonaea Angustifolia) Leaf Meal On Parasite Load And Growth Performance Ofgoats Infected With Hemonchus Contortus Larvae
88. Tamirat Negash Gure (2017-01) Detection Of Virulences And Evaluation Of Wheat Lines (Triticum Spp.) For Resistant To Stripe , Leaf And Stem Rust (Puccinia Spp.) In Central And South-East Ethiopia
89. Yaregal Melak (2017-04) Effects Of Distance From Water Points On Grassland Condition, Biomass Production And Nutritional Quality Of Grasses In Chagni Ranch, North-West Ethiopia
90. Yitatekush Fidel (2017-11) Production And Reproductionpotentialof Native And Crossbreed Cattle And Their Milk Qualityr Eared In Selected Woredas Of Gurage Zonesouthern, Ethiopia
91. Yonas Kejela (2017-11) Urban Poultry Production Systems And Egg Quality Parameters Of Local And Exotic Chickens Reared In Yirgalem And Hawassa Towns

2018

92. Abdi Abdilahi (2018-11) Study On Management Practices And Constraints Of Black Head Somali Sheep Reared In Awbarre Distirict Of Fafen Zone, Somali Region, Ethiopia
93. Abdulahi Mahamed (2018-11) Assessment Of Management Practices, Performance And Constraints Of Camel In Kebri Dahar District, Somali Region, Ethiopia
94. Aman Gudeto (2018-05) Studies On Structural, Fuctional Traits Traditional Breeding Practices Of Arsi Cattle In East Shoa And West Arsi Zones Oromia Regional State, Ethiopia
95. Amanu Abate (2018-06) Phenotypic Characterization Of Indigenous Sheep Populations In Agarfa Woreda, Bale Zone, Oromia Regional State, Ethiopia
96. Ashebir Worku (2018-02) Morphometrical Characterization And Traditional Breeding Objectives Of Native Sheep Reared In East Shoa And West Arsi Zone Of Oromia Regional State
97. Ashebir Worku (2018-02) Morphometrical Characterization And Traditional Breeding Objectives Of Native Sheep Reared In East Shoa And West Arsi Zone Of Oromia Regional State
98. Dereje Dea (2018-06) Phenotypic Characterization And Oestrus Synchronization Of Indigenous Goats For Improved Reproductive Efficiency In Mirab-Abaya And Arbaminch-Zuria Districts Of Gamo-Gofa Zone, Southern Ethiopia
99. Elias Tekle (2018-10) Effect Of Replacing Niger Seed Cake (Guizotia Abyssinica) With Mulberry Leaf Meal (Morus Alba) In The Diets Of Nile Tilapia (Oreochromis Niloticus) On Their Growth And Carcass Performances
100. Endale Tesfaye Doelaso (2018-06) Assessment Of Dairy Production, Products Consumption And Income Among Improved Dairy Production Technology Adopter And Non-Adopter Households Of Selected Districts Of Sidama Zone, Southern Ethiopia
101. Geberemariyam Terefe (2018-06) Comparative Evaluation Of Total Mixed Ration Andconventional Feeding For Post Weaned Jersey Calves Inthe Central Highlands Of Ethiopia
102. Jemal Ebrahim (2018-03) Comparative Evaluation Of Wheat Bran, Sorghum And Maize Grain As Energy Supplements To Arsi-Bale Lambs Fed Basal Diet Of Haricot Bean Straw
103. Kownin Abdimahad (2018-11) Production, Utilization, Handling And Quality Of Blackhead Somali Sheep Milk From West-Jigjiga District Of Fafan Zone, Somali Region, Ethiopia
104. Legesse Shiferaw (2018-10) Microbial Quality And Antibiotic Residues In Pasteurised Milk In And Around Addis Ababa

105. Miressa Benti Futassa (2018-11) Assessment Of Dairy Cattle Production, Handling And Marketing Systems Of Milk And Milk Products In Bako Tibe District Of West Showa Zone, Oromia Regional State, Ethiopia
106. Muluemebet Nigatu (2018-03) Establishing Nutrient Requirements Of Horro, Koekoek, And Debrezeit White Chicken Genotypes Reared At Different Energy And Protein Levels Of Feeding Regimen
107. Natineal Yohannes Abula (2018-06) The Effect Of Spices On Microbial Activity And Acceptability Of Milk And Milk Products
108. Nenko Balli Genale (2018-09) Assessment Of Livestock Feed Resources, Utilization Practices And Nutritional Evaluation Of Major Browse Species In Melka Soda District, Southern Ethiopia
109. Ohcam Negsemet (2018-06) Sevitarepooc Yriad Fo Selor Rof Mraf Redlohllams Er Sdrawot Ytilauq Noitcudorp Klim Am Dna R :Gnitek D Fo Esac Eht A Atela Dna El W Tcirtsid Odno S , Amadis Z Eno O Nrehtuos F Ipoihte A
110. Shimelis Mengistu (2018-06) Assessment Of Forage Production, Feed Resource Utilization And Substitution Effect Of Oat-Vetch Forage For Concentrate Mix On Performance Of Sheep Fed Desho Grass (Pennisetum Pedicellatum) As A Basal Diet In Damot Gale District Of Wolaita Zone, Snnpr
111. Tesfahun Kebede (2018-06) Assessment Of Morphological Traits, Egg Quality And Carcass Components Populations In Metekel Zone Hawassa Unversity College Of Agricultur Of Morphological Traits, Egg Quality And Components Of Local And Exotic Chicken.
112. Tsehay Aboye (2018-02) Traditional Husbandary Practices, Production System, Breeding Objectives And Selection Criteria Of Arsi-Bale Goats Reared At Different Agro Ecologies Of Bale Zone, Ethiopia

2019

113. Alemayehu Aiza (2019-02) The Availability And Nutritional Value Of Urban Solid Food Waste To Cobb 500 Broilers: The Case Of Hawassa City, Snnp, Ethiopia
114. Bezawork Tesfaye (2019-03) Genetic And Non Genetic Factors Influencing Productive And Reproductive Traits Of Crossbred Cattle Of Different Genotypes Reared At Agarfa And Alage Atvet Farms, Ethiopia
115. Kassahun Wube Borshe (2019-03) Assessment Of Dairy Cattle Crossbreeding Practices And Performances Under Smallholder Managements In Debre Libanos And Wuchale Districts Of North Shoa, Ethiopia
116. Mohammednur Kedir Gemechu (2019-03) Assessment Of Availability, Constraints And Nutritive Value Of Livestock Feed Resources Produced In Zeway Dugda District, Central Ethiopia
117. Yaekob Bunke (2019-03) Productive And Reproductive Performances, Husbandry Practices And Associated Problems Of Crossbred And Indigenous Dairy Cattle In Gamo Goffa Zone, Snnpr, Ethiopia.
118. Wasihun Berta Denbi (2019-03) Evaluation Of Productive And Reproductive Performances Of Local And Their Crossbred Dairy Cattle Under Farmers' Management In Agarfa District Of Bale Zone, Oromia, Ethiopia
119. Gutu Yemane (2019-03) Phenotypic Characterization Of Indigenous Goat Populations Reared Under Farmers' Management In Jimma Zone, Oromia Regional State, Ethiopia
120. Hayelom Znabu Meresa (2019-03) Effect Of Supplementing Graded Levels Of Wet Brewery Grain By-Product To A Basal Diet Grass Hay And Wheat Bran On The Performance Of Highland Sheep Of Tigray
121. Sisay Fekadu Getahun (2019-03) Livestock Husbandry And Ethno Veterinary Practice In Gewane District Of Southern Afar, Ethiopia
122. Hamid Mohammed (2019-03) The Effect Of Harvesting The Effect Of Harvesting Time On Biomass Yield And And Chemical Composition Of Brachiaria Brachiaria Cultivars And Napier Grass Cultivars And Napier Grass At Fogera District, North Western Ethiopia District, North Western Ethiopia
123. Aselefech Tefera (2019-03) Meta-Analysis Of Village Chicken Production Systems And Their Performance In Ethiopia
124. Gemede Ware Dekama (2019-03) Hygienic Practice And Microbiological Quality Of Raw Cow Milk In Selected Small Holder Dairy Farms In Bule Hora District Western Guji Zone, Ethiopia

125. Shanbel Besufkad (2019-03) Evaluation Of Artificial Insemination In Menz Sheep Following Estrus Synchronization With Progestogen And Prostaglandin-Based Synchronization Protocols
126. Senait Tesfaye Motosa (2019-04) Assessment Of Honey Production And Marketing Systems In Dale District Sidama Zone, Southern Ethiopia
127. Meseret Tsegaye (2019-06) Effects Of Substituting Maize With Kocho On Intake, Digestibility, Nitrogen Utilization And Weight Gain In Sheep Fed A Basal Diet Of Rhodes Grass Hay
128. Teshome Alemu (2019-06) Assessment Of Livestock Feed Resources, Feeding System And Nutritional Evaluation Of Major Feed Resources In Aleta Chuko District, Sidama Zone, South Ethiopia
129. Kedir Kaka Ombe (2019-06) Effects Of Replacement Of Concentrate Mix With Dried Cactus Cladode (Opuntia Ficus-Indica) On Digestibility, Body Weight And Carcass Characteristics Of Yearling Arsi Bale Goats
130. Aschalew Abebe (2019-06) Response To Selection And Farmers' Ram Selection Practices Under Menz Sheep Community Based Breeding Program In North Shoa, Ethiopia
131. Arok Agwa (2019-06) Milk Production And Traditional Processing Practices In Itang District Of Gambella Regional State, Ethiopia
132. Abrha Reta Tikuye (2019-06) Effect Of Supplementing Air Dried Ziziphus Spinachristi Leaf Meal To Natural Pasture Hay On Feed Intake, Body Weight Gain, Digestibility, And Carcass Characteristics Of Tigray Highland Sheep
133. Mulugeta Tesfaye (2019-09) Assessment Of Reproductive Management And Evaluation Of Bovipreg For Pregnancy Diagnosis Of Dairy Cattle In Sidama Zone Of Southern Ethiopia
134. Mesay Sawul Adem (2019-10) Eveluation Of Livestock Production System In Selected Distiricts Of Sidama Zone And Effect Of Supplementing Cereal Straw Based Feeds With Legume Forages And Haulms On The Growth Performance Of Arsi-Bale Sheep
135. Tamirat Wakayo (2019-11) Assessment Of Chicken Production Practice And Egg Quality Parameters In Arbegona Woreda, Sidama Zone, Snnpr, Ethiopia
136. Asfaw Choramo (2019-11) A E Ss M Tne Fo Smal Hl O Redl Dai Yr Prod Tcu I ,No Dorp U Tc Rp O Ec S Is Ng A Dn Dai Yr Cudorp Ts Ram K Nite G Etsys Ms Ni Loma D Si T ,Tcir Dawro Z ,Eno Nrehtuos An It O N Tan Ional Ti I Se P Dna E Po L Er E G Oi An Ts L A Hte ,Et I Po A
137. Lew Eladne K Bor Oma E (2019-11) E O Noita F Yh Eht G Cinei P Tcar I Sec , Ytilauq As Dna F Yte Of War Dna F Detnemre M Li K ,Aimoro ,Nwot Enemehsahs Ni E Oiht P A
138. Tulkisa Tumicha (2019-11) Assessment Of Artificial Insemination Efficiency And Reproductive Performance Of Dairy Cattle In And Around Bona Zuria District, Sidama Zone, Ethiopia
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