**The University of Jordan**

**Faculty of Agriculture**

**Department of Animal Production**

**Master Program: Animal Production**

**Production Systems of Small Ruminants (602789)**

|  |  |  |
| --- | --- | --- |
| **Credit hours** | **Level** | **Prerequisite** |
| 3 | Master |  |

**Course Description**

This course includes the basis of classifying the small ruminant production systems, types of production systems: pastoral, agro-pastoral and commercial, production systems of small ruminants in Middle East, main characteristics of flocks/herds (size, structure, productive performance), feeding calendar, spatial and temporal mobility of flocks/herds, marketing channels of animals and their products, constraints to production, opportunities for improving production, indigenous knowledge, questionnaire design and data analysis.

**Learning Objectives:**

1. Provide students with a background on the biotic and abiotic components of animal production systems.

2. Explain the principal basis for classifying the production systems of small ruminants.

3. Learn students about the importance of feeding calendar for highlighting the constraints to production and potential opportunities for improving production.

4. Highlight the possible sources for data collection related to technical and non-technical aspects of production and marketing.

5. Emphasize the importance of local knowledge in animal husbandry.

**Intended Learning Outcomes (ILOs):**

1. **Knowledge and Understanding**

**A1.** Student learns about the main components of the small ruminants production systems.

**A2.** Student knows to differentiate between the different production systems of small ruminants.

**A3.** Student comprehends the features (flocks, feeding calendar, mobility, marketing of animal products) of SR production systems.

**A4.** Student learns about the challenges facing the SR production systems in relation to climate change andmega-projects of animal production (commercialization).

**A5.** Student appreciates the local knowledge in animal husbandry especially that coping with drought.

1. **Intellectual and Cognitive Skills**

**B1.** Student has the ability to establish a connection between the available feed resources (feed calendar)and the current practices of small ruminants production.

**B2.** Student has the ability to collect secondary data on production systems of small ruminants from different sources (National, Regional and International institutions/organizations)

1. **Subject-Specific Skills**

**C1.** Student has the ability to design a questionnaire to study production systems of small ruminants.

**C2.** Student has the ability to analyze the collected data from surveys of animal production systems.

1. **Transferable Key Skills**

**D1.** Student has the ability to conduct a survey to characterize the production systems of small ruminants.

**D2.** Student has the ability to advicedecision-makersin relation to constraints and opportunities of current production systems of small ruminants in the country.

**ILOs: Learning and Evaluation Methods**

|  |  |  |
| --- | --- | --- |
| **ILOs** | **Learning Methods** | **Evaluation Methods** |
| A. Knowledge and Understanding (A1-A5) | **Learning Methods** | **Evaluation Methods** |
| B. Intellectual and Cognitive Skills (B1-B2) | Lectures, Discussions, Presentations | Exams and Participation |
| C. Subject-Specific Skills (C1-C2) | Lectures, Discussions, Presentations | Exams and Participation |
| D. Transferable Key Skills (D1-D2) | Lectures, Discussions, Presentations, Case Studies | Exams and Participation |

**Course Contents**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. of Lectures** | **Week** | **Topic** | **Selected Readings** | **ILOs** |
| **4** | **1-2** | **1. Bases for Classifying Production Systems** | Coop, 1982 | A1, A2, |
| **6** | **3-5** | **2. Production Systems:**  -Pastoral system  -Agro-pastoral system  -Commercial or feedlot system  -Proposed classification  -Production systems of small ruminants in Jordan | Abu-Zanat, 1995.  Al-Sharafat, 1996.  Juneidi & Abu-Zanat, 1993.  Migdady, 1999.  Nabulsi *et al*., 1992.  Swenne, 1995. | A2 |
| **2** | **6** | **3. Characteristics of Flocks/Herds**  -Size, structure and composition  -Productive performance | FAO, 1995  HCST, 1996 | A3, B1, B2 |
| **4** | **7-8** | **4. Feeding Calendar**  -Main feed resources  -Seasonal availability of feed resources  -Contribution of feed resources | Al-Sharafat, 1996.  Migdady, 1999. | A3, B1, B2 |
| **2** | **9** | **5. Mobility of Flocks/Herds**  -The concept of stations  -Triggering factors for mobility  -Importance of mobility | Al-Sharafat, 1996.  Migdady, 1999.  Bahhady, 1987. | A3, B1, B2 |
| **2** | **10** | **6. Marketing Channels**  -At village level  -Livestock markets | FAO, 1995 | A3, B1, B2 |
| **2** | **11** | **7. Constraints to Production**  -Technical  -Social  -Marketing outlets | Abu-Zanat, 1997  FAO, 1995 | A4, B1, B2, D2 |
| **2** | **12** | **8. Opportunities for Improving Production**  -Organizing pastoral communities  -Participatory approach | Abu-Zanat, 1997 | A4, B1, B2, D2 |
| **4** | **13-14** | **9. Questionnaire Design**  -Objectives  -Components  -Open ended versus closed questions  -Quantified data | Examples from local surveys | C1, C2, D1, D2 |
| **4** | **15-16** | **10. Analysis of collected data**  -Coding  -Simple statistics  -Results presentation | Examples from local surveys | D1, D2 |

### Evaluation Methods:

|  |  |
| --- | --- |
| **Evaluation** | **Points** |
| 1st Exam | 15 |
| 2nd Exam | 15 |
| 1st Term Paper/Presentation | 10 |
| 2nd Term Paper/Presentation | 10 |
| Case Study Presentation | 10 |
| Final Exam | 40 |
| **Total** | 100 |

**References**

Abu-Zanat, M. 1997. Livestock research priorities in Jordan. Global Agenda for Livestock Research, Proceedings of a consultation on setting livestock research priorities in West Asia and North Africa (WANA) Region. November 12-16, ICARDA, Aleppo, Syria.

Abu-Zanat, M. 1995. Production systems of small ruminants within the different agro-ecological zones of Jordan. ICARDA, Amman, Jordan.

Al-Sharafat, A. 1996. Sheep production systems in the northern Badia of Jordan. M.S. Thesis, The University of Jordan, Amman, Jordan.

Bahhady, F. 1987. Sheep husbandry practices in Syria and possibilities of improvement. FAO/Animal Production and Health Bulletin No. 54.

Coop, E. 1982. Sheep and goat production. Elsevier Scientific Publishing Company, Amsterdam, Netherlands.

FAO (Food and Agriculture Organization). 1995. Sustainable range-dependent small ruminant production systems in the Near East regions. FAO Regional Office for the Near East, Cairo, Egypt.

Juneidi, M. and Abu-Zanat, M. 1993. Low Rainfall Zone Sub-Sector Review for Jordan's Agricultural Sector Review and Policy Implementation Plan. Jordanian Ministry of Agriculture and USAID, Amman, Jordan.

Harb, M. 1994. Sheep production under extensive systems in the Near East, Jordan Pastoral System: A case Study, FAO, Rome, Italy.

HCST (The Higher Council for Science and Technology). 1996. Population and livestock related studies in the Eastern Badia of Jordan. Record of a workshop held under the auspices of The Jordan Badia Research and Development Programme, 22-23 September, held at the Royal Scientific Society, Jubaiha, Amman, Jordan.

Migdady, H. 1999. Sheep production systems in the middle Badia of Jordan. M.S. Thesis. The University of Jordan, Amman, Jordan.

Nabulsi, H. Ali, J. and Abu-Nahleh, M. 1992. Sheep and goats management systems in Jordan: Traditional and Feedlot: A case Study. ICARDA Office, Amman, Jordan.

Swenne, A. 1995. Livestock and rangeland management, Watershed Management Project. MoA/GTZ, Amman, Jordan.