

<p>章 节</p> <p>CHAPTER</p>	<p>第 6 章：放牧地利用（6 学时）</p> <p>Chapter 6. Grazing land utilization (6 hours)</p>
<p>教学目的与要求</p> <p>teaching objectives &amp; demand</p>	<p>使学生掌握在生产实践中如何更好地发挥放牧对草地的积极影响,尽可能地降低放牧对草地的消极影响,保证草地在发挥好生态功能的同时提高经济服务价值。掌握合理利用草地的基本指标体系,全面了解和认识不同放牧制度的优缺点,及划区轮牧的设计实施程序。</p> <p>Understanding of the positive role and negative effects of grazing on the grassland; Mastering the basic requirements for grazing of grass (stocking rates, grazing intensity, grazing period, grazing stubble height, grazing frequency); Understand the basic types and characteristics of the grazing system; Understanding of the implementation plan District rotational grazing advantages and significance mastered rotational grazing methods of design.</p>
<p>教学内容</p> <p>Contents</p>	<ul style="list-style-type: none"> <li>● Section 1 Definition and its significance of grazing;</li> <li>● Section 2 Effect of grazing to grassland. 放牧的意义,放牧对草地的影响(1 学时)</li> <li>● Section 3 Grazing Management Principles &amp; technique (放牧利用草地的要求,载畜量、放牧强度与监测、放牧时期、放牧空间分布等基本放牧管理控制指标体系。(3 学时))</li> <li>● Section 4 Grazing management system (放牧制度的基本类型及特点,划区轮牧的设计方法,放牧制度及其评价)。(2 学时)。</li> </ul>
<p>重点、难点</p> <p>The focus, difficulties</p>	<p>1、Definition and its significance of grazing;</p> <p>2、Effect of grazing to grassland. (重点)</p> <p>3、Grazing Management Principles &amp; technique (重点、难点)</p> <p>4、Grazing management system (重点、难点)</p>

教学过程

教学设计 Instruction design	调控对策 Regulation
<p>Chapter 6 grazing land utilization 第 6 章 放牧地利用</p> <p>Section 1. Definition and its significance of grazing (放牧概念与意义)</p> <p>定义: <b>Grazing:</b> <i>actions of herbivorous animals eating growing pasture or cereal crop. Mode of livestock production.</i></p> <p>放牧家畜与草地的关系 (图)</p> <p>livestock----grassland</p> <p><b>Significance of grazing:</b></p> <p><i>An worldwide important way of human food and fiber production; Low-cost, low-pollution grassland utilization; (附数据) Favor to animal health and livestock products safety; (Animal Welfare)</i></p> <p>Section 2. Effect of grazing to grassland (放牧对草地的影响)</p> <p><b><u>Positive impacts:</u></b></p> <p>1) <i>Stimulus grass tillering, keep grass vitality</i> 2) <i>A planned grazing way can control weeds</i> 3) <i>Manure plays the role of uniform fertilization</i> 4) <i>Livestock hooves trampling (Hoof farming)</i></p> <p><b><u>Negative impacts:</u></b></p> <p>1) <i>Affect production, breeding, grass community structure</i> 2) <i>Trampling on soil and plants;</i> 3) <i>Manure pollution affects feed foraging areas</i></p>	<p>复习 (5 min)</p> <p>第六章“草地退化”主因--放牧。</p> <p>➤引入第七章: 放牧管理与草地利用</p> <p>➤ 放牧的定义与草畜关系 (10 min)</p> <p>➤ 放牧的意义 (15 min)</p> <p>实例</p> <p>(35 min)</p> <p>➤ 放牧生理: 牧草生长积累与叶面积图;</p> <p>举例:</p> <p>图 (排泄粪、尿)</p> <p>图 (践踏)</p> <p>补: 国外文献</p>

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<p><u>Section 3. Grazing Management Principles &amp; technique</u> (放牧管理的理论与技术)</p> <p><b>Grazing Management Principles ---- 经济适合度与生态适合度的统一。maximum sustained yield</b></p> <p style="text-align: center;"><i>livestock production</i> 图讲解, PPT 动画顺序:</p> <p><i>You need to know:</i> ——本节讲授内容: 基本概念介绍:</p> <p><b><u>1、Carrying capacity, Stocking rate</u></b> <i>Forage-livestock balance</i></p> <p><b>Estimating the carrying capacity</b> ①area of grassland;②the livestock numbers; ③ grazing time。 日食量——“Animal unit”~~~sheep unit</p> $\text{carrying capacity} = \frac{\text{Available Forage}}{\text{Day Forage Requirement} \times \text{grazing Days}}$ <p><i>Example</i></p> <p><b><u>2、Grazing Intensity:</u></b> Monitoring Grazing Intensity:</p> <ul style="list-style-type: none"> <li>● Key species</li> <li>● Key area method</li> <li>● Stubble height</li> </ul>	<p>👉 引入放牧管理的基本原则 (5min)</p> <p>👉 图讲解 (10 min)</p> <p>👉 “草畜平衡”引入载畜量 图片一示例 (5 min)</p> <p>👉 载畜量估算 (20 min)</p> <p>👉 放牧强度与监测技术 (15min)</p>

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<p><b><u>3、Season of grazing</u></b></p> <p><i>predict <u>when</u> grass will grow; What do animals need &amp; when?</i> (图解)</p> <p><i>Season of Use</i></p> <p><i>Length of Grazing Season vs Growing Season</i></p> <p><i>Timing of Grazing</i> <i>例: Deferred grazing</i></p> <p><b><u>4. Distribution of grazing across landscape and matching with vegetation, topography and climate</u></b></p> <p><i><u>Area distribution</u>: Landscape, Patch, Feeding station</i> <i><u>Species selective grazing</u>: Plant part selective grazing, Live or dead</i> <i>Leaf of stem</i></p> <p><i>Area Selection; Distance from Water; Vegetation Type; Topography</i></p> <p><i><u>Improving Livestock Distribution</u></i></p> <ul style="list-style-type: none"> <li>✓ <i>Adjust kind/class of livestock , Provide supplemental feeds/mineral licks</i></li> <li>✓ <i>Fencing can be used to control (优、缺点)</i></li> </ul> <p><b><u>Grazing systems</u></b> <i>may improve livestock grazing distribution.</i></p>	<p>👉 放牧季 (15 min)</p> <p>举牧区实例</p> <p>👉 图讲解 (20 min)</p> <p>👉 实例说明</p> <p>引出“放牧制度”</p>

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<p><u>Section 4. Grazing (management) system</u></p> <p><b><u>1、 Definition of Grazing Systems</u></b></p> <p>(图)</p> <p><b><i>Grazing Systems Objectives :</i></b></p> <p><i>Vegetation considerations ; animal considerations ; economic considerations ; management considerations</i></p> <p><b><i>Designing Grazing Systems (图)</i></b></p> <p><b><u>2、 Types of Grazing Systems</u></b></p> <p><b><i>Continuous Grazing</i></b></p> <p><b><i>Rotational Grazing</i></b></p> <p><b><i>Strip Grazing</i></b></p> <p><b><i>Leader - Follower Grazing</i></b></p> <p><b><u>3. Rotational grazing</u></b></p> <p><b><i>Cell/Paddock Design</i></b></p> <p>(图片)</p> <p><b><i>Set Up Lanes</i></b></p> <p><b><i>Lay Out Paddocks</i></b></p> <p><b><i>Be Creative with Water and Fencing</i></b></p> <p><b><i>Example - Grazing System Design - Extensive</i></b></p> <p><b><i>Recommended Rotation</i></b></p> <p><b><u>Grazing schedules</u></b></p> <p><b>思考题/Assignments:</b></p>	<p>👉本章本课重点和难点</p> <p>概念、目的 (10 min) (图解)</p> <p>引入</p> <p>举牧区实例</p> <p>👉重点讲划区轮牧 (40min)</p> <p>👉实例说明</p> <p>👉复习总结、习题 (5min)</p>