

Instructional Scenario

Hay, Man



Course/Duty Area: Livestock Production Management / Using Plant Science In Livestock Production

Scenario: Tyler, a high school senior enrolled in an agricultural education program, is completing his Supervised Agricultural Experience (SAE) on a family-owned livestock farm in the Shenandoah Valley. The farm produces 300 acres of hay, 200 acres of corn and 300 acres of wheat, primarily used for feed. The operation maintains 250 head of purebred Angus beef cattle, focusing on cow-calf production. Tyler's supervisor has asked him to develop a detailed haying plan for the upcoming season, including scheduling first and second cuttings, estimating yields, and ensuring adequate forage storage to meet the herd's winter feeding requirements. The plan must also consider equipment availability, labor needs, and weather patterns typical for the region.

Big Question: What hay/forage crops and hay equipment will the farm need?

Focused Questions:

- Is Tyler qualified to manage hay operations for the farm? What qualifications are needed?
- What resources, organizations, and publications should Tyler consult?
- What type of hay equipment should Tyler select for this operation?
- What is the cost of this project?

Project-Based Assessment: Put students in groups of two to four and have them create a forage management plan for the farmer in this situation. The students can draw the farm to scale on a poster board. Management plans should include the following:

- **Forage and Crop Management**
 - What are the typical dates for first and second hay cuttings in the Shenandoah Valley?
 - What is the expected yield per acre for hay on this farm based on past seasons?
 - How does soil fertility or field condition affect yield estimates for this year?
 - Are there any fields that require reseeding or special treatment before cutting?
- **Livestock Feeding Requirements**
 - How much hay will 250 head of Angus cattle require for winter feeding?
 - What is the average daily dry matter intake per cow during winter months?
- **Equipment and Labor**
 - Which haying equipment is available, and what is its capacity (e.g., baler size, mower width)?
 - Are there any maintenance issues or repairs needed before the season starts?
 - How many workers will be available during haying, and what is their level of experience?
- **Storage and Logistics**
 - What is the current storage capacity for hay on the farm?
 - Will additional storage (e.g., barn space or tarps) be needed for second cutting?
 - How will hay be transported from the fields to storage?
- **Weather and Timing**
 - What are the typical rainfall patterns during the haying season in this region?
 - How many consecutive dry days are usually needed for proper curing?
 - What contingency plans exist for unexpected weather delays?
- **Budget and Cost Considerations**
 - What is the estimated cost for fuel, labor, and equipment operation during haying?
 - Are there funds available for renting additional equipment if needed?

Student Resources should include the following:

- Local and State Agricultural Resources
 - Virginia Cooperative Extension—Offers region-specific guidance on hay production, forage management, and weather trends.
 - Virginia Department of Agriculture and Consumer Services (VDACS)—Provides crop reports, market trends, and best practices for livestock feeding.
- Industry and Educational Tools
 - National FFA Organization Resources—SAE record books, planning templates, and agricultural management guides.
 - Agricultural Education Textbooks and Curriculum—For haying schedules, forage calculations, and equipment operation.
- Digital Tools and Apps
 - Hay Production Calculators—Online tools for estimating yield, storage needs, and feed requirements.
 - Weather Apps (e.g., National Oceanic and Atmospheric Administration [NOAA], Weather Underground)—For monitoring regional weather patterns and planning cutting days.
 - Farm Management Software (e.g., Ag Leader, FarmLogs)—Helps track field conditions, equipment scheduling, and labor allocation.
- Local Expertise
 - Farm Supervisor or Family Members—Experienced farmers can provide insight on timing and best practices.
 - Neighboring Farmers—Often share equipment availability and labor during peak haying season.
 - Local Equipment Dealers—For maintenance advice and rental options.
- Research and Publications
 - University Extension Publications—Virginia Tech and other land-grant universities publish haying guides and forage management bulletins.
 - Beef Cattle Nutrition Guides—To calculate winter feed requirements accurately.

Teacher Resource: [Crop and Forage Weed Management](#), Virginia Tech

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