Species – Horse
Module – Feedstuffs Identification

**Learning Objectives**

**Beginner**
- Explain the differences between forages and concentrates.
- Identify two forages, one mineral source, and three concentrates.

**Intermediate**
- Identify four forages, six concentrates and two mineral sources.
- Identify processed feeds (i.e., dehydrated, ground, cracked, rolled, etc.) and explain the purpose of the process.

**Seniors**
- Identify all horse feeds in the Kit Feed Box and forages on the Horse Discovery CD.
- Describe how horse feeds are processed.
- Identify feedstuffs present in a sample of mixed horse feed.

**Learning Activities**

<table>
<thead>
<tr>
<th>Age Level</th>
<th>Learning Activities</th>
<th>Materials Needed</th>
<th>Source</th>
</tr>
</thead>
</table>
| Beginner  | • Identify samples of two forages, three concentrates, and one mineral source. | • Feed samples  
• Horse Discovery CD (forages) | KHVCR kit  
KHVCR Manual |
|           | • Complete Word Scramble | • Horse Feedstuff Word Scramble | KHVCR Manual |
|           | • Define Forages vs. Concentrates | • Forage vs. Concentrates demonstration activity | KHVCR Manual |
|           | • Complete a word search puzzle of feed names. | • Word Search Puzzle | KHVCR Manual |
|           | • Visual review and quiz using Horse Discovery CD and feeds. | • Feed samples  
• Horse Discovery CD  
• Pencils and paper | KHVCR kit  
KHVCR Manual |

**Targeting Life Skills**

**Beginner**
- Critical thinking
- Learning to Learn

**Intermediate**
- Critical Thinking
- Decision making

**Senior**
- Critical Thinking
- Communication
- Service learning
- Leadership
<table>
<thead>
<tr>
<th>Age Level</th>
<th>Learning Activities</th>
<th>Materials Needed</th>
<th>Source</th>
</tr>
</thead>
</table>
| Intermediate | • Identify samples of four forages, six concentrates, and two mineral sources.  
• Complete Word Scramble.  
• Gather several feed tags from your local Horse Feed dealer and discuss the feedstuffs present in the horse’s feed.  
• Visual review and quiz using Horse Discovery CD. | • Feed samples  
• Horse Discovery CD (forages)  
• Horse Feedstuff Word Scramble  
• Feed tags  
• Feed samples  
• Horse Discovery CD  
• Pencils and paper | KHVCR kit  
KHVCR Manual |
| Senior | • Identify all horse feeds in Kit Feed Box and forages on Horse Discovery CD.  
• Complete Word Scramble.  
• Conduct an internet search and create an explanatory visual display for young members on the various types of feed processing and the goal of each.  
• Give an oral report on the feeds you are using at home and why you are using them.  
• Bring a sample of a mixed horse feed and feed tag; identify each feedstuff.  
• Utilize feeds kit to teach Beginners and intermediates feeds ID. | • Feed samples  
• Horse Discovery CD (forages)  
• Horse Feedstuff Word Scramble  
• Internet  
• Feed samples and ID tags  
• Feed samples & ID tags  
• Pencils and paper | KHVCR kit  
KHVCR Manual  
Internet  
KHVCR kit |

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Kentucky 4-H Horse Volunteer Certification Resource Manual
**Time Requirement**
- Each activity should be completed in 60 minutes or less

**Best Time to Teach**
- First in the "Nutrition" series of lessons.

**Best Location**
- Classroom

**Evaluation**

**Beginners**
- Score identification of feed samples.
- Score word scramble.
- Score word search puzzle.
- Score Horse Discovery CD quiz.

**Intermediate**
- Score identification of feed samples.
- Score word scramble.
- Score Horse Discovery CD quiz.

**Senior**
- Score identification of feed samples.
- Score word scramble.
- Score Horse Discovery CD quiz.

**References**
- Horse Resource Handbook (KHVCR)
- KHVCR Kit
- Horse Discovery CD
- Livestock Feedstuffs Kit (KHVCR kit)
- Internet resources

**Kentucky Core Content**
1.1, 1.2, 1.3, 1.4, 1.5 - 1.9, 2.2, 2.3, 2.7, 2.8, 2.10, 2.15, 5.1, 5.3, 5.4, 5.5, 6.1
# Horse Feeds in KHVCR Kit

The KLVCR kit contains 30 labeled bottles of commonly-used livestock and horse feeds. Only the feeds listed below will be discussed during all Horse Nutrition modules. These feeds are listed along with processing that has been done with that feed.

<table>
<thead>
<tr>
<th>Feed</th>
<th>Processing Procedure</th>
<th>Purpose of Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley (whole)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cracked Shelled corn</td>
<td>Shelled, cracked (dry rolled)</td>
<td>Increase digestibility</td>
</tr>
<tr>
<td>Crimped Oats</td>
<td>Crimped (steam rolled)</td>
<td>Increase digestibility</td>
</tr>
<tr>
<td>Dicalcium Phosphate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dried Beet Pulp</td>
<td>Dried by-product of sugar production</td>
<td>Ease of handling</td>
</tr>
<tr>
<td>Ground limestone</td>
<td>Ground (powdered)</td>
<td>Improve mixing qualities</td>
</tr>
<tr>
<td>Ground shelled corn</td>
<td>Shelled, ground (dry rolled)</td>
<td>Increase digestibility</td>
</tr>
<tr>
<td>Liquid molasses</td>
<td>By-product of sugar production</td>
<td></td>
</tr>
<tr>
<td>Oats (whole)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shelled (whole kernel) corn</td>
<td>Shelled (removed from cob)</td>
<td>Increase nutrient concentration</td>
</tr>
<tr>
<td>Soybean meal</td>
<td>By-product of oil extraction</td>
<td></td>
</tr>
<tr>
<td>Steam rolled oats</td>
<td>Steam rolled</td>
<td>Increase digestibility</td>
</tr>
<tr>
<td>Trace mineralized salt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetable Oil</td>
<td>Oil extracted from plant seeds</td>
<td>Increase nutrient concentration</td>
</tr>
<tr>
<td>Vitamin supplement</td>
<td>Mixed with filler/extender</td>
<td>Improve mixing qualities</td>
</tr>
<tr>
<td>Wheat (whole)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheat middlings</td>
<td>By-product of flour milling</td>
<td></td>
</tr>
<tr>
<td>White salt</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Caution: Volunteer Leaders please note:** The vitamin supplement included in this kit is just one form of many in which vitamins can appear. Vitamin supplements consist of primarily carrier materials and those are frequently chosen because they are locally inexpensive and easy to acquire.
### KHVCR Kit Horse Feeds Labels

<table>
<thead>
<tr>
<th>Barley</th>
<th>Cracked Shelled Corn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crimped Oats</td>
<td>Dicalcium Phosphate</td>
</tr>
<tr>
<td>Dried Beet Pulp</td>
<td>Ground Limestone</td>
</tr>
<tr>
<td>Ground Shelled Corn</td>
<td>Liquid Molasses</td>
</tr>
<tr>
<td>Oats (whole)</td>
<td>Shelled Corn</td>
</tr>
<tr>
<td>Soybean Meal</td>
<td>Steam Rolled Oats</td>
</tr>
<tr>
<td>KHVCR Kit Horse Feeds Labels</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td>Trace Mineralized Salt</td>
<td>Vegetable Oil</td>
</tr>
<tr>
<td>Vitamin Supplement</td>
<td>Wheat Middlings</td>
</tr>
<tr>
<td>Wheat (whole)</td>
<td>White salt</td>
</tr>
</tbody>
</table>
Horse Feedstuff Word Scramble
Beginner Activity

Please unscramble the words below

1. krcaccdroen ____________________________________________

2. laeshiwt _____________________________________________

3. eneymaoalbs __________________________________________

4. tohleoswa _____________________________________________

5. fallfaa _______________________________________________

6. ityhotm ______________________________________________
**Horse Feedstuff Word Scramble**  
**Beginner Activity**  
*Answer Key*

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>krcaccdroen</td>
<td>Cracked corn</td>
</tr>
<tr>
<td>2.</td>
<td>laeshiwt</td>
<td>White salt</td>
</tr>
<tr>
<td>3.</td>
<td>eneymaoalbs</td>
<td>Soybean meal</td>
</tr>
<tr>
<td>4.</td>
<td>tohleoswa</td>
<td>Whole oats</td>
</tr>
<tr>
<td>5.</td>
<td>fallfaa</td>
<td>Alfalfa</td>
</tr>
<tr>
<td>6.</td>
<td>ityhotm</td>
<td>Timothy</td>
</tr>
</tbody>
</table>
Horse Feedstuff Word Scramble
Intermediate Activity

Please unscramble the words below

<table>
<thead>
<tr>
<th>Number</th>
<th>Scrambled Word</th>
<th>Unscrambled Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>uFeaTcelsl</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>erCRdevol</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>acaOrsrhsgdr</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>sBureaslg</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>lBetPeup</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>tsareCmdpOi</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>aeldniiWMhdsgt</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>aCdrorkcneC</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>eobMleSayan</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>IraBye</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>monetstL</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>hStteWila</td>
<td></td>
</tr>
</tbody>
</table>
Horse Feedstuff Word Scramble
Intermediate Activity
Answer Key

Please unscramble the words below

1. uFeaTcelsl — Tall Fescue
2. erCRdevol — Red Clover
3. acaOrsrhsgr — Orchardgrass
4. sBureaslge — Bluegrass
5. lBetPeup — Beet Pulp
6. tsareCmdpOi — Crimped Oats
7. aeldniiWMhdsgr — Wheat Middlings
8. aCdrorkcneC — Cracked Corn
9. eobMleSayan — Soybean Meal
10. lraBye — Barley
11. monetsieL — Limestone
12. hStteWila — White Salt
Horse Feedstuff Word Scramble – Senior Activity

Please unscramble the words below

1. llaffaA
2. FseullTae
3. msniVita
4. sgsaRrye
5. rvlRdoeeC
6. raOdssacgrhr
7. otevClhireW
8. rarMscealTien
9. IuBsgesra
10. BePultpe
11. timdrasOCep
12. WdMghendistial
13. pusPhmhtlaoeDacii
14. Moeassls
15. kaorcncEcdr
16. ynMSaolbeeaa
17. VOgabletleei
18. lyBaer
19. oitemensL
20. IaSteihWt
### Horse Feedstuff Word Scramble – Senior Activity

**Answer Key**

Please unscramble the words below

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IlaffaA</td>
<td>Alfalfa</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>msnivita</td>
<td>Vitamins</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>rvlRdoeeC</td>
<td>Red Clover</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>otevClhireW</td>
<td>White Clover</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>luBsgesra</td>
<td>Bluegrass</td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td>timdrasOCep</td>
<td>Crimped Oats</td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td>pusPhmhtlaoeCiaci</td>
<td>Dicalcium Phosphate</td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td>kaorcnCeCdr</td>
<td>Cracked Corn</td>
<td>16</td>
</tr>
<tr>
<td>17</td>
<td>VOgabledleei</td>
<td>Vegetable Oil</td>
<td>18</td>
</tr>
<tr>
<td>19</td>
<td>oitemensL</td>
<td>Limestone</td>
<td>20</td>
</tr>
</tbody>
</table>
Forages vs. Concentrates
Beginner Demonstration Activity

The purpose of this demonstration is to illustrate how forages differ from concentrates and why we use these two types of feeds with hindgut fermenters.

Forages are feeds that are higher in fiber, lower in digestible nutrients, and lower in energy compared to concentrates. They include hay, straw, pasture, and high fiber by-products. Concentrates are feeds that are higher in one or more nutrient (that is, nutrients are “concentrated”) compared to forages. They include all grain feeds, protein supplements, vitamin and mineral supplements, fats, sugar sources, etc.

What are the human equivalents of forages? They are those foods that meet the definition above, so think high fiber. What are the human equivalents of concentrates? Think high energy or fat items.

Materials needed: Variety of “forage” foods for humans, examples:
- Lettuce
- Any bran products (wheat, oat, rye)
- Celery
- Whole grains
- Shredded wheat
- Granola
- Popcorn
- Broccoli

Variety of “concentrate” foods for humans, examples:
- Any meat products
- Any dairy products (cheese, yogurt, milk, etc.)
- Peanut butter
- Any soy-based product (tofu, soymilk, soybars, etc.)
- Eggs
- Nuts
- Vitamin tablets

KLVCR Feed kit (horse feeds only)
- Pencils and paper
- Paper plates

Place your variety of human foods on plates and spread them across one table (label if necessary). Spread your horse feeds across another table with labels (next page) cut out and near each bottle.

The objective is to group the “forages” and the “concentrates” in both the human foods and the horse feeds. A demonstrator can do this as a group by calling out instructions or the youth can do it themselves. To make it competitive, let teams take turns grouping the items under a time limit and score their efforts.
Feed Names Word Search Puzzle - Beginners

BARLEY  WHEAT  OATS  CORN  SOYBEAN
MOLASSES  OIL  MINERALS  VITAMINS  SALT
Feed Names Word Search Puzzle - Beginners

Answer Key

H O H M I N E R A L S H N Z L
A B U B W Q S V X G K W T V Y
H J S L Q F O E S J T W H E R
C B K A E G N O S L Y H T E M
O Q F I T F Y F Q S E J J B K
Q L X D A B N B L C A M S R E
Y N J I E O O V R W C L E K J
D A L A H A Z X V B R B O U W
O D N V W Y V S S N L C C M I
V I D P F N L M A I K R O B K
M J L T S N B X L M G H E A B
L S N E B X R W T A I C W R N
P L J N L E S O M T G X Z L O
B H F L I T K D C I A Q T E V
I N C P O A T S Z V Y Z Y Y R

BARLEY  WHEAT  OATS  CORN  SOYBEAN
MOLASSES  OIL  MINERALS  VITAMINS  SALT