

**Feed & Forage Testing** – \$22 per sample for NIR + nitrate  
\$42 per sample for NIR + nitrate + minerals

AESL recommends the following when taking feed and forage samples:

### *Baled Hay*

Baled hay packages are not uniform products because the initial windrows were not uniform and the baling process affects the distribution of leaves and stems (bale structure) within the bale. Based on the structure of the hay package to be sampled, the hay should be probed in such a way as to adequately sample the various concentrations of stems and leaves. At least 20 cores (one core per bale) should be taken, combined, and mixed well to develop one sample per lot. Bales within a lot of hay should be sampled at random. Random means that there should be no pre-chosen reason for selecting a specific bale to sample (i.e., location, color, leafiness, etc.). Techniques to guard against non-random sampling are to sample every fourth or fifth bale going around the stack, truck, or down the row in the field or take at least five random samples from each of the four sides of a stack.

Sample rectangular bales, regardless of size, using a probe centered in the end of a bale and drill horizontally into the bale.

Sample round bales by drilling horizontally into the curved side of the bale. Deteriorated hay from the exterior of the bale should not be sampled if it will not be fed to animals or they can be selective in their feeding. However, if hay to be sold includes the deteriorated exterior, it should be included in the sampling. Bales stored outside should be sampled within 2 to 4 weeks of feeding so that continued deterioration does not significantly lower bale quality from the sample taken for analysis.

### *Stacked Hay*

For loose hay use a probe at least 30 inches long with 3/4 inch or larger internal diameter and drill at an angle from the side of the stack to the probe's full depth in 20 random locations throughout the stack. In a mow, hold the probe vertically and drill at the spot where the hay is compressed by the weight of the operator. Discard any weather damaged surface layer that would not be included in the part being fed or sold. Hay stored outside should be sampled within 2 to 4 weeks of feeding so that continued deterioration does not significantly lower bale quality from the sample taken for analysis.

### *Cubes and Pellets*

Hay cubes or pellets should be sampled by collecting several hay cubes or handfuls of pellets from 15 to 20 locations in each "lot" so that a minimum of 40 cubes or 2 lb of pellets are selected. Each lot should be limited to 200 tons or less.

### *Silage*

Collect a 1- to 2-lb sample from the silo unloader while it is operating or a comparable amount from several sites in a bunker or silo tube. Do not collect a silage sample until at least two weeks after ensiling. Do not collect a silage sample from the top 2 to 3 feet in a top-loading upright silo. Avoid sampling from moldy or spoiled areas in silo, bunker or tube. Also, avoid sampling silage that has been exposed to the air for several hr. Sample bunker silos by sampling 12 to 15 sites from the face of the silage in the silo.

Sampling chopped forage as it is being put into the silo will give an indication of forage quality but will not account for changes occurring during the ensiling process. Fiber changes are usually less than 1 unit and occur primarily because digestible material is lost through respiration or juices leaching out. Protein content and solubility can change significantly during the ensiling process depending on the fermentation process.

### *Mixed Rations*

Total Mixed Rations (TMR). Total mixed rations are difficult to sample because they are seldom homogeneous or well mixed. When it is unlikely that a sampling method can produce a representative sample, it is recommended that the components of total mixed rations be sampled and analyzed individually. When confident that a representative sample can be obtained, a TMR sample may be analyzed by wet chemistry. NIR calibration on TMR samples has not been successful.