
Judging Crop Samples

We grow crops for several purposes:

- as seed for next year's crop
- as feed for livestock
- to process as food

The suitability of crops for each type of usage depends upon several factors. By judging crop samples, you can learn to identify major differences in crop type and to recognize high quality products.

When judging seed samples, keep in mind what the seed is used for: to produce a vigorous, even stand of plants which will give a high yield of good quality crop. If seed is to grow properly, it must be uniform, fully mature and free of damage from weather, insects, diseases or machinery.

Maturity

- Mature kernels are plump and of normal colour.
- Green or shriveled seed shows that the crop was not mature when harvested.
- Moisture content should allow for safe storage.

Machinery damage

- Shows up as cracked or broken kernels.
- Over-drying will turn grain from yellow to dark brown.

Weather damage

- Reduces the length of time needed for the germination of the seed.
- Sprouted kernels and bleached seed indicates damage.

Insect damage

- Can be identified by holes in the seed and by the presence of flour-like material in the sample.

Disease

- Signs include mouldy seeds, discoloured seeds and the presence of sooty looking spores (black spots) on the seed.

Impurities

- Reduce the amount of good seed in the sample and cause difficulties in seeding.
- Includes: seeds from other crops, straw, chaff, mud, weeds or other foreign materials.

Source: 4-H Ontario Judging Tool Kit

Judging Hay and Haylage

	Perfect Score	
	Hay	Haylage
Maturity	40	30
<ul style="list-style-type: none"> • hay should be cut when legumes are in first flower and grasses are in boot stage (heads just emerging) • late cut hay is low in field value • early cut hay will produce low yields but be tasty 		
Colour, Odour And Disease	20	35
<ul style="list-style-type: none"> • should retain a green colour • hay should have a fresh smell • haylage should have a sharp, sweet smell • musty, burnt or rotten smells indicate poor quality hay or haylage • discolouration is undesirable 		
Leaf To Stem Ratio	20	0
<ul style="list-style-type: none"> • much of the feed value is in the leaves • good quality hay will retain most of its leaves 		
Moisture and Condition	0	15
<ul style="list-style-type: none"> • moisture content should be 55-65% • you should not be able to squeeze out water • very wet samples may rot in silo • should be free from mould or slime • if too dry, haylage will lose nutrients and taste 		
Legume-grass Balance.....	15	10
<ul style="list-style-type: none"> • legumes are higher in protein than grasses of similar maturity • for hay: over 75% legumes is excellent • for haylage: over 50% legumes is best 		
Purity	5	10
<ul style="list-style-type: none"> • foreign materials such as weeds or straw indicate a low feed value 		
Total	100	100

Source: 4-H Ontario Judging Tool Kit

Judging Silage

Stage of Maturity

- Cereal silage – harvested at or before mid-dough stage at 60-65% moisture
- Field peas – harvested between flat pod and full pod and wilted to 55 – 65% moisture
- Legumes – harvested at pre-bloom stage – 40 –50% leaves, less than 5% foreign material at 60% moisture
- Legume/grass mix – legumes harvested at early bloom with 35-45% leaves, more than 50% leaves in grasses, less than 5-10% foreign material at 60% moisture

Grain content

- Grain content determines nutritional value
- As much grain as possible is desirable
- Grain formation reduces moisture content of plant

Colour

- Bright, light green yellow or green brown depending upon material ensiled
- Discolouration indicates loss of feed value from heating or rotting
- Dark brown or black colour indicates heating

Odour/Smell

- Lactic acid (sour milk) odour
- Strong butyric acid (rancid butter or fat, putrid) smell indicates sign of severe spoilage
- Tobacco smell - indicates high temperatures during fermentation
- Acetic smell – vinegar smell, result of poor fermentation
- Propionic smell – sharp, sting the nose, smell is a result of poor fermentation

Texture

- Firm with softer material not easily rubbed from fibre

Impurities

- Weeds lower the feeding value of silage.

Source: Silage Manual – Alberta Agriculture, Food & Rural Development – Agdex 120/52-2