

Fibre

Created for Canadian Pony Club Education

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Fibre

- Fibre is comprised of three things:
- Cellulose
- Hemicellulose
 - The above are both polysaccharide molecules
 - When the beta bonds holding the polysaccharides molecules are broken they are converted to volatile fatty acids (FVAs)
- Lignin
 - 100% indigestible by both horse and bacteria

Seed hay



Soluble and Insoluble Fibre

- Insoluble fibre
 - The non-seed and non-fruit portion, leaves, stems, and hulls
 - The earlier bacteria break the beta bonds, so the more can be utilized
 - Undigested insoluble fibre maintains gut motility and prevents the quick consumption of carbohydrates
- Soluble fibre
 - The liquid portion
 - Resin, sap, pectin and mucilages
 - Use nearly 100%

Timothy



Quality of Fibre

- Crude Fibre (CF value seen on feed bag labels)
 - Estimate of total fibre in feed
- Neutral Detergent Fibre (NDF)
 - Removes starches from equation and most of hemicellulose
 - Measures cellulose and lignin

Fescue



Why is fibre necessary?

- Fibre is extremely important both to the digestive system and for its nutritional contribution
- Fibre promotes peristalsis, the muscular contractions of the digestive system that help to move digesta through the system
 - Fibre helps fill the GI tract, thereby improving and maintain gut health
- Fibre can absorb water, helping to bring more moisture into the system
- Fibre can form a mat that floats on top of the digesta in the stomach, acting as a physical buffer between the lower, acidic level of the stomach and the upper non-mucosal level
- Fibre is digested in the large intestine, where it:
 - Provides a slow release energy
 - Provides the horse with heat

Hay in wind rows



Sources of fibre

- Fibre comes from many sources
- We typically think of hay as being the horse's source of fibre
- Seed hays and alfalfa hays are the primary sources of fibre in a horse's diet
- Grass is another important source of fibre for horses lucky enough to be on pasture
- Horses can also get fibre from other sources
 - Bran
 - Beet pulp
 - This is considered a 'super fibre'

Alfalfa



Questions

- 1. What is fibre comprised of?
- 2. Compare and contrast soluble and insoluble fibre.
- 3. What are sources of fibre?
- 4. What is the purpose of fibre?
- 5. What is crude fibre?