

Wheat

- For beef cattle:
 - In moderate to high grain rations (50% or more concentrate),
 - wheat should be fed in combination with more fibrous or slowly fermented feed grains and limited to 40% of diet.

For sheep:

- up to 25% for lambs and 35% for ewes.

Poultry

- energy source due to high starch content.
- palatable if not ground too finely
- used efficiently in all classes of poultry.

- conventional broiler and laying hen diets
 - 60% wheat or more
- Lower (50%) for chicks

Poultry

- Replacing maize with wheat in broiler and layer diets
 - Reduction in the xanthophyll content of the diet,
 - less pigmentation of the broiler skin and egg yolk:
 - supplementary sources of xanthophylls necessary for the market

Horses

- useful energy grain for horses,
- Larger amounts
 - cause colic and digestive upsets
 - if not chewed efficiently,
 - large amounts of starch passing into the hindgut,
 - causing hindgut acidosis with digestive disturbances,
 - hyperactive behaviour and
 - a high risk of laminitis.

Maize grain (Zea mays, corn, misir)

- major feed grain
- used as a source of energy.

- Many by-products of maize processing
- flour (hominy feed, bran, germs, oil meal),
- starch (corn gluten feed, corn gluten meal)
- alcohol/biofuel industries (distillers' dried grains and solubles)

Maize

- Palatable, suitable for all livestock.
 - DM: 88-90%
 - CP: 8%
 - Proteins are mainly zein and glutelin,
 - situated in the endosperm and germ respectively.
- Zein, is deficient in lysine and tryptophan

Maize varieties such as Opaque-2 or Flour-2
better amino acid profile

Maize

EE: 4%(3-6%)

Rich in polyunsaturated fatty acids, especially in linoleic acid

- CF: 2% Digestibility is high
- low fibre content (10% NDF)
- Crude ash: 2%
- Calcium ↓↓
- 75% of phosphorus as phytate
- niacine ↓↓
- Yellow maize
 - vitamin A content (caroten and xsantofil)↑↑

- high starch content (about 65%),
- Maize starch is less readily fermentable than other cereal starches (30% escapes rumen fermentation).
- ME: 3300-3400 kcal/kg

Ruminants

- Maize grain is a valuable energy source in ruminants.
- In dairy cows, high milk yields because of its high starch content.
- a slowly degrading starch in the rumen, maize grain has a low acidogenic value and provides by-pass starch, allowing glucose absorption in the small intestine.

Poultry

- highly digestible starch,
- low fibre
- relatively high oil content,
 - resulting in high metabolizable energy values.
- good source of polyunsaturated fatty acids (linoleic acid).
- Upto 60% in diets