Barley (Arpa)

- Moisture: 12-14%

- processes

rolling (dry or steam rolling), flaking, grinding, and pelleting.

- CP: 11-12%
- EE: 2%
- CF: 4-6%
- Higher fibre content than wheat and maize
- ADF:5-7%
- NDF: 18-24%
- Ash: 2%
- Starch: 60% (55-63%)

- Barley contains pentosans (ß-glucans)
  - sticky droppings in poultry,
  - poor performance
  - ß-glucanase supplementation

Ruminants

- Barley grain is one of the most common grains used in diets for dairy and beef cattle.
- high energy digestibility (80%),
- high metabolisable energy value for ruminants (about 12.4 MJ/kg DM).
- high content of rapidly degradable starch (nearly 50% of the DM),

Poultry

- soluble polysaccharides (ß-glucans)
- Sticky droppings
- wet litter
- reduce nutrient digestibility
- increase viscosity of digestive contents
- Increased percentages of dirty eggs

Oat (Avena sativa, Yulaf)

- DM: 88-90%
- CP: 11-12% (lysine ↑)
- EE: 4-6% (unsaturated fatty acids ↑)
- CF: 11% (ADF: 16%)
- 20-30% husk, therefore digestibility is lower than other cereal grains
- Starch: 40%

- Pozitive effects on milk yield and milk fat due to having unsaturated fatty acids

- Cause soft butterfat when given in excess amount
- vitamin A, vitamin D, niacine ↓↓

- Oat is a valuable food for ruminant and horses
- Limited in poultry diets due to its arabinoxylan content
- Calf and dairy cattle 20%
- Beef cattle 30-40%
- Effective in prevention of cannibalismus in poultry

Rye (Secale cereale, çavdar)

- DM:88-90%
- CP:12%
- EE:2%
- CF:2%

- less palatable
- high amounts of soluble arabinoxylans and β-glucans,
- increase viscosity in the gut in monogastrics,
- Decrease the activity of digestive enzymes and nutrient bioavailability in pigs and poultry
- sticky droppings.