ALCOHOL DISTILLERS BYPRODUCTS

- For this purpose generally cereal grains rich in starch such as barley, wheat and corn
- Obtained products:
- 1. Damıtma posası (Distillers grain, DG)
- 2. Damıtma çözünürleri (Distillers solubles, DS)
- 3. Kurutulmuş damıtma çözünürlü posa (Dried distillers grains with solubles, DDGS)

Corn DDGS

- Nutrients are 2.5-3 times more than that of grains
- CP 30% (RUP: 55% of CP)
- EE 9%
- CF 9%
- Crude ash 4% available P ↑
- ME 2800 kcal/kg for poultry
- ME 3050 kcal/kg for ruminant
- Starch 2%

- DDGS

- 20-25% for ruminant concentrates
- 10% for poultry
- (wet litter problem due to hig Na content)

BAKERS YEAST INUSTRY BY PRODUCTS

Bakers yeast (*Saccharomyces cerevisiae*)

Carbon source: molasses

Nitrogen source: amonyum, amonyum salts

Phosphorus salts

- Yeast (wet, dry)
- Inactive yeast
- Active yeast
- Yeast culture
- Yeast cell wall

- Bakers yeast: DM: 90%, CP: 46%
- Condanse solubles, vinasses, obtained after yeast removal
- Molasses as raw material
- Called as molasses solubles
- molasses 50-55% sugar
- Vinasses 3-5% (in DM)
- Potassium content is reduced to below 3% then it can be used in ruminant diets

- Molasses solubles (vinasses, condanse molasses solubles)
- Diluted molasses solubles: DM : 5-15%
- Condansed 60-70% DM
- CP: 30% Crude ash: 24-30% K.11-16%
- Most of the nitrogen (9-41%) betain

CONDANSED MOLASSES SOLUBLES

- Upto 5% for ruminant concentrates
- If K content is lowered to below 3%

- DM 70%
- CP 45%
- Crude ash: 9%

- Especially add molasses solubles to low-medium quality roughages
- Important role for increasing RDP

OIL INDUSTRY BYPRODUCTS

- After extraction of oil from oily seeds
  - Products rich in protein
  - meal
- **Oil is manufactured from oily seeds**
- 1.Hydrolic pres procedure
- 2.Continuous pres procedure (expeller)
- 3.Solvent extraction procedure
  - Direct solvent extraction procedure
  - Pre-pres solvent extraction procedure

solvent

- hexane
- benzene
- trichloroethylene
- carbonsulphur
- aceton

- trichloroethylene
  - İnternal bleeds in animals