

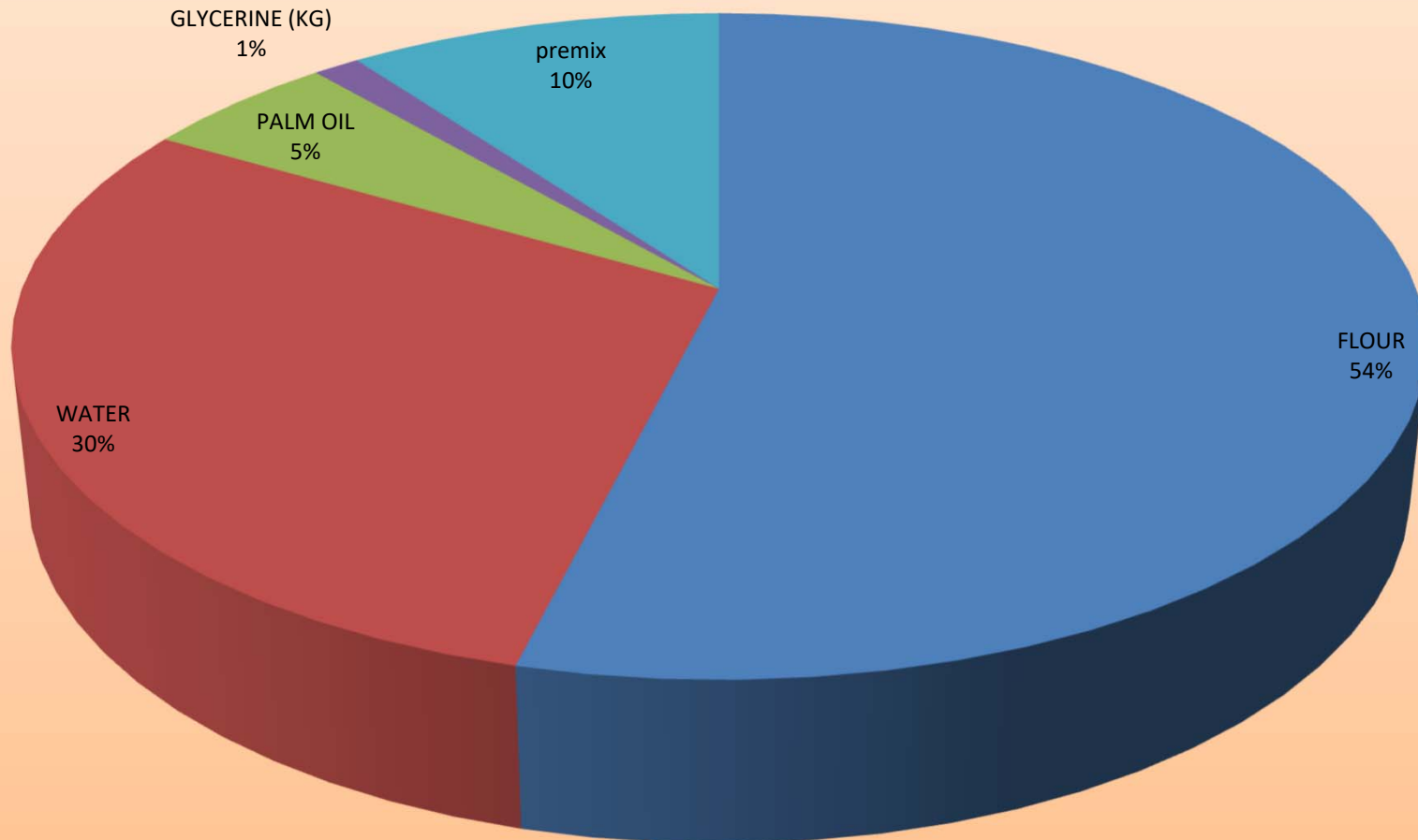


# Flour Issues That Appear During Production & How to Prevent Them

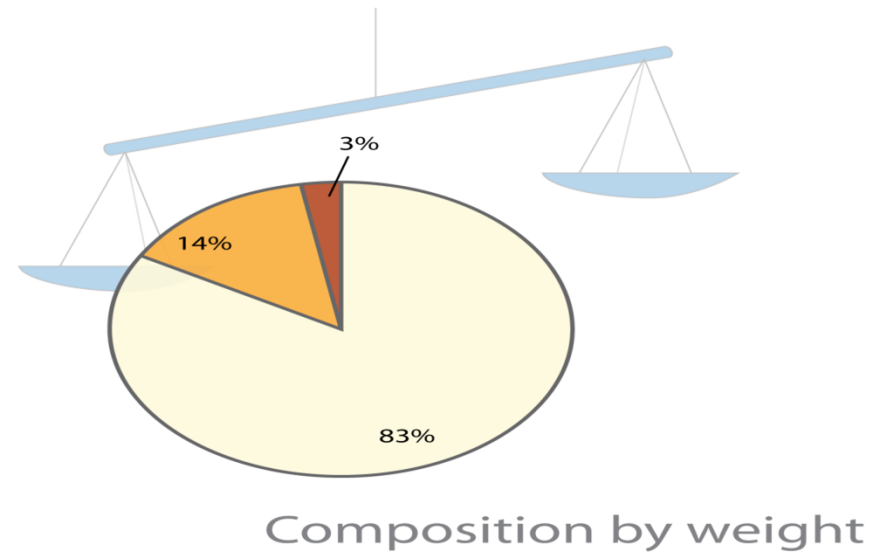
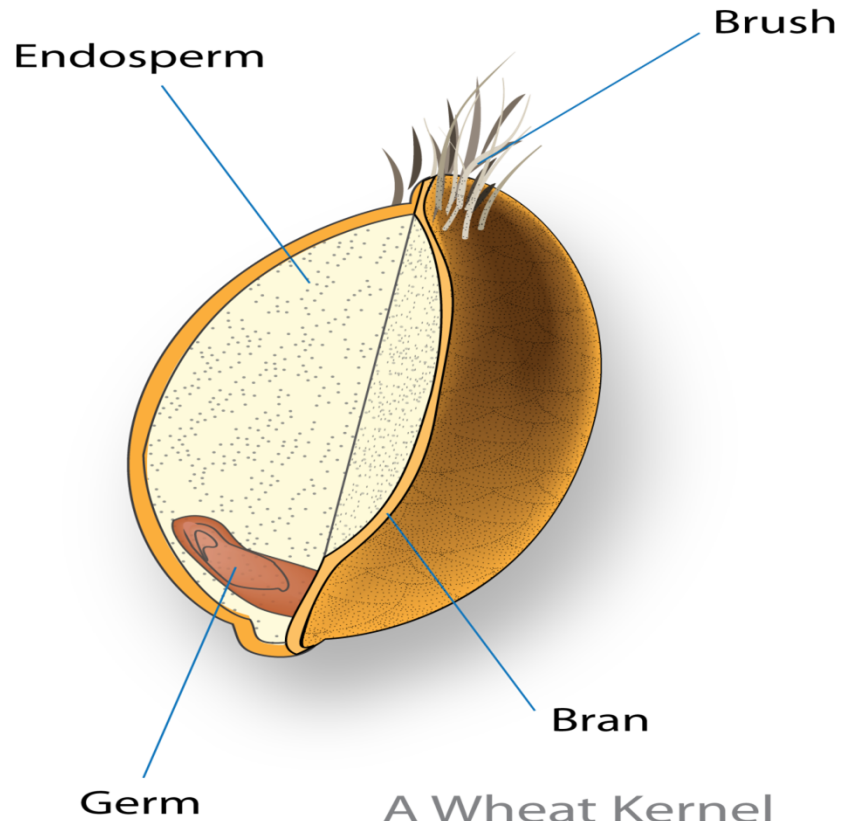
Presented by: Gabor Nagy

# Avarage tortilla ingerdients ratio

## PLAIN TORTILLAS



# Wheat Bran



|                                                                                                      | Carb./g | Protein/g | Fat/g | Fiber/g | Iron<br>(% daily req.) | Others                         |
|------------------------------------------------------------------------------------------------------|---------|-----------|-------|---------|------------------------|--------------------------------|
|  <b>Bran</b>      | 63      | 16        | 3     | 43      | 59                     | vitamin Bs                     |
|  <b>Endosperm</b> | 79      | 7         | 0     | 4       | 7                      |                                |
|  <b>Germ</b>      | 52      | 23        | 10    | 14      | 35                     | vitamin Bs<br>omega-3/6 lipids |

Nutritional Value (per 100g)

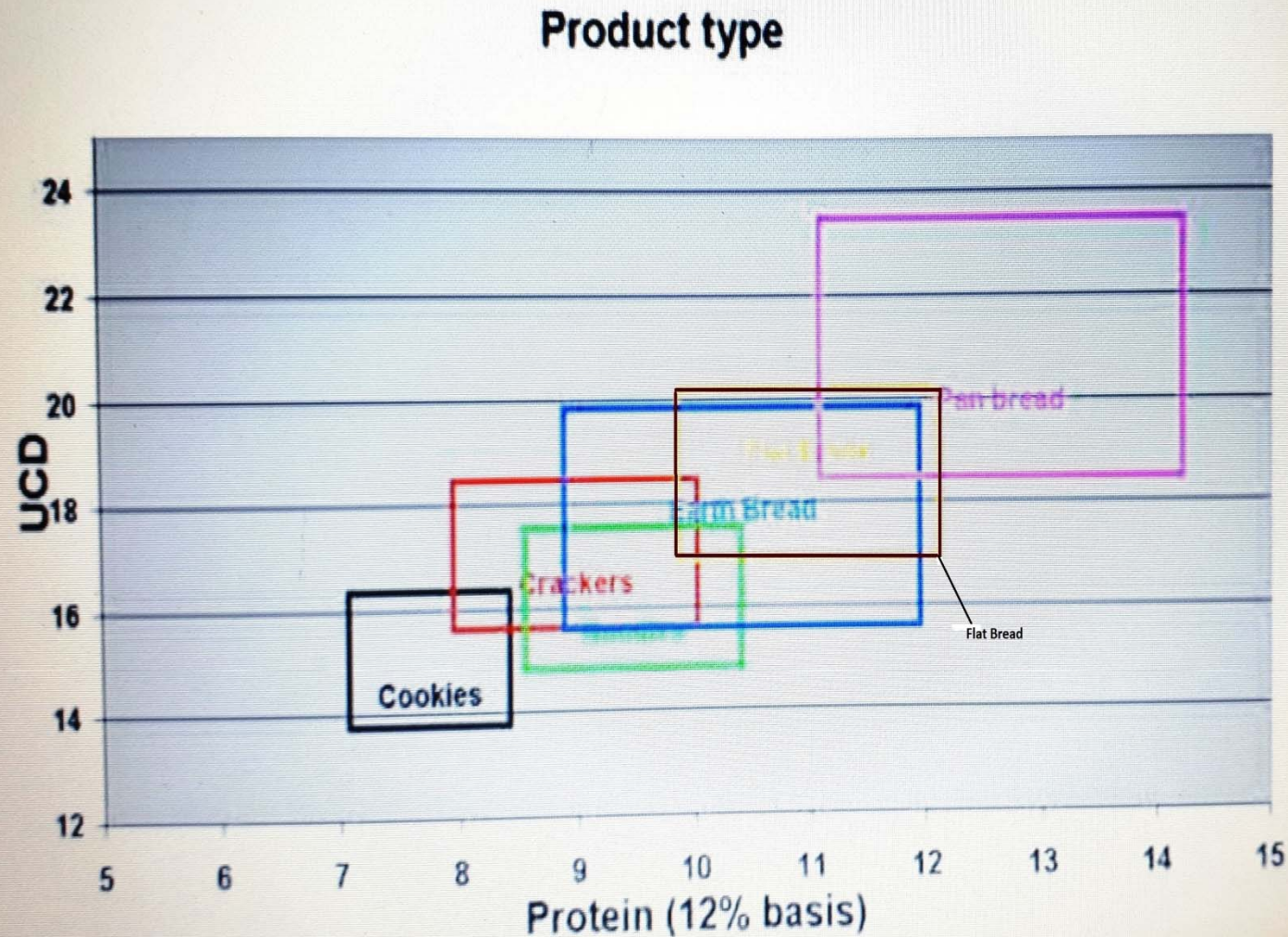
# Basic Wheat Tortilla Specification

|                                                                              |             |
|------------------------------------------------------------------------------|-------------|
| Moisture                                                                     | 14,5%       |
| Protein                                                                      | 11,5-12,5   |
| Gluten                                                                       | 27-29       |
| Ash                                                                          | 0,57        |
| Falling nr. (Hagberg)                                                        | min. 330    |
| DDT                                                                          | 2min.       |
| DST                                                                          | min. 4,5min |
| W                                                                            | 210-250     |
| P/L                                                                          | 0,6         |
| • <u>Additives level</u> : ascorbic acid, enzymes, vitamins, minerals etc... |             |
| • <u>Extensograph</u> –Extensibility                                         | 200         |
| Resistance max                                                               | 300         |
| • Starch Damage (UCD)                                                        | 20-22       |



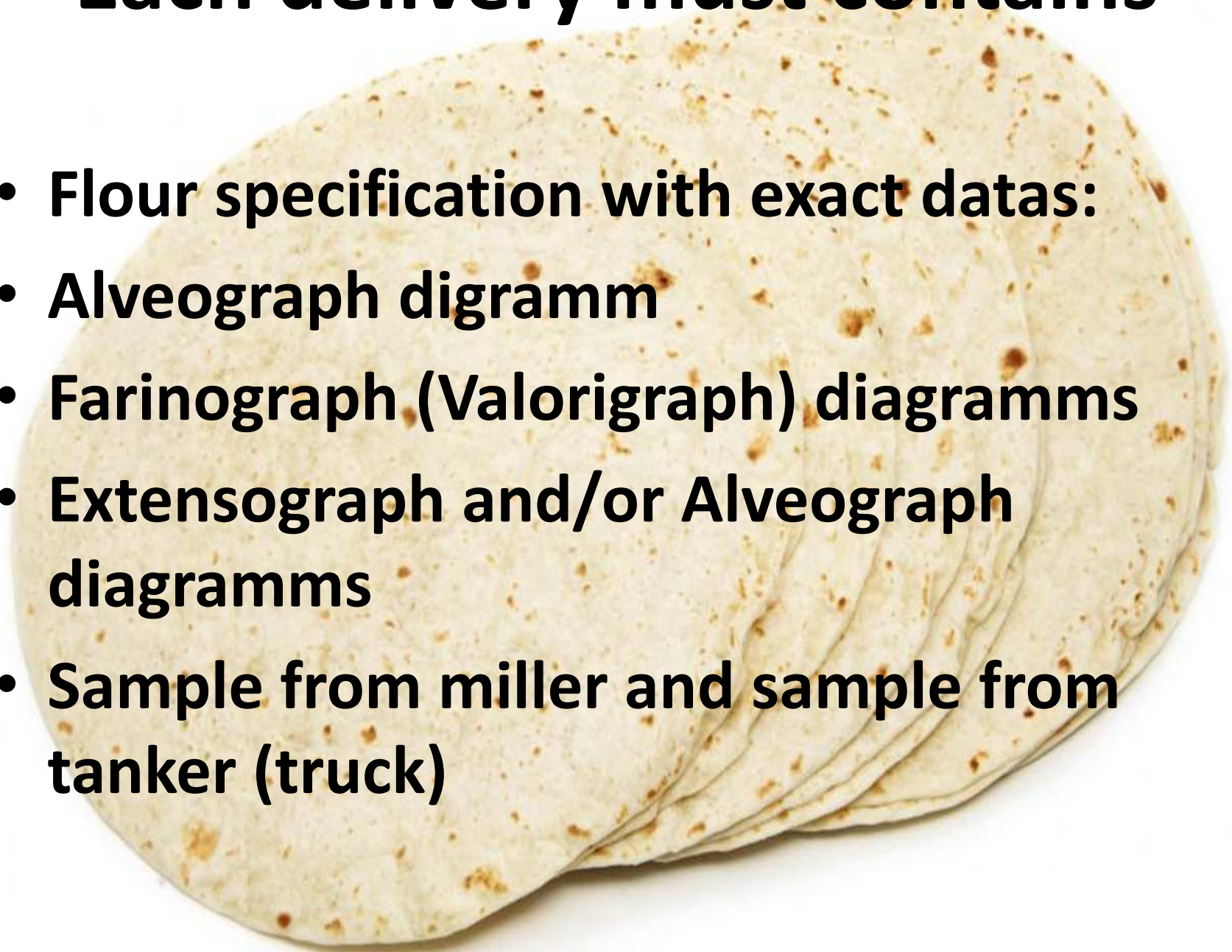
# Starch Damage UCD (Chopin)

ESTIMATION OF OPTIMUM LEVEL OF DAMAGED STARCH ACCORDING TO THE FLOUR PROTEIN RATE & THE END OF VALUE



# **Each delivery must contains**

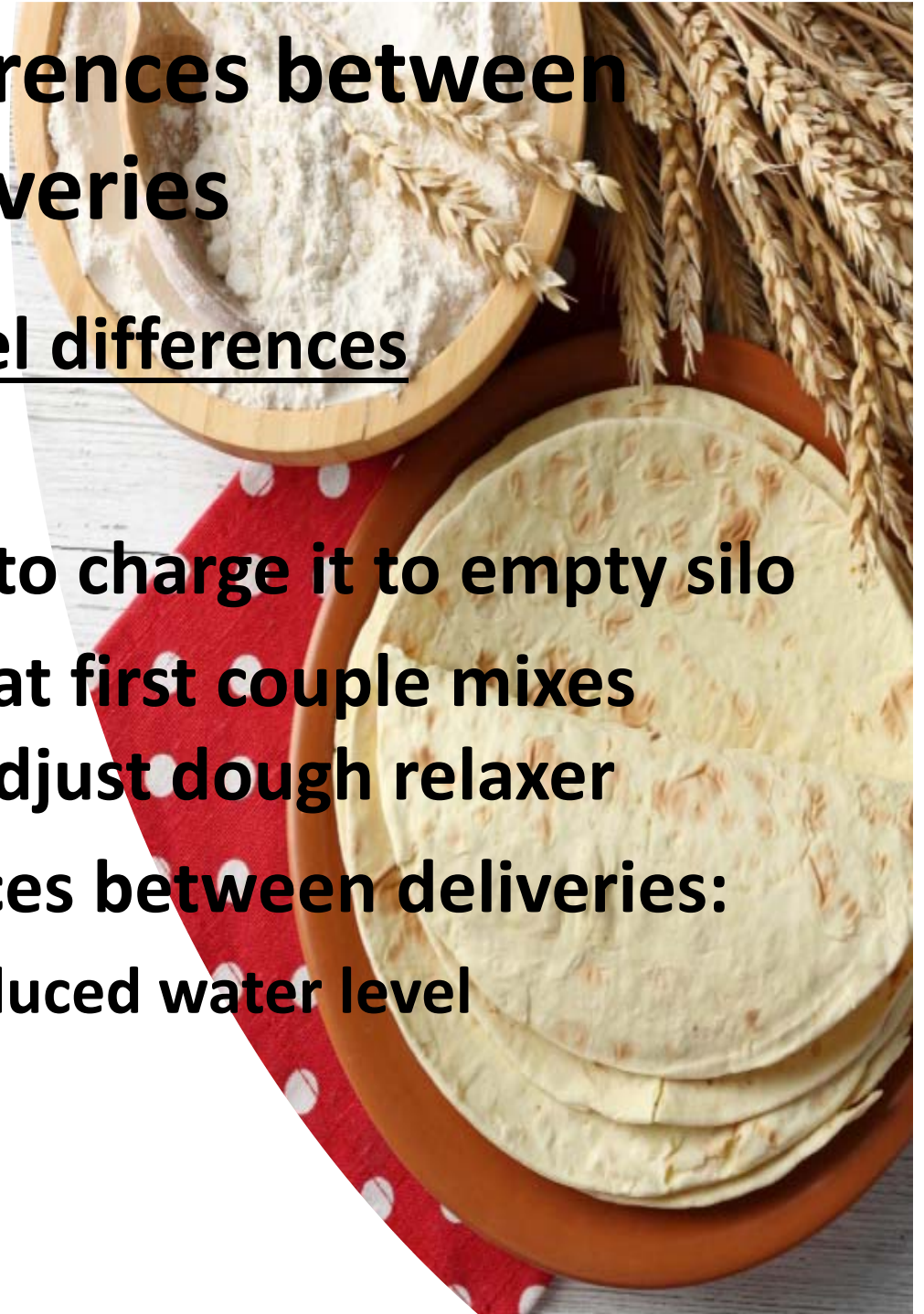
- **Flour specification with exact datas:**
- **Alveograph digramm**
- **Farinograph (Valorigraph) diagramms**
- **Extensograph and/or Alveograph diagramms**
- **Sample from miller and sample from tanker (truck)**



# Possible Differences between deliveries

## Water level differences

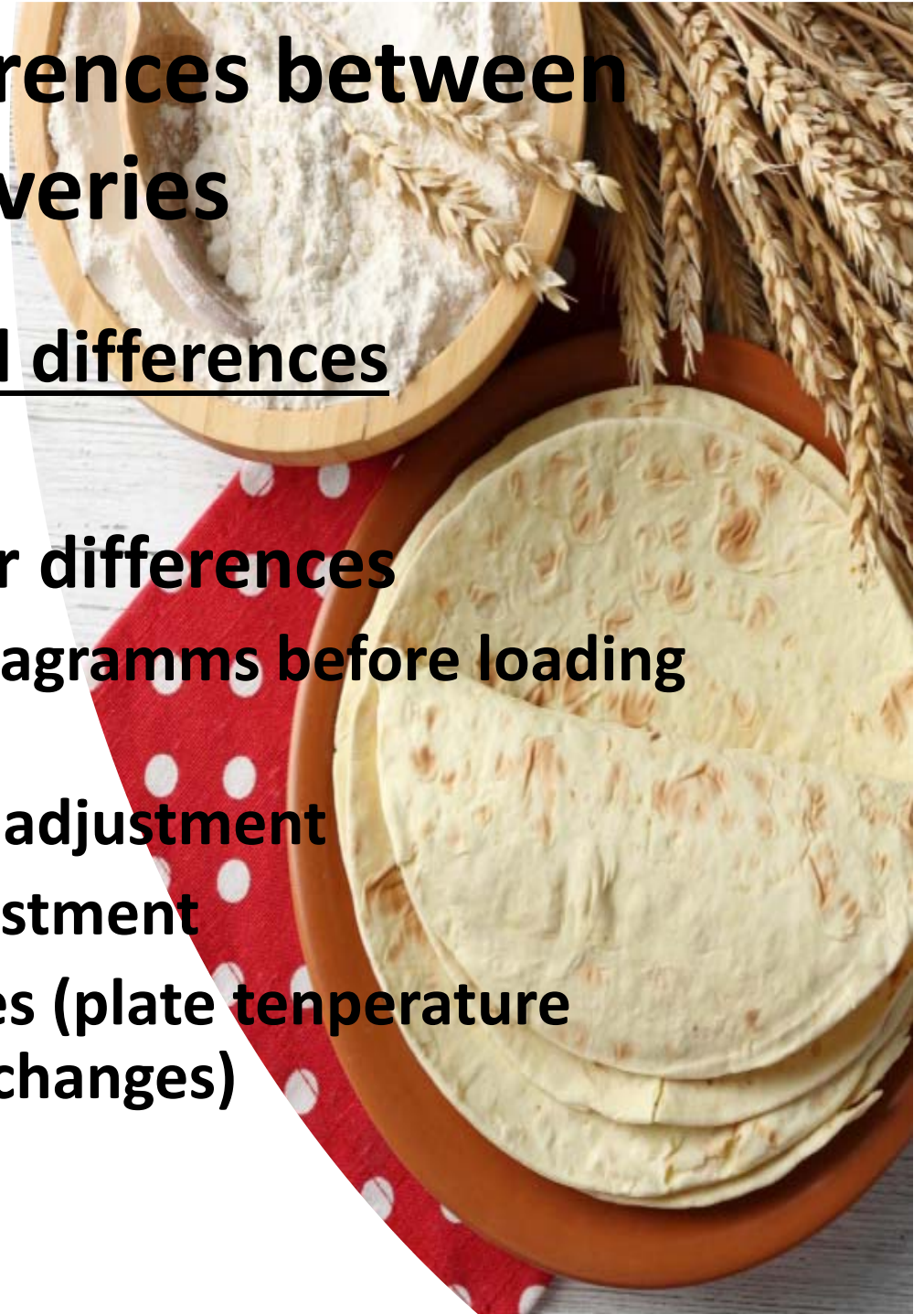
- New delivery better to charge it to empty silo
- Control mixing time at first couple mixes from new delivery, adjust dough relaxer
- Water level differences between deliveries:
  - Always start with reduced water level



# Possible Differences between deliveries

## Reological differences

- **DDT – DST parameter differences**
  - Check Farinograph diagramms before loading delivery
  - Possible mixing time adjustment
- **Doughrelaxer level adjustment**
- **Press parameter changes (plate temperature changes, pressing time changes)**



# Possible Differences between deliveries

## Ash content (color)

- Flour color test ( Pekar test) dry-wet
- Possible higher water absorption
- Tougher dough after proofing
- Higher press psi, and temperature
- Wheat bran pices in flour, darker color
- Possible different enzyme reaction



# Possible Differences between deliveries

## Starch damage changes

- Higher water absorption and water release ( might appears during proofing)
- Amylase based fresh keeper enzyme activity changes
- End product quality changes (flexibility-sticking)

