

# Round table IFPRI 2021

Methods and specifications for particle properties  
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# Particle and bulk specifications

## Raw materials

- Type of specification
  - Chemical and physical analysis: Main ingredients, solubility, NAG (min. or two-sided + target), impurities (max.), density/bulk density, PSD, LOD/LOI, surface area, PV etc. (Most often two-sided + target)
  - Packaging requirements
- Setting specification limits
  - R&D investigations based on product CTQ's and recipe needs
  - Std. ref. texts/Literature, kinetic modelling, test and statistical approach
- Analytical measurements
  - Vendor COA + registration + co-sample
  - Biannual control analysis + every batch for one year on new raw materials
- Other
  - Measuring frequency
  - Sampling
  - Calibration, internal/external round robin, MSA
  - Shelf life, moisture, temperature

# Particle and bulk specification

## Powder rheology and process behaviour

- Large portion on manufacturing issues/shut-down are due to powder handling
- Continuously working on utilizing powder rheology, PSD and electrostatic measurements in:
  - New equipment design
  - New raw material implementation
  - Scale-up
- With a statistical approach and simple modelling
  
- Want to implement powder rheology in vendor specifications for powder
  - And a recognized standard analysis would be very helpful here