

IFPRI Project Brief
Fisheye Avoidance and Break Up

In industrial practice, it is often observed that wetting of powder can lead to the development of fisheyes where further liquid imbibition is halted and unsaturated powder remains. These can form when dry powder is added to liquid (forming a wet gel surrounding dry core) or liquid is added to dry powder (forming gel balls that don't disperse easily)

The goals of this project are:

- 1) Identify the fundamentals and kinetics of fisheye development.
- 2) Recommend measures to prevent and remediate fisheyes, which may include formulation changes to the dry powder (e.g., composition, physical properties of raw materials) or process interventions (e.g., rate of addition, intensity of mixing)
- 3) Specific material properties of the dry powder shall include multicomponent formulations, void fractions of 0.10 to 0.70, particle sizes to 1 to 600 microns, no applied liquid pressure, with no agitation during incorporation, but could be considered for remediation.