



FEED TECHNOLOGY GROUP

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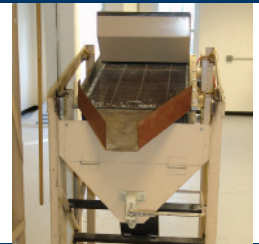
ADM Animal Nutrition™

A division of Archer Daniels Midland Company
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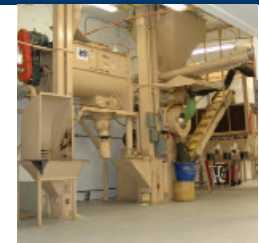
Feed Technology Research Center

Developing feed products



and processes to

meet future needs



The primary purpose of the Feed Technology Research group is to develop innovative, technologically advanced, and cost-effective products and feed manufacturing processes with emphasis on co-product utilization.

AREAS OF EXPERTISE

- Manufacture of Research Diets (meals, pellets, blocks, tubs, liquids)
- New Product Development
- Current Product and Process Maintenance
- Ingredient Characterization
- Co-Product Applications (liquid and dry ingredients)

ROUTINE ACTIVITIES CONDUCTED

- Ingredient Segregation Studies
- Stability Studies/Shelf Life
- Bulk Density
- % Fines
- Flowability
- Pellet Durability (standard and rigorous)
- Block and Tub Hardness
- Nutrient Leaching Studies
- Liquid Blends/Mixability

MIXING EQUIPMENT

Mixers have the capability to produce complete feeds, textured feeds, meal for pelleted feed, loose minerals, agglomerated feeds, concentrates, base mixes, pre-mixes, and liquid blends.

Kitchen Aid Mixer **1-2 lb**

Used to make quick evaluation of chemical and physical properties of various formulas.

Hobart Mixer **5-15 lb**

Used to blend low volume pre-mixes of high concentration for further use in pilot plant manufacture.

Simpson Mixer **30-50 lb**

Used for loose mineral formula evaluation and agglomeration technology research.

Poly Maid Mixer **25-50 lb**

Used in agglomeration technology research to evaluate less abrasive mixing techniques.

Dough Mixer **50-100 lb**

Used to blend low volume feed formulations, which may contain high fat or high liquid inclusion. (3.5 cubic feet)

500 lb Ribbon Mixer **250-500 lb**

Used to produce research diets and scale up other Discovery Research activities. (22 cubic feet)

1000 lb Ribbon Mixer **500-1000 lb**

Used to produce research diets and scale up other Discovery Research activities. (36 cubic feet)

FEED TUB PRESS

The feed tub press produces 10-30 lb feed tubs for evaluating liquid and dry ingredients for use in commercial 200-250 lb feed tub applications.

PELLETING EQUIPMENT

California "Master Model" pellet mill (30 HP) Ideal for production of individual batches ranging from as little as 100 lb up to a larger batch size of 1000 lb.

Available pellet dies – $\frac{3}{32}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{5}{16}$, $\frac{1}{2}$ and $\frac{3}{4}$ inch diameter.

Ability to package pelleted products in 25 to 50 lb bags or $\frac{3}{4}$ ton (1500 lb) bulk bags.

SCALE EQUIPMENT

Scales are capable of weighing as low as 0.01 grams up to 250 pounds. Access is available to scales that weigh in excess of a ton.

FACTORY BATCHES

Factory batches are produced in ADM manufacturing plants. These tests are necessary on all new products to confirm manufacturing observations identified at the Research Center and to determine the process logistics of the full-scale manufacture of products.

SHELF-LIFE/STABILITY STUDIES

An on-site environmental chamber is used to help measure shelf life and other effects on materials under ambient conditions and also severe temperature and humidity.