INFLUENCES ON TEXTURIZED FEED APPEARANCE

FEED COMPOSITION

- Grain micron size and surface area
    - Can be assessed quantitatively through laboratory test.
    - Surface area and micron size are inversely related.
    - A grain mix with larger micron sizes will usually have less surface area available for absorption of liquid coating products
    - Small micron size, meal-type ingredients, small pellets, and highly processed grains have more surface area available for contact and absorption of coating product
- Absorbability to coating product
    - Whole grains such as unprocessed corn or soybeans are less permeable to coating saturation, creating a mix that may look darker and may be stickier. This may also cause pellets to absorb more coating product.
    - Including a low level of liquid vegetable oil in mixes provides sheen & reduces permeability to coating product.
    - Dry fiber materials are often very absorptive to coating products due to surface area and low moisture content.
    - Even after the coating product is applied, a mix with greater portion of lighter colored materials such as oats, will have a lighter overall appearance than a mix with a greater portion of darker colored ingredients such as dark colored pellets.

INGREDIENT QUALITY

- Dry Matter and nutrient content of all ingredients
    - Quality Control monitoring of incoming ingredients
    - Visual assessment
- Presence of fines
    - Increase surface area to absorbAs I liquid coating, creating a drier appearance
- Pellet quality, surface area and Pellet Durability Index
    - Soft pellets will crumble, increasing surface area and absorption of liquid coating product

PROCESSING OF CORN

- Bushel weight
    - Lower bushel weight corn has higher breakage susceptibility and moisture saturation point. This can create more fines and lead to increased absorption of liquid coating product.

SHELF LIFE

- Consider manufacture, transit time, warehouse storage conditions, length of storage time, and on-farm inventory turnover
- Identify goals for shelf life
    - Length of time
    - Appearance at “end” of products’ shelf life
    - Longer shelf life provides more logistical flexibility but isn’t always favorable to feed appearance
- Ingredient quality, feed composition, and preservative inclusion will impact shelf life.

TEMPERATURE

- Ambient temperature & humidity
    - High temperature and humidity increase moisture evaporation from grains, causing feed mixes to dry out more quickly
- Grain temperature
    - Cold grain (<50 °F) is less permeable to liquid coating products, so more of the coating product remains on the outside of the particles. This causes the finished feed to have a darker appearance and feel more sticky.
- Storage temperature of coating product
    - Warm product soaks into grain more quickly, creating a lighter, or drier appearance

LIQUID COATING PRODUCT SELECTION & INCLUSION

- Higher dry matter products will provide a darker color to finished feeds, as they don’t soak in as easily as coating products with more moisture
- Increasing inclusion rate of coating product provides a greater amount of color, conditioning, and palatability to feeds.
- It is necessary to balance desired appearance, liquid coating application, shelf life, and available handling equipment to optimize finished feed handling.

MIXING

- Inadequate mixing will result in uneven color and texture of finished feed
- Bricking can be a concern with inadequate mixing
- Over-mixing may lead to reduced particle sizes and feeds with a drier appearance than desired

HANDLING/DELIVERY EQUIPMENT

- Monitor mixing and handling equipment for build up
- Build up is affected by many factors, such as, but not limited to; grain quality, particle size, mix consistency, uniformity and level of coating product application, speed/ efficiency of handling equipment

PRESERVATIVE INCLUSION, TYPE

- Preservatives are necessary to ensure and extend finished feed shelf life
- Normal preservative inclusion may slightly dry finished feed mixes – this also helps create a less favorable environment for mold growth
- Buffered preservatives are more palatable and have less impact on feed aroma compared to non-buffered

Finished feed appearance is directly impacted by all of the above factors. QLF SuprCoat™ enhances appearance, aroma, consistency, and palatability of finished texturized feeds, however, it will not mask concerns with dry ingredients, pellets or mix composition.