

Feed Homogeneity Test

APSN Homotracer consist of iron grit particles coloured with food-grade dyes. It is used to:

- 1) validate homogeneity of mixing process
- 2) detect cross-contamination, and

If feed is not mixed homogenously, portions of the feed will contain either too much or too little of the formulated ingredients. Excess mixing may also cause degradation of vitamins and medications. This excess variability causes economic losses to feed users and may increase the incidence of illegal drug residues. Manufacturers also waste labour, energy, time and capital if they mix feeds longer than necessary.

Preparation of Mixer

- 1) Clean and perform maintenance.
- 2) Check rpm of mixer.
- 3) Check and repair leaking at discharge door, if needed.
- 4) Check density of materials to determine suitable batch size.
- 5) Design and determine mixing time.

Application of APSN Homotracer

- 1) 1 bag of APSN Homotracer is used for 1 ton of feed.
- 2) Mix APSN Homotracer with 1kg of diluent (e.g. ground corn, salt) evenly before adding into mixer.
- 3) Add APSN Homotracer into the mixer together with other hand-added additives.
- 4) Operate the mixing process as per company's operation procedure.

Collection of Samples

- 1) Label the 10 sampling bags with Sample Identification, e.g. Sample 1, Company ABC.
 - 2) Stop the mixer upon completion of the mixing process.
 - 3a) If an open mixer is used, take about 250 g of sample from 10 different points in the mixer.
 - 3b) If a fully closed mixer is used, take the 10 samples from the conveyer or during packing. Sampling duration is calculated by dividing total discharging time per batch to 12 segments. Do not sample from the first two segments to avoid cross-contamination from the previous batch.
For example: For a batch with total discharging time of 180 seconds, take sample at 30, 45, 60, 75, 90, 105, 120, 135, 150 and 165 seconds. Do not sample at 0 and 15 seconds.
 - 3c) Alternatively, take about 250g of sample from alternate bags during packing.
 - 4) Manually remove excess air from the sampling bag by hand. Twist the opening of the sampling bag as tight as possible and seal the sampling bag with cable tie.
- Note: The sampling bag must be sealed tightly so that the sample particles in the sampling bag are fixed in position. This is important to ensure that the distribution of APSN Homotracer in the sampling bag reflects that of the sampling location.
- 5) Cut excess cable tie to avoid puncturing other samples while sending to laboratory for analysis.

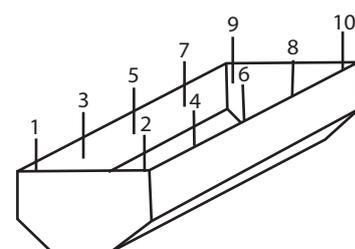


Diagram 1: Proposed sampling locations in the mixer

- 6) Pack all samples into the large plastic bag provided and tie it securely with a rubber band. Send the samples to VFAD or hand over to our technical and marketing specialist.



Diagram 2: Packing of sample

Interpretation of test results

| Coefficient of Variation, CV | Rating | Corrective Action |
|------------------------------|-----------|--|
| <10% | Excellent | None |
| 10-15% | Good | Increase mixing time by 25-30% |
| 15-20% | Fair | Increase mixing time by 50%, check if equipment is worn, overfilled, or rearrange sequence of adding ingredients |
| >20% | Poor | Possible combination of all the above. Consult extension personnel of feed equipment manufacturer |