

# Technical Article Series

Circular vibratory separator  
eliminates fines in animal feed.

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# Fines in Feed Can Affect Profitability

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With expenditures for feed accounting for approximately 60 percent to 70 percent of the cost of poultry production, it is obvious that waste in the form of fines can seriously affect profitability.

Poultry feeds consist mostly of corn and soybean with fractional amounts of middling, minerals, vitamins, and meat meal.

The corn is hammer milled, while the soybeans are crushed and then reground. Pellets are formed mainly by pressure, subsequent heat, and a small amount of steam.

Occasionally, clay-like material may be added to pellet feed to ensure binding, but despite careful procedures, fines form.

These fines can be entrained in the air if there's a breeze. Ducks will dump fines from their bills if they can get anything larger, or they'll wash them from their bills as they drink.

Fines in the feed have to be removed because the animals won't eat them. They have to be sifted out carefully and agglomerated. Precautions must be taken to avoid generating more fines.

Maple Leaf Mills, in Komoka, Ontario, was faced with this problem of excessive fines, and more -they needed to install a higher-capacity separator to handle increased production requirements.

Unfortunately, they had only an 8-foot-square space to put it in.

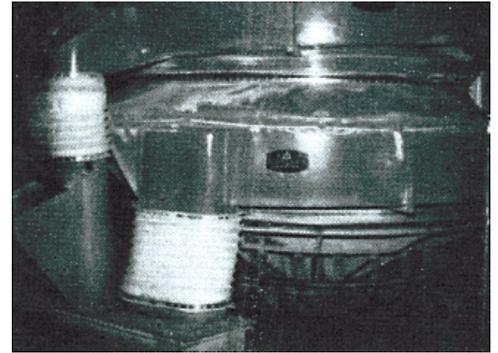
Throughput goal per 16-hour day was 120 metric tons of chicken, turkey, and hog feed pellets containing 1-3 percent fines. After checking with manufacturers of circular, rectangular, and centrifugal designs, the plant manager, Robert

Douglas, chose a 72" diameter circular vibratory separator manufactured in Canada by Separator Engineering Ltd., and in the United States by Kason Corp. in Millburn, N.J.

The vibrating screen unit separates fines from pellets in sizes ranging from 5/32" round to 3/4"x1" oblong. It uses a top Kascade deck containing a screen with 0.141" openings, and a bottom Kascade deck containing a screen having 10 mesh (0.074") openings.

Crumbs (cracked pellets) are separated into small particles for chicks and large particles for laying hens. Fines are recycled to the pelletizers, while pellets or crumbs drop into bins for bulk shipment.

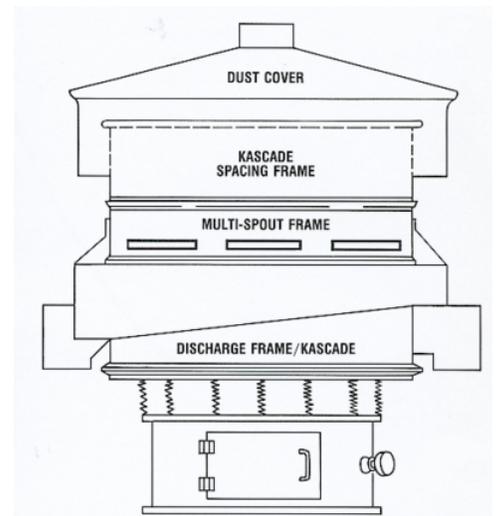
Douglas says the separator requires only weekly lubrication of the gyrator bearing to keep it in good operating condition.



*Kason dual-Kascade Deck unit separating fines from pellets at Maple Leaf Mills*



*Pellets cascading off the circumference of the top Kascade Deck of the Kason Vibroscreen circular screen separator at Komoka, Ontario*



*Schematic of two deck screen separator which removes fines from feed pellets and classifies crumbs.*