FLAKE PRODUCTION PROCESS

The type and quality of feed can greatly impact an animal's health. Flakes are prepared by cooking grains, such as barley, wheat and corn, under high pressure with steam, and then passing them through a flaker before drying them.

Flakes allow the high starch content in these grains to be more easily digested. **During the flaking process, the starch in the grains is gelatinized.** This allows the

starch to expand and burst. This change in the structure of the starch increases its digestibility to over 95 percent. Flake is tastier than unprocessed grains, which increases feed consumption and therefore (milk-beef) yields of animals.









PRODUCTION OF QUALITY FLAKES FOR MAXIMUM DIGESTIBILITY

The digestibility rate, which is 75 to 80 percent in cracked grains, increases to up to 97 percent in grain flakes.

During processing, all raw materials undergo a very thorough screening and cleaning process with our equipment. **The product to be steam flaked does not contain any dust, soil, stubs, husks or other foreign materials**, which directly affects quality.

Barley Flakes:

Barley contains relatively high protein quality and content. This is why barley flakes are used as feed in livestock farming.

Barley flakes are better suited for ruminants. Unflaked barley causes digestive problems for animals. As such, **we recommend flaking the barley into flake form before feeding.**

Corn Flakes:

The goal with corn flakes is to increase the yield and starch digestibility of corn, one of the top choices in animal nutrition, by processing it at the appropriate temperature.

The digestibility rate, which is 87 percent in cracked corn, increases to up to 96.5 percent in corn flakes.

BENEFITS OF FLAKES

- 1. Increased milk yield,
- 2. Improved starch digestibility,
- 3. Increased milk protein and fat,
- 4. Improved feed energy value,
- 5. Better liveweight gain,
- 6. Better feed utilization,
- 7. Less selective feeding,
- 8. Rapid growth in calves,
- 9. Improved feed taste,
- 10. Increased roughage efficiency,



STEAM CHAMBER: THE HEART OF THE FLAKING LINE

The quality of the steam chamber is crucial during flaking. Steam conditioning is the process of softening grains such as barley and corn before feeding them into the flaking roller mills during the production of flakes.

In Yemmak SCT-type steam chambers, the products are steam-conditioned in accordance with a range of temperature, time and moisture parameters. A special steam distribution system applies the saturated steam to the products from several points to ensure even distribution. The amount of steam used varies according to the type of grain. Increasing the moisture facilitates the gelatinization of the grain during crushing.



The level sensors on the steam chamber enable the on/off valves on the steam piping to be controlled according to the quantity of grain and load factor in the chamber.

HARDENED Rollers

Flakes are acquired by steaming grains, such as corn and barley, and passing them through rollers to flake them.

These high-diameter rollers on flaking roller mills facilitate the gelatinization process of grains. The machine's rollers are hardened by heat treatment, making them wear-resistant.



The roller gaps can be adjusted according to the desired flake thickness.

OPTIMUM DRYING

The hot and moist product exiting the mill is then sent to the dryer. The air pulled into the heat exchangers on the dryer is heated and passed through the

flakes to initiate the drying process. In two-deck dryer applications, the lower deck is used for cooling. This lower deck achieves cooling by exposing the grains to room temperature.

PRIMARY EQUIPMENT IN THE FLAKING LINE

FLAKING ROLLER MILL

Thanks to the drum feeder on the Yemmak FLRMH flaking roller mills, the rolls are continuously fed and a stable grain flow is achieved. The optimum rotation speed and the roller structure minimize dust.

Our machine models are available with different roller diameters and have a 1.5 to 12-metric tons/hour capacity for 0.8–1 mm flake thicknesses.



STEAM CHAMBER



Yemmak SCT-type steam chambers are manufactured in volumes of 5 to 15 cubic meters. Chamber volumes are determined according to flake unit capacity.

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DRYER & COOLER



First, the air is heated by the heat exchanger and steam on the upper decks, which reduces the moisture in the product. These machines can be manufactured as vertical, horizontal, or single- or double-deck.



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