

Spice Grinding Application Story



OVERVIEW

The Issues:

- Sizing effects spice flavoring
- Ground spices have shorter shelf life
- Processing temperature affects the spices color characteristics

The Solution:

- Full Screen Hammermills
- Mega Mills

Background:

Spices have an integral place in the history of the world. Early uses were connected with magic, medicine, religion, tradition, and preservation. Today, spices are generally defined as any dry plant product used primarily for seasoning purposes. Some of the most common spices are black pepper, cinnamon, cumin, nutmeg, ginger and cloves.

Historically, spices have always been among the most demanded products although access to the plants of origin and limited trade access, made them expensive. Global sourcing has made spices more affordable over time. Affordability, accessibility, and a spicier American palate, have all contributed to increases in demand. According to the American Spice Trade Association (ASTA), per capita consumption has increased from approximately 2.33 lbs. annually in 1980 to 3.19 lbs. by 1990 with an estimated 877 million pounds a year being consumed in the United States alone.

Issues:

Available in several forms, spices can be purchased fresh, whole dried, or pre-ground dried. Dried whole spices generally have the longest shelf life but pre-ground dried spices in powder form are the most widely used because of easy storage and convenience.

The flavor of a spice is derived in large part from their essential oils as they oxidize or evaporate when exposed to air. Grinding a spice greatly increases its surface area and so increases the rates of oxidation and evaporation. Spice grinding of whole dried spices have traditionally been ground in a mortar and pestle. As demand has grown over time the use of industrial grinding equipment was needed to keep up with demand.



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Solution:

Today, companies in the spice grinding business look to companies like Prater Industries for material sizing expertise. They look to products like the Hammermill or Mega Mill to process the large quantities of spice needed to meet demand.

Prater's Full Screen Hammermill has many benefits that make it desirable for the application of spice grinding. Uniform granular grind and even hammer wear make the equipment able to process thousands of pounds per hour, 24 hours a day, 7 days a week to grind specifications with very little maintenance. Easy screen changes and full-access maintenance make it uncomplicated to change the fineness of grind from one product to another. Efficient design allow for increased throughput capacity and low power requirements helping companies maximize their output of profitable goods while minimizing their operation costs.

For many spices, the color of the spice can be as important as the flavor quality. Spice applications with desirable color characteristics may be heat sensitive, and for this reason Prater's Mega Mills is often the best fit. Prater's Mega Mill, like the Full Screen Hammermill, is also rated for 24/7 operation and designed for easy maintenance. Additional benefits over the Hammermill include a uniform grind with less heat build-up. Additionally, bearing and shaft arrangement makes for a smoother & quieter operation with lower power requirements.

Company Overview:

At Prater Industries, results come first. Our products work to serve your dry processing, powder and bulk solids applications. With Prater's extensive line of equipment and systems, you will obtain the best possible results of your process time after time. Each of our high-quality products are developed to serve each industry differently, in order to provide the desired outcome of each processing application.

Each of our products carries the Prater guarantee of efficiency and durability, while designed to adapt to serve the needs of a variety of industry applications. Prater products are rugged and time-tested, providing the best results for materials processing. Whether you plan to feed, size, enlarge, weigh, or reduce your material, Prater products provide the Particle Management Solutions you seek.

At Prater Industries, results come first. Prater has been providing reliable particle management solutions since 1925. The company specializes in an extensive line of equipment and engineered systems including rotary airlocks, fine grinders, classifier mills, lump breakers, hammermills, screeners/separators, compactors, plant-wide automation/controls as well as toll processing services.

Call **630-759-9595** to have Prater customize a solution based upon your specific application.