The Complete Guide to **Canola Oil Processing:** From Seed to Oil

Canola oil is one of the most widely used vegetable oils in the world, valued for its neutral flavor, heart-healthy profile, and versatility in food production, biofuels, and industrial applications. However, turning tiny, hard-hulled canola seeds into high-quality, commercially viable oil requires a precise, highly engineered process—one that CPM has spent decades perfecting.

With over 145 years of expertise, CPM | Crown is the largest supplier of oilseed extraction technology in North America—and a trusted partner for processors worldwide. Leading producers, including ADM, Cargill, and Bunge, rely on CPM's innovative equipment, process solutions, and global support to optimize their operations.

CPM | Crown's proprietary solvent extraction systems recover 99% of available oil, reducing solvent loss and energy consumption. From seed cleaning to refining, CPM | Crown designs fully integrated processing plants tailored to customer needs. Our Global Innovation Center, a 15,000 sq. ft. oilseed pilot plant and R&D facility, allows customers to test, validate, and scale oilseed processing innovations. Additionally, with Lifecycle360 Services, CPM | Crown provides process optimization, training, maintenance, and automation solutions to maximize plant efficiency.

Critical Steps of the Canola Oil Processing Journey Include:

Seed Reception & Cleaning: From the moment canola seeds arrive at a processing facility, careful handling and processing are crucial to ensure smooth operation downstream. Thorough cleaning and pre-processing are essential to remove foreign materials that can damage equipment and reduce oil yield.

Seed Preparation: Conditioning, Flaking & Cooking: Once cleaned, the seeds undergo conditioning, flaking, and cooking to optimize their structure for maximum oil recovery. This stage involves controlled heating, moisture adjustment, mechanical breakdown, and cooking to soften the oil cells and improve extraction efficiency.

Pre-Pressing – The First Stage of Oil Extraction: Pre-pressing uses mechanical screw presses to extract a portion of the oil before the remaining material moves on to solvent extraction. This step helps remove 60-75% of the oil, reducing the amount of solvent required and improving overall plant efficiency.

Solvent Extraction – Maximizing Oil Recovery: Solvent extraction is the most efficient method for large-scale canola oil production, reducing the oil content in the meal to 1% or less. CPM | Crown specializes in high-efficiencyoilseedextraction technology, including Counter-Current Extractors, solvent recovery systems, and desolventization solutions.

Canola Meal Processing – Unlocking the Full Value of the Seed: Canola meal, a valuable co-product, is the second most traded protein source in the world. By optimizing drying, cooling, and handling, processors can ensure high-quality, high-protein meal for global livestock, dairy, poultry, and aquaculture feed markets.

Oil Refining – Transforming Crude Canola Oil into a Market-Ready Product: Refining removes impurities, color pigments, and residual phospholipids from crude canola oil to meet food-grade, biofuel, or industrial standards. This ensures high-quality, stable oil suitable for various applications.

Unlocking the Future of Canola Processing: Protein Extraction

For decades, soy protein extraction has been the gold standard in plant-based protein production. Now, the same innovation is driving the next major opportunity in oilseed processing: canola/rapeseed protein extraction. At CPM's Global Innovation Center, we have developed a commercial-scale canola protein extraction process, which is now being tested and refined with customers. Canola protein, with its mild flavor, strong amino acid profile, and excellent functional properties, is a promising ingredient for plant-based meat alternatives, sports and nutritional supplements, and aqua feed.

Crown's proven expertise in soy protein concentrate technology is the foundation for our canola/rapeseed protein concentrate process starting with our novel dehulling system that maximizes protein in concentrate and meal.

CPM continues to lead the way in oilseed processing technology, ensuring our customers achieve excellence in their operations. Explore our latest blog post to learn more about the complete guide to canola oil processing and discover why CPM is the industry expert that oilseed processors rely on:

https://onecpm.com/success-story/the-complete-guide-to-canola-oil-processing-from-seed-to-oil

