Enacting Change in **Edible Oils**







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CPM|Crown has grown over the last 146 years to become a leader in edible oilseed processing and extraction. We sit down with the company's senior leadership team, who shed light on how CPM|Crown's focus on innovation is helping it shape the future of the industry

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As a trusted global leader in oilseed extraction, CPM|Crown provides advanced technologies, processing equipment, services, and solutions for industries including food, feed, aqua, energy, industrial, and specialty products.

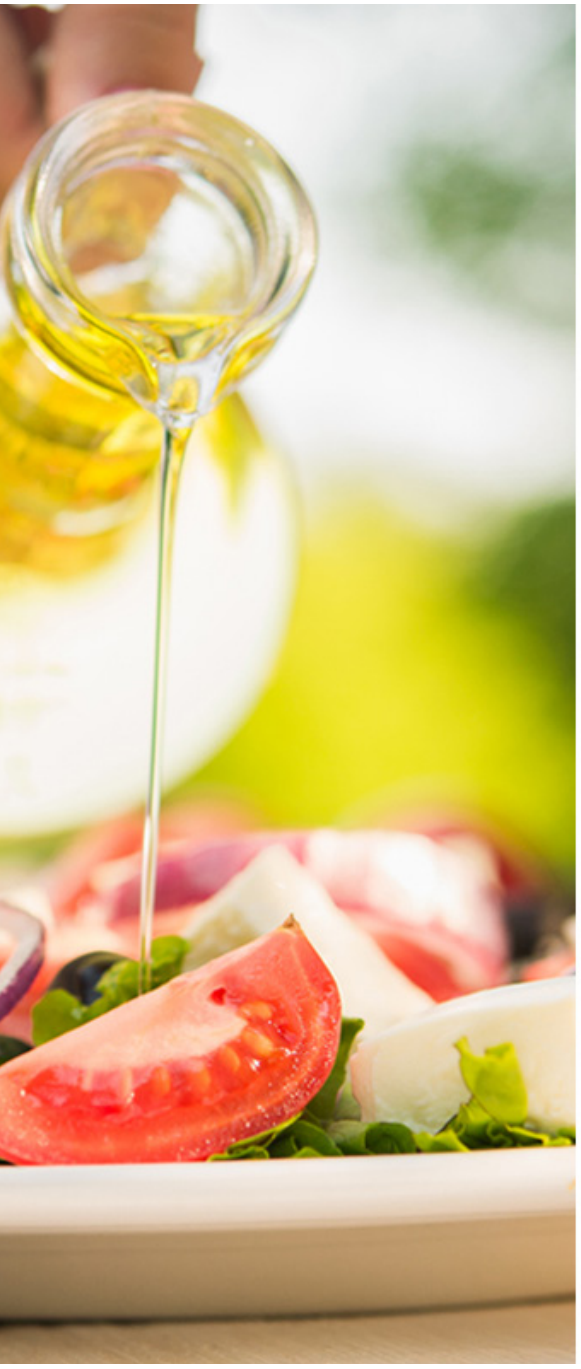
More specifically, these markets focus on oilseed processing, including the extraction of soybeans, canola, sunflower, and other oilseeds; green energy and renewable fuels, such as biodiesel and renewable diesel; food, feed, and aquaculture, comprising food-grade processing, specialty proteins, animal feed, and aqua feed; and chemical and pharmaceutical applications, which utilize specialized solid-liquid separation, refining, and specialty processing across many diverse products.

The company offers a comprehensive portfolio of oilseed processing and refining solutions. Prior to refining, oil must be extracted from the oilseeds, which involves seed preparation, solvent extraction, and desolventization processes.

Seed preparation includes cleaning, dehulling, conditioning, cracking, and flaking, each critical to enabling effective extraction.

Next, the extraction process uses a counter-current flow where prepared flakes and liquid solvent wash in opposite directions inside an efficient and reliable, patented Crown extractor. The liquid stream yields a rich mixture of oil and solvent called miscella, alongside the solvent-wet solid meal.

The meal is desolventized and toasted for use as a feed ingredient, while the miscella is pumped to the distillation process to separate the solvent from the crude oil. The solvent is subsequently reused in the process. Meanwhile, the oil undergoes a stripping process to remove any residual solvent – making it available as crude oil feedstock for further refining.







In the oil refining process, the first step involves degumming the oil to remove phospholipids and other components. From there, neutralizing steps remove free fatty acids and bleaching removes color bodies and residual impurities, creating a lighter appearance.

Deodorizing strips volatile compounds to secure a stable, palatable flavor profile, while also improving the color. Finally, crude filtration and winterizing involve the removal of solid impurities and wax fractions, respectively.

"This detailed refining process ensures the customer can provide high-quality products on a consistent basis," opens Bill Morphew, VP Sales – Liquids Segment.

CPM's vast global structure is supported by over 1,700 employees from its international headquarters and Global Innovation Center in Blaine, Minnesota, as well as worldwide locations such as the UK, Netherlands, Argentina, Brazil, and China.

FEEDING A CHANGING WORLD

Increasing biofuel demand, feedstock volatility, tighter quality standards, and evolving sustainability expectations are continuing to shape the edible oil refining sector in North America.

As a result, food applications remain essential, while other sectors such as renewable diesel, biodiesel, and sustainable aviation fuel compete for soybean oil, canola oil, used cooking oil, animal fats, and other feedstocks.

This restricted supply environment is pushing refiners to improve yield, flexibility, uptime, and feedstock optionality, and adapt to changing products, where oil has gained strategic importance, and the food produce markets move more independently.

Within this landscape, CPM|Crown plays a key role.

Crown is a brand division of the CPM organization whose systems support core refining steps such as degumming, neutralizing, bleaching, deodorizing, winterizing, dewaxing, enzymatic degumming, hydrogenation, fractionation, and fat modification.

By helping refiners process variable crude oils, remove key impurities, protect yield, and maintain product stability, CPM|Crown supports the industry's move toward more flexible, efficient, and sustainable refining capacity.

"CPM|Crown's full suite of solutions positions the company as a strategic partner in a market where food, fuel, and sustainability priorities increasingly overlap," Morphew outlines.

SUSTAINABLE AND ECONOMICAL

In October last year, CPM|Crown launched Monarc Clean Oilseed Processing™ (Monarc™) – a revolutionary alcohol-based solvent extraction technology.

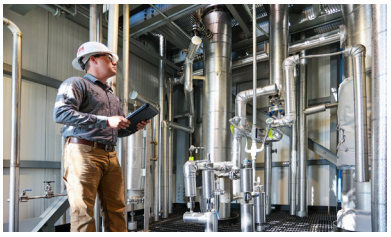
Monarc™ provides customers with a competitive advantage because it solves the central trade-off that has limited the clean oilseed processing sector for decades.

"Processors have wanted safer, more sustainable, clean-label alternatives to petroleum-derived hexane, but alcohol-based systems historically struggled to match hexane's economics at commercial scale. Monarc™ changes that by combining a patented ethanol-based extraction process with the scale, economic viability, and familiar plant configuration customers expect from modern Crown crush and protein plant offerings," highlights Marc Ulery, Global Product Director – Monarc™.

Historically, hexane became the industry standard because of its efficient, high-volume, and affordable oil extraction qualities. However, Monarc™'s use of ethanol maintains these attributes while also ensuring cleaner production, with a process that is on par from both a capital investment and an operational cost perspective.









NORTH AMERICA Outlook

CAN YOU TALK ABOUT THE COMPANY'S LONG-STANDING SUPPLY CHAIN OPERATIONS AND HOLISTIC PROCESS SOLUTIONS?

Kris Knudson, President: "CPM | Crown leverages more than 75 years of industry experience to provide end-to-end operational solutions for the global oilseed, renewable fuel, and specialty extraction sectors.

"Its supply chain management approach includes strategic sourcing, supplier risk analysis, purchased materials planning, and logistics optimization across international manufacturing branches. These capabilities help customers reduce project complexity while maintaining consistent engineering quality, delivery performance, and operational reliability.

"CPM | Crown's holistic process solutions integrate custom process engineering, technical expertise, equipment supply, material handling, automation, and turnkey delivery capabilities into a single coordinated offering – providing end-to-end support from initial planning through to equipment delivery and commissioning.

"Lifecycle360™ single-source support services are designed to help customers optimize and extend the full lifecycle of their facilities from pre-engineering to revitalizing aging plants.

"This approach is designed to minimize plant downtime, sustain equipment performance, and provide customers with a trusted, proven partner across the full operating life of their processing assets."



This allows Monarc™ to be positioned as much more than a niche sustainability upgrade, but a commercially viable platform for mainstream oilseed processors.

The technology's aforementioned characteristics also make adoption easier for processors, investors, and engineering teams because it does not ask them to choose between sustainability and economics.

Moreover, the design and operation of Monarc™ oilseed processing facilities are very similar to Crown's existing crush or protein plant systems. This makes the solution more familiar to customers evaluating retrofits, brownfield improvements, or greenfield construction and presents it as an evolution of established extraction infrastructure rather than a risky departure to an unfamiliar processing platform.

"Crown provides the process know-how needed to make ethanol extraction economically viable while leveraging established and well-known technologies. This combination reduces perceived technology risk and improves our ability to win strategic projects," Ulery points out.

CLEAN-LABEL MOVEMENT

The clean-label movement continues to permeate the food and beverage industry, with consumer awareness around food production processes growing, and the edible oil sector playing a key part in this increased focus. Fortunately, Monarc™ closely aligns with the consumer-driven shift.



"Monarc™ aligns closely with the clean-label movement by enabling processors to respond to growing consumer awareness around what people consume and how those products are made. As expectations on food manufacturers continue to rise, Monarc™ creates a market-facing advantage by supporting the production of high-value, clean-label ingredients and products, including the potential for organic labeling, where supply chain and regulatory compliance permits"

– MARC ULERY, GLOBAL PRODUCT DIRECTOR – MONARC CLEAN OILSEED PROCESSING™, CPM | CROWN



"As expectations on food manufacturers continue to rise, Monarc™ creates a market-facing advantage by supporting the production of high-value clean-label ingredients and products, including the potential for organic labeling, which are permitted by supply chain and regulatory compliance," Ulery says.

The technology's use of ethanol, which is already associated with food and beverage applications, gives processors a more consumer-aligned processing story compared to petroleum-derived hexane.

This also supports the goals of brand owners and ingredient suppliers as they seek to communicate simpler processing, cleaner ingredients, and more responsible production.

Such advantages extend across a broad range of markets, including oils, meals, white flakes, protein concentrates, animal nutrition products, and biofuel-related value chains, all of which can benefit from a hexane-free processing narrative.

"The potential for clean manufacturing strengthens CPM|Crown's value proposition beyond equipment sales by giving customers a scalable route into premium, differentiated markets and helping them advance broader growth strategies tied to cleaner, more responsible manufacturing," he expands.

CIRCULAR CARBON MODEL

As a clean oilseed processing technology, Monarc™ also offers a meaningful environmental step forward by enabling ethanol extraction as an alternative to petroleum-derived hexane.

Because ethanol can be produced from plant-derived renewable sources, the technology enables processors to better align extraction operations with corporate sustainability goals, renewable energy strategies, and broader industry decarbonization commitments, while also being more scalable, efficient, and economical.

Renewable ethanol additionally supports a departure from fossil-based extraction solvents in favor of a more circular carbon model.

"Alcohol-based extraction can draw on agricultural or bio-based ethanol supply, reducing exposure to fossil-carbon inputs while allowing producers to maintain scale. Rather than introducing additional petroleum-derived solvent demand into the production chain, alcohol extraction draws on an agricultural-based ethanol supply, helping processors reduce exposure to fossil-carbon inputs," explains Ulery.

This ultimately supports decarbonization while allowing producers to maintain the processing scale their businesses require.

Monarc™'s alcohol-based approach also creates practical advantages for permitting and environmental review.

In the US, hexane appears on the Environmental Protection Agency's List of Hazardous Air Pollutants. Ethanol is not identified as such, making it better-positioned for facilities facing tighter air emissions targets, regulatory uncertainty, or heightened community scrutiny.

Furthermore, for producers located in populous areas or markets

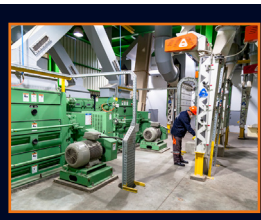






UCI

Upper Consulting, Inc. (UCI) is an experienced process mechanical engineering firm located in America's heartland. We provide detailed process mechanical design services to the oilseed, renewable fuels, food, chemical and mineral industries. We have extensive experience in full process plant design and have executed brownfield and greenfield projects in more than 30 states and six countries.








Relationship with CPM|Crown:
UCI has worked with both CPM and Crown Iron Works since the very early 1990s on many brownfield retrofit projects in oilseed preparation, solvent extraction, oil processing, meal processing, biofuel pre-treatment, biodiesel, plant-based protein processing. We have worked with the CPM|Crown team on a few new greenfield facilities as well. From extraction plant retrofits; deodorizer replacements; seed types system upgrades - UCI has worked closely with Crown on these type projects over the last 35 years and look forward to the next 35 years collaborating with the leader in oilseed processing.

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where permitting timelines and public acceptance can influence project viability, using ethanol can support a smoother path through environmental approvals and reduce the perceived risk associated with new extraction capacity.

SAFETY ADVANTAGES

Monarc™ also offers myriad workplace safety advantages, helping customers transition from petroleum-based hexane exposure risks to an alcohol-based process, which has more favorable safety and handling properties.

"By eliminating toxic hexane exposure concerns, the technology can improve plant safety profiles and essentially remove the risks of processing with hydrocarbons, which are traditionally used to strip or clean any residual hexane from the oil," Ulery tells us.

On top of this, ethanol is non-toxic and not classified as a carcinogen, thus reducing worker health risks during operations, maintenance, material handling, and storage.

It also provides an added fire safety advantage because the chemical's autoignition temperature of 363 degrees Celsius (°C) is significantly higher than hexane's at 223°C, creating a wider margin against unintended ignition.

Furthermore, since water is miscible in ethanol, sprinkler or deluge systems can both cool and dilute it, while water



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– ALEX DANELICH, CCO, CPM | CROWN



applied to hexane can only provide cooling and cannot dilute the solvent.

These advantages support customer goals around worker safety, operational risk reduction, and responsible manufacturing.

As such, for processors facing growing expectations around safety, the operating profile of Monarc™ can become a meaningful project driver.

"By enabling safer, more confident day-to-day operations, the technology creates an opportunity for increased employee engagement, stronger safety culture, and improved conditions for successful plant performance," Ulery notes.

CONNECTING INNOVATION AND EXECUTION

CPM|Crown's Global Innovation Center provides a low-risk path to develop, validate, scale, and commercialize new products and processes.

Located at its Blaine headquarters in Minnesota, the 15,000-square-foot pilot plant, analytical lab, and training facility replicate production environments while providing expert support, confidential testing space, and full-scale processing insight.

The company's world-class value comes from combining production capability with deep technical expertise. With systems for preparation, extraction, and liquids refining, customers can progress from feasibility work to continuous pilot-plant testing with data representative of commercial operations.

The Global Innovation Center operates 24 hours a day, five days a week, enabling scale-up testing under real-world production conditions.

It offers a complete innovation ecosystem with an analytical lab, engineering, fabrication, piloting, and R&D teams translating results into process designs, equipment selections, and return on investment (ROI) analysis for efficient implementation.

Through the Center, CPM|Crown combines forward-thinking, proprietary technology, engineering knowledge, aftermarket experience, and full-scale support to help customers anticipate megatrends, improve continuously, and bring products to market with confidence.

The facility also strengthens workforce readiness through classroom and hands-on training in controlled environments that mirror plant realities while reducing risk and disruption.

"The Global Innovation Center connects innovation with execution. It gives producers a state-of-the-art production plant for innovation, real-world testing before implementation, engineering, ROI analysis, confidential product sampling, and workforce training," surmises Alex Danelich, CCO.

ADDITIONAL PRIORITIES

With Monarc™ moving from the development stages into commercial execution, the first commercial plant contract was awarded to Elian in Barcelona, Spain in August last year.

CPM is supplying equipment for Elian's commercial-scale facility

A TRUSTED ADVISOR

CPM's internal culture of help, support, and collaboration is embedded into its teams' daily activities.

Because the company's engineering, operations, field service, training, R&D, and commercial departments work together as one team, customers encounter the same experience externally through responsiveness, technical guidance, active listening, and a commitment to staying engaged from early discussions through implementation, start-up, training, optimization, and long-term support.

This creates a value-added company culture that is easily able to solve complex challenges in oilseed processing, food, renewable fuels, specialty extraction, and industrial operations.

"Our customers are seeking a trusted advisor who understands their process, constraints, requirements, and business goals. The Global Innovation Center and Lifecycle360™ both demonstrate this customer-facing culture by providing them access to collaborative expertise, piloting, testing, training, field service, maintenance, optimization, and support across the full lifecycle of their facility," Danelich affirms.

expansion to produce soy protein concentrate at the Port of Barcelona, supporting clean-label, plant-based protein production capacity using Monarc™'s alcohol-based extraction system.

Elsewhere, the company is continuing to advance equipment innovations that improve reliability and optimization in oilseed processing plants.

For example, Crown's Flexible Control Tray™ Oil Stripper maximizes active tray areas while reducing the risk of fouling and plugging that can lead to costly shutdowns.

Initially focused on stripping hexane from crude oil, the technology is expanding into additional applications where improved stripping performance, uptime, and energy efficiency are priorities.

"Compared with conventional disc-and-donut style systems, it can deliver a 35 percent or greater reduction in energy requirements while maintaining or improving residual hexane performance, and its adjustable orifice layout provides flexibility across different plant conditions and operational rates," details Danelich.

With customers looking to purify and pretreat renewable oil feedstocks for sustainable aviation fuel and renewable diesel production, CPM|Crown's projects demonstrate how it is positioning its technologies to support both conventional oilseed processors and emerging renewable fuel markets.

EXCITING NEW ERA

Looking ahead, Rosebank Industries' recent acquisition of CPM marks an important new chapter for the company, bringing a renewed focus on long-term growth, commercial discipline, and the customer experience across the full plant lifecycle.

"As CPM becomes part of Rosebank Industries, the transition is an opportunity to strengthen its core commitments. The coming year will be defined by a clearer emphasis on helping customers maximize the value of their equipment well beyond the original sale with practical support that keeps their operations running confidently, reliably, and efficiently," says Kris Knudson, President.

The acquisition will be most visible in the company's aftermarket support – comprising service, parts, components, technical expertise, rapid downtime response, and refurbishment – which will lead to clearer processes, stronger parts planning, and reduced lead times.

Utilizing Rosebank Industries' resources, CPM will strengthen its delivery across key markets by combining local expertise with its broader engineering, technology, and technical network to help customers extend equipment life, improve uptime, and reduce unplanned downtime.

Customers will also benefit from a stronger CPM that has a greater ability to support equipment performance over time. The organization's future priorities are aimed at extending equipment life, improving uptime, and delivering more predictable support through better processes and planning.

"With Rosebank Industries' backing, CPM is positioned to combine commercial focus, local service, global resources, and technical expertise in a way that reinforces its commitment to long-term customer value," Danelich concludes.

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