



314 Pure Cannabis president and chief executive officer Clayton Duguid (left) and Paxiom Group's customer service manager Mark Conforti strike a happy pose alongside some of the high-quality cannabis products produced by the fast-growing craft cannabis producer in Crossfield, Alta.

PURE INTENTIONS

Packaging automation helps enterprising craft cannabis producer respond to unfolding new market trends in real time

By George Guidoni, Editor

Photos By Asim Overstands

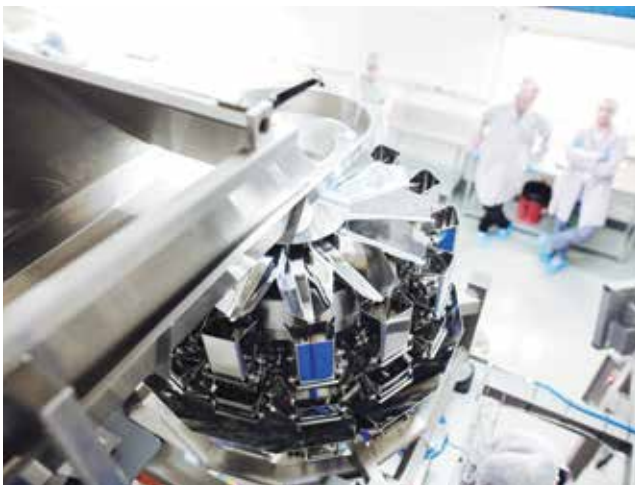
For a young and disruptive market like recreational cannabis, there are undoubtedly countless twists and turns to come before the nascent industry starts resembling other mainstream CPG (consumer packaged goods) sectors in terms of market maturity, pecking order and broader public acceptance.

But if the early trends are anything to go by, being an early bird in terms of product quality and manufacturing competence is a win-win recipe that has already helped companies like **314 Pure Cannabis** put themselves on the map with supreme confidence and style well

befitting a \$2.6-billion industry with enormous growth potential.

Started up in 2019 a short drive north of Calgary in Crossfield, Alta., the privately owned company is a licensed craft cannabis producer using proprietary hydroponic growing and cultivation methods to produce high-quality flower cannabis products retailed through government-approved cannabis dispensaries across western Canada and Ontario.

Currently operating out of a custom-built, 42,500-square-foot facility designed to meet all the pertinent **Health Canada** regulations and to comply with the **EU GMP (Good Manufacturing Practices)** standards, the Crossfield operation houses five state-of-the-art flower rooms



to grow eight core strains of high-quality marijuana buds, with current capacity to produce 2,000 kilograms of finished product—retailed in flexible resealable pouches or as pre-rolled filtered cones (joints) that are sold individually or in multipacks of five or 10 cones per box.

“Our output is actually much higher than 2,000 kilograms, which means we still rely on many of our LP partners in the area for supply,” says 314 Pure president and chief executive officer Clayton Duguid, a former building industry professional who was drawn to the budding cannabis business soon after the federal government announced its intention to

Clockwise from left
Stand-up pouches with child-resistant closures used to package dry cannabis flower buds; the full turnkey bagging system anchored by WeighPack's Swifti Bagger Mini bagging machine; bulk cannabis flower being dispensed into PrimoCombi scale buckets.

legalize cannabis for recreational use, which finally happened in the October of 2019.

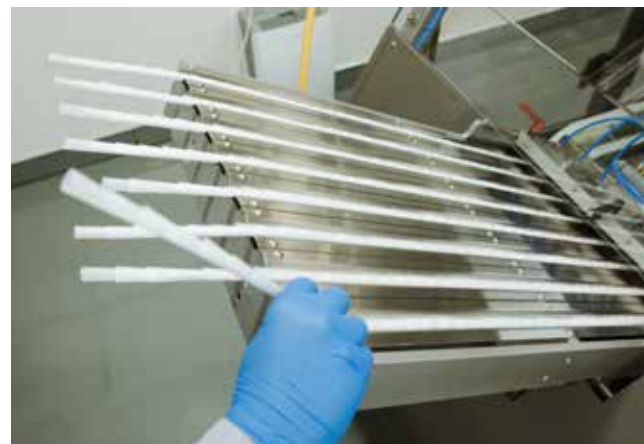
“I think the cannabis market is maturing, and the products are quickly evolving in quality today,” says Duguid, one of three company co-founders at the helm of a group of about 50 private investors contributing the all-important start-up capital to get the venture off the ground.

As Duguid explains, the recreational market has also matured quickly enough to become price-competitive, and in some instances less expensive, than cannabis sold on the black market—thereby delivering on one of the key arguments and justifications for the eventual passage of the historic *Bill C-45* legislation in November of 2018.

“Like many other people I used to be sceptical about marijuana ever becoming completely legal in Canada,” Duguid remarks, “but once it became a key election promise and then a real government policy, it presents an attractive business opportunity for many people across the country, and especially here in Alberta.”

To differentiate itself from the competition, the company worked with branding services group **Blackwater Design and Marketing** to incorporate the number 314 into the brand name as a playful nod to the molecular weight of the principal psychoactive cannabis ingredient *THC* (*Tetrahydrocannabinol*), which is technic-

“Like many other people I used to be sceptical about marijuana ever becoming completely legal in Canada.”



Clockwise from left
A plant employee preparing to load pre-made pouches onto the Swifty Bagger Mini machine; machine operator loading pre-made paper cones onto the front end of the eight-channel JuanaRoll machine; rows of bulk Futurolla pre-made paper cones taken out of the box for loading the JuanaRoll machine.

ally defined as *314.469 g/mol*.

“We definitely wanted to use the word “pure” in our company name,” Duguid reflects, “but it was just too generic to stand up on its own, so adding 314 was a nice piece of branding to position ourselves as a craft cannabis producer.”

As Duguid explains, craft cannabis production differs significantly from mass-scale harvesting by providing individual plants with much more physical space and time to reach full maturity and optimal THC content, resulting in superior buds.

“We grow 176 plants in a 2,600-square-foot grow-room, whereas a typical large-scale factory would grow 3,000 to 4,000 plants in similar space,” Duguid explains.

“Also we let our plant grow their full height of six to eight feet, and we monitor each plant all the time, letting them fully grow and flower in vegetative state until they’re ready to harvest.”

According to Duguid, this extra care, attention and patience results in

high-quality buds, of various targeted potencies, which the company markets under three main core brands, including:

- **Poolboy**, described as a fun value brand with 16- to 24 percent THC content;
- **314Pure Premium**, a premium-quality product with 26- to 30-percent THC content;
- **Dad Hash**, high-purity cannabis extracts with 45- to 50-percent THC content.

With its product portfolio currently comprising 17 SKU (stock-keeping units), 314 Pure Cannabis is exceptionally well positioned to keep expanding in tune with the growing market for recreational cannabis, according to Duguid.

In fact, the company has recently commenced a 60,000-square-foot plant expansion at the 16-acre site that will eventually house another 270,000 square feet of production space—raising its annual manufacturing capacity to over 35,000 kilograms.

In the meantime, however, Duguid and his production team are focusing on optimizing and automating the company’s packaging operations in order to support the expected growth in volumes with a highly efficient process geared to ensure optimal product protection, consumer convenience, and high throughput speeds.

To achieve these goals, 314 Pure has formed a close business relationship with Montreal-based packaging machinery specialists **WeighPack Systems Inc.** and the **Paxiom Group**.

In early 2020, WeighPack supplied the 314 Pure operation with a turnkey packaging solution—comprising a **Swifty Bagger Mini** bagging machine, a **PrimoCombi** multihead weighing scale, and an automatic **WeightCheQ** checkweigher—to completely automate the process of filling pre-made pouches with 3.5- and seven-gram portions of dried flower, which was at the time all done by hand.

Designed specifically for processing compact bag sizes, the **Swifty Bagger Mini** stand-up pouch filling and sealing machine opens, fills and seals a variety of pre-made resalable stand-up pouches.

Occupying less than 10 square feet of space, the **Mini** bagger is constructed



Housed in a separate temperature-controlled cleanroom within the Crossfield facility, the JuanaRoll machine is equipped with the latest automation technologies, including the touchscreen HMI (human-machine interface) terminal above, to enable the machine to run with only two operators.

with stainless steel and is designed for easy service and maintenance.

Manufactured at WeighPack's state-of-the-art 70,000-square-foot production facility in Montreal, the machine's adjustable bag magazine provides consistent bag feeding to ensure that the pre-made pouches enter the machine perfectly square—resulting in strong, high-quality seals.

The *Swiftly Bagger Mini* installed at the Crossfield plant is integrated with the *PrimoCombi* multihead weigh scale positioned directly above the Mini bagger, dispensing precise amounts of dried

flower buds from its 14 0.5-liter buckets to the bagger below.

Once the *PrimoCombi* scale is filled with bulk product at the center, it starts to vibrate to loosen the buds from the center cone to the individual vibratory feeder pans. These feeder pans transport product to the weigh buckets to be weighed and measured.

Once weighed, the *PrimoCombi* determines which buckets equal a near-perfect match, locks them in, and then triggers the buckets to dispense at the same time to the *Swiftly Bagger Mini* machine below.

Accurate to within 0.01-gram of target

weight, as verified by the integrated *WeightCheQ* checkweigher positioned in the center of the bagger, the programmable *PrimoCombi* scale allows 314 Pure to use the same pre-made bags for packaging both 3.5-gram and seven-gram portions, simultaneously if required, to provide invaluable operational flexibility.

"The WeighPack machines have allowed us to package our product in 3.5- and seven-gram bags flawlessly," Duguid states. "It uses suction cups to open the bag and insert 3.5 grams of product inside, seal the bag and spit it out ... all we have to do then is tax-stamp the bag."



Featuring a unique inline design, the eight-channel JuanaRoll installed at the Crossfield plant can produce up to 50 pre-rolled cones of uniform size and weight in one single pass whereby the machine automatically fills, compacts, tamps, twists, trims and ejects the finished pre-roll into the plastic basket below at the machine's back end.

“We do approximately 15 bags a minute with this machine,” says Duguid. “It’s very easy to use, it’s very interchangeable, and it’s easy to adapt.”

“It’s built to do different things, so it can be easily scaled up for use on a bottling line, or for bigger-sized bags. It is very flexible.”

In similar vein, Duguid is quick to praise the exacting accuracy of the *PrimoCombi*’s scale, along with the real-time status report the system displays on three large screens via its HMI (human-machine interface) to ensure optimal filling accuracy each step of the way.

As Duguid explains: “The *PrimoCombi* uses three bright big digital screens: the digital mode, which displays the target weight that was just dispensed; the graphic mode that uses a color scheme to show the operator one status; and the camera mode, which displays the product coming through.”

Adds Duguid: “Another great feature of the *PrimoCombi* HMI is the Cycle History function, which displays the target weight, the actual weight dispensed, and how many (bucket) heads were used to complete the cycle.”

As Duguid points out, unerring weight accuracy is a vitally important pre-requisite for the 314 Pure operation, which also double-checks the weight of every 100th

bag coming off the bagging machine to ensure the weight falls within the five- or 10-percent tolerance limits as required by provincial and federal authorities.

While automating the plant’s bagging line was a massively important accomplishment for the 314 Pure Cannabis operation, it soon became apparent to company management that the recreational market has been rapidly changing in terms of growing consumer preference for pre-rolled, ready-to-smoke filtered cones (joints), at the expense of dry flower buds they would have to roll up themselves.

“When our company started out about 80 per cent of the product we were shipping out was dried flower,” Duguid relates.

“But we have seen rapid maturity in the market, with customers pushing for high-quality pre-rolls, and we needed respond to this trend quickly,” he explains.

“So we turned to Paxiom again to help us pivot a lot of our SKUs into the high-quality pre-rolled segment of the market, to see if they had a machine that could do it at large volumes.”

Also manufactured by WeighPack in Montreal, the highly innovative *JuanaRoll* automatic pre-roll machine turned out to be the perfect solution for 314 Pure, which took time to evaluate many other



pre-roll machine options available on the market.

Already in operation at many of the best-known cannabis brands in the world, several large LP producers across North America, the *JuanaRoll* was developed as an automated solution to replace manual hand-rolling, which is said to be one of the most labour-intensive and time-consuming manual processes keeping many LPs (licensed producers) from achieving adequate productivity levels they need to compete.

Available in four-, six- and eight-channel configurations, the high-speed *JuanaRoll* machine features an easy-to-load cone magazine, an integrated *PreCheQ* checkweigher, and special stations for compacting, tamping and twisting/trimming, along with value-added standard features such as no-cone/no-fill detection, cone-open camera vision system, and free online technical support.

For Duguid, who traveled to the WeighPack factory to see the machine in real-life demonstration, the speed and accuracy attributes offered by the *JuanaRoll* machine far outweighed the significant cost of the initial investment.

“It really is the Rolls Royce of all the pre-roll machines out there,” says Duguid, adding the *JuanaRoll* machine has worked flawlessly at the 314 Pure plant since coming online this past January, producing tens of thousands of uniform half-gram pre-rolled cones with virtually negligible deviations in target weight.

“It has enabled us to reassign 20 people to other more productive tasks at the plant,” says Duguid, citing the machine’s high-end craftsmanship that enables it to work with bulk ground cannabis of different levels of moisture and stickiness.

“We can do 50 pre-rolls a minute on this machine,” Duguid extols, “which is just fantastic.

“But the really big thing for us is that we are able to use real flower that we grind down to desired size; we do not use any ‘shake’ product.

“Being able to put that sticky real flower product through the machine enables us to produce a higher-quality product for our customers,” Duguid says.

“There are many different strains of cannabis out there that all react differently when being processed..

“There are also external factors, like temperature and humidity, which also have an effect on the product composition.

“But we have found a way to make the *JuanaRoll* machine account for all these variables,” Duguid says, “and that was one of the key selling features for 314 Pure Cannabis.”

As Duguid recalls, “When we were investigating the pre-roll machines in the market we noticed that the definitely a



Clockwise from left Pre-rolled cones undergo the final visual inception by 314 Pure Cannabis staff while being counted and grouped for packing inside rigid plastic containers containing fire of 10 cones each; Clayton Duguid checking up on the blossoming buds inside of the company's five indoor grow-rooms; Duguid displays some of the company's bestselling SKUs (stock-keeping units) produced at the Crossfield facility.



lot of a lot of supply out there.

“But when we got to WeighPack, we were really impressed by the quality of manufacturing that goes into their machines,” he says.

“Being all about product quality ourselves, that was enough for us to pull the trigger on buying this machine.”

Duguid says that adding the *JuanaRoll* machine has had a profound impact on the company’s product portfolio by making pre-rolled cones—sold individually on in five-pack and 10-pack rigid plastic containers—its bestselling product type by far.

“Pre-rolls now account for about 80 per cent of our production,” he says,

“with bags at about 10 per cent and extracts for the remaining 10 per cent.

“That is just the way the market is going right now: consumer want the on-the-go convenience and mobility that pre-rolls offer,” he states.

“An as the market continues to evolve in this direction,” he concludes, “we look forward to work with Paxiom to continue to grow and expand our brand s across Canada to become one of the leaders in the craft cannabis market.”

SUPPLIERS

WeighPack Systems Inc.
Paxiom Group



Please see a video of the WeighPack equipment in action at the 314 Pure Cannabis processing plant in Crossfield, Alta., on Canadian Packaging TV at: www.canadianpackaging.com