BROCHURE

How brewers can use tech to plan around tank resource constraints

Infor Production Scheduling

No matter the size of the brewery operation, there is no way to get around the importance of scheduling tanks efficiently. Each stage of the brewing process is time-sensitive and must be properly scheduled to maintain proper specifications for beer recipes and to prevent late or unfulfilled delivery orders.

Large-scale brewers, or macro-brewers, who produce millions of hectoliters of beer annually, use dedicated tanks for maturation, storage, and filtration—but these tanks must be emptied and cleaned for the next batch to come through the brewing process.

Micro-brewers, or craft brewers, who produce six million barrels of beer (or less) annually, may only have one or two tanks in their breweries, which makes tank scheduling critical. These tanks must be used universally for all stages of production. The challenge for micro-breweries is to make sure they have the right tank available when it is needed downstream (such as for filtered beer).

How Infor Production Scheduling can help

For breweries of all sizes, efficiently scheduling tanks creates a challenging manufacturing environment where everything from variable flow rates and floating bottlenecks to constraints around fermentation, maturation, product-dependent filtration, and filling are practically impossible to optimize while using only manual methods.

Infor Production Scheduling is a constraint-based scheduling software solution that addresses the brewing industry's unique challenge of managing the capacity of brewery tanks—and the flow of product between them. It enables brewers to automatically create the optimal production schedule in the most efficient, timely, and profitable manner to keep their operations free from bottlenecks.

Plan for success with Infor Production Scheduling:

- **Optimize tank schedules**—Adjust tank schedules on a minute's notice with automated optimization techniques and drag and drop capabilities on an intuitive graphical Gantt chart planning board.
- **Gain visibility into schedules**—Create personalized views of tank schedules targeted toward specific production operations to improve communications and collaboration.
- **Synchronize brewing processes**—Ensure tanks are scheduled so they are ready for bottling or kegging exactly when production is finished to maximize available shelf life and reduce temporary tank storage that could upset future production.
- **Manage co-products and by-products**—Navigate the complex interdependencies of products for mix, blend, brew, cook, react, or yeast management processes that are completed in tanks. Manage all materials used in these production processes.

Infor Production Scheduling can help brewers streamline their manufacturing operations. This eases the strain on complex batch production processes, so customer orders are delivered on time and creates a more efficient and profitable business.

With Infor Production Scheduling, brewers can:

- **Manage tank-scheduling times**—Brewers cannot start a beer unless they have a plan to complete it. Each fermentation tank in a brewery has a minimum number of hours that the product must remain in the tank, which may extend to several weeks. Once fermented, a product must be filtered off so it can head to the filling stage. Every mature beer and bright beer storage tank (where beer is conditioned) has a maximum standing time and in some cases a minimum. Infor Production Scheduling can automatically create the optimal production schedule that adheres to all minimum and maximum standing times—so the right tanks are replenished or depleted on schedule.
- **Schedule tanks**—A tank is not a storage location like a warehouse bin with a set capacity. A tank can only store one product at a time, so the time to fill a tank is determined by the rate(s) of the process that are producing the inflow of product into the tank. And the time to empty a tank is determined by the rate(s) of the process that consume the outflow of product or waste removed from the tank. To alter a tank, start time and adjust production schedules, a planner needs to alter the first production process. Infor Production Scheduling defines tanks as a special concept that links producing and consuming processes. That way the right tank is always available when it is needed—giving the planner full visibility into how and when each tank is being used.
- **Account for tanks of different sizes**—A brewery has many tanks of varying sizes. An 800hl tank with 1hl of product, for example, and an 800hl tank with 800hl of product both have zero free capacity for use with a different beer. The correct product must be stored in the correct-size tank. When stored in a tank, beer needs "headspace" to help condition the beer. For example, a 700hl batch of a specific beer requires 200hl of headspace and will not fit into an 800hl tank. Yet a 700hl batch of a different type of beer requires only 50hl of headspace and will fit into an 800hl tank. Infor Production Scheduling can automatically allocate the correct product to the correct tank to ensure that headspace rules are met, and tanks are being used properly. With Infor Production Scheduling, brewers can automatically allocate the right product to the right tanks, adhering to minimum and maximum volumes.
- **Schedule inter-tank flows**—Not every tank is physically connected to every other resource in a brewery. Routing and plumbing constraints could exist. For example, the pipes that connect tanks to each other—or to other resources—help direct the flow of a liquid source to a liquid destination. Pipes also create constraints—perhaps only certain materials can flow through certain pipes. Or, because of the size of a brewery, connecting every tank with every necessary resource might not be physically possible. With Infor Production Scheduling, brewers can automatically allocate the product flow across the entire factory to enforce the constraints defined with tank-flow relationships.

- **Schedule tank tops and transfers**—It is inevitable that a brewery will have out-of-spec tanks. These batches will require a process to merge and top-up to bring the beer into spec. An out-of-spec tank might be prevented from providing inflow to further downstream processes. It may, however, be merged, transferred, wasted, or topped-up. To keep out-of-spec tanks from creating bottlenecks further down the line, Infor Production Scheduling accounts for out-of-spec tanks by providing the definition of merge and top-up rules. Meaning: Beer A and Beer B can be merged into Beer A.
- **Schedule clean in place (CIP) planning**—In brewing, a CIP may occur based on throughput of a product attribute. For example, a filter may need to be cleaned after 18 hours of a low-hopped beer, but only after 6 hours of a high-hopped beer (or 12 hours if there has been a combination of both). The CIP must be enforced, otherwise effective capacity is inaccurate. Infor Production Scheduling can automatically create the optimal CIP processes, while minimizing non-productive time to keep production on schedule.

How you benefit

Large-scale brewers and micro-brewers alike can manage the capacity of their brewery tanks—and the flow of product between them with Infor Production Scheduling. This scheduling solution allows for easy adjustments to brewery tanks to accommodate, prepare, plan, and schedule the right changes at the right time for proper flow of product all the way from wort preparation to bottling, kegging, and distribution. Infor Production Scheduling gives brewers the tools to automatically create the optimal production schedule for each batch of beer that they brew and manage these schedules, so each tank is used efficiently and profitably.

Customer success

Japanese Kirin Brewery produces and distributes about 800 types of beer and alcohols spanning 60 brands. With Infor Production Scheduling, they can now quickly develop independent, day-by-day plans at its headquarters, for all their factories. Also, Infor Supply Planning empowers the company to create more accurate and optimized demand and supply plans that are integrated with the seasonal demand changes of each product. This puts the necessary resources to work to avoid missed sales from stock-outs—without having to hold large amounts of excess inventory and sacrifice product freshness.

Another leading beer brewery that's an Infor client was able to eliminate a tank per week in one of their first factories that went live with Infor Production Scheduling. This is saving millions of dollars, which will increase enormously when rolled out globally. Other outcomes are optimized timing between brewing and bottling to minimize idle packaging lines, reduced changeovers on the packaging lines, and lower finished product inventory freeing up warehouse capacity.

Why Infor?

With Infor Production Scheduling, all sizes of brewers from large-scale global brands to micro-brewers can automatically optimize and manage their production schedules to improve the way each tank is utilized—and ultimately the way the end product tastes.

LEARN MORE

Follow us:

641 Avenue of the Americas, New York, NY 10011

INF-2740849-en-US-0622-1