

Applebee's Stays A Step Ahead

Investigation of a second-generation disposable grease removal device for exhaust hoods.



By Joe Salpietra

*Director,
Ellis Fibre USA*



Constantly managing and improving facility operations is critical to any company's ability to compete effectively. Success in today's markets depends on the ability to balance a stream of new products and processes to stay competitive. Successful restaurant operators are constantly evaluating every area of operations to ensure that productivity and cost objectives are realistic and attainable.

Recently, one of the largest franchisees in the Applebee's Restaurant organization, Apple American Group ("AAG") investigated new technology to evaluate how it might benefit their restaurant operations.

THE SITUATION: GREASE IN THE KITCHEN EXHAUST SYSTEM

Managing grease in kitchen exhaust systems can be challenging for any restaurant operator. Until recently, the only products available attempted to deal with grease in the exhaust system after the grease had entered the ducts. The traditional listed metal baffle grease filter is not very effective at stopping the grease particulates that enter into the exhaust system. Metal baffle grease filters and other exhaust filtration systems that attempt to assist with reducing grease accumulation in the exhaust system — such as UV systems, waterwash hood systems, rooftop ESPs, etc. — all try to deal with the grease after it has already entered the exhaust system.

However, these alternative systems can be very costly to purchase, moderately effective and they still require the same or even more intense nightly cleaning practices. The result of using



Typical extractor, 3 months since prior cleaning. Notice the accumulation of grease liquids in the bottom of the extractor.



Another typical extractor with overflow discharge, 3 months since prior cleaning. Notice the overflow has spilled onto the roof area around the extractor.

many of these systems is a significant increase in the cost drivers, such as labor, water consumption, chemical usage, etc., which has made these alternatives not very widely used in the marketplace.

Today, a second-generation disposable grease removal device (“DGRD”) is available to restaurant operators. Recently, AAG tested a DGRD to determine the potential impact on its operating and fire safety practices, as well as the financial impact.

A LITTLE BACKGROUND

Most local and state regulatory codes require that exhaust systems must be routinely inspected. If, upon inspection, they are found to be dirty, then they must be cleaned. The result is usually a costly hood cleaning being performed at least quarterly because there has been no widespread implementation of any system that successfully prevented grease from entering into the exhaust system. In high-volume restaurants or those cooking over solid fuel, exhaust system cleaning may be required monthly or even multiple times per month. This process of cleaning the exhaust system typically occurs late at night,

requiring the restaurant to either let a third-party cleaning service enter the building without an employee on-site or pay for an employee to remain throughout the cleaning process. Either option is not particularly attractive to the manager. Additionally, the cleaning process is often disruptive to facility operations due to cooking equipment being moved around, pilot lights going out, equipment getting wet from the cleaning process, grease being tracked across the roof, etc. Also, because the work is usually done late at night, on the roof or inside the ducts, it is difficult to confirm how effective the cleaning process was at actually removing the buildup of greasy effluent from inside the extraction system. For these reasons, many operators implement many additional exhaust system cleaning activities in an attempt to keep the exhaust systems cleaner for longer periods of time so that the third-party cleanings are not required more frequently. The AAG, like many multi-unit operators, have specific activities for maintaining the kitchen exhaust system. (see Table 1) These activities result in a significant expense for the restaurant when all costs are truly evaluated.

The Southern California and Nevada Region of Apple American Group, led by Market President Mike Hebert, recognized that the total costs of the exhaust system cleaning and maintenance procedures, as required by AAG operating policy, was dramatically more than just the cost of a quarterly third-party hood cleaning invoice. In fact, when all costs were factored into the analysis, total costs of maintaining the exhaust hood easily exceeded \$6,500 annually, per restaurant (see Table 2). What further concerned Hebert and his team was that even with the comprehensive nightly hood-cleaning regimen as required by AAG, the fact remained that none of the processes worked to proactively prevent or reduce the amount of grease effluent entering the extraction system. Therefore, with significant grease effluent still entering the exhaust hood and ducts daily, fire risk associated with greasy buildup was still an ongoing concern and total hood maintenance costs were high.

In an attempt to significantly reduce the amount of grease effluent that enters the extraction system, Hebert authorized an investigation into



Applebee's Murrieta, California, extractor with the new system, 6 months since prior cleaning.

Notice the bottom of the extractor has only a light film of grease effluent, and there is no accumulation of liquid grease in the bottom of the extractor.

the benefits of DGRDs (see Table 3). For the investigation, AAG selected a second-generation DGRD that incorporates a proprietary blend of natural fibers with a disposable internal stabilizer frame. When installed in an exhaust hood, DGRDs claim to significantly reduce the amount of grease that enters the exhaust system while also providing safety, operational, financial and environmental benefits (see Table 3).

THE INVESTIGATION

The Applebee's restaurant in Murrieta, California, was selected for installation of the grease removal system. Area Director Damasio Alvarez and General Manager Loretta Cochneuer were responsible for overseeing the investigation and reporting the results to Market President Mike Hebert.

To begin the investigation, the current processes employed by Applebee's were monitored to determine the actual operational and financial

impact of the activities (see Tables 1 and 2).

The exhaust hood at the Murrieta location consisted of two hoods sections located side-by-side. The listed metal baffle grease filters that were used prior to the installation of the DGRD were specialty centrifugal filters. They were all in poor condition and it was time for replacement. A basic UL listed baffle-type grease filter was used for the replacement. One hood section was 120 inches wide and the other section was 132 inches wide. One technician completed the DGRD installation process in less than 3 hours. The disposable replacement grease filters are all a standard 20-inch width and the installation at Murrieta contained a total of 12 disposable filters placed across the face of the hood aperture. (Note: The DGRD is installed upstream or in front of the existing metal grease filters. The traditional listed metal grease filters remain installed in the hood system.)

Because the DGRD is positioned upstream of the exhaust system, it can capture the grease particulates prior to them reaching the metal filters or entering the exhaust system. This is extremely important because

the result of capturing grease particulates prior to them ever reaching the listed metal grease filters can result in a significant reduction in water consumption and the frequency of the nightly cleaning of the metal baffle grease filters. In fact, during the investigation, the cleaning of the metal baffle grease filters was reduced from every night to only once per month.

The overall cost/benefit analysis of the new system at the Apple American Group reflects an expected savings of over \$2,000/per store annually and a 100% return on investment (ROI) in less than 3 months. This is a total savings of over \$400,000 annually for the approximate 200 Apple American Group franchise locations.

SUSTAINABILITY

The AAG is very proud of the steps it has taken to promote sustainability within its restaurants and implementing the use of a DGRD fits well with their goals in this area.

While the benefits of using DGRDs include many things that have a direct cost savings or safety impact, they are also very earth-friendly. DGRDs are generally all-natural, sustainable products that are 100%



Applebee's Murrieta extractor with the new system, 6 months since prior cleaning. Notice there is no overflow 6 months after prior cleaning — the roof area around the extractor remains grease free.

TABLE 1
SOME OF APPLEBEE'S TYPICAL EXHAUST SYSTEM MAINTENANCE ACTIVITIES

- Nightly removal and cleaning of all listed baffle grease filters.
- Nightly wipe-down of the interior of the hood canopy.
- Nightly cleaning of area behind the listed baffle grease filters.
- Quarterly third-party exhaust system cleaning.

TABLE 2
AAG COST DRIVERS RELATED TO HOOD CLEANING & MAINTENANCE ACTIVITIES

- Third-party hood cleaning (4 times per year).
- Labor costs associated with nightly hood cleaning activities.
- Water consumption from nightly hood cleaning activities.
- Water consumption during quarterly hood cleaning activities.
- Degreaser/chemicals used during nightly hood cleaning activities.
- Electricity used to heat water used for nightly hood cleaning activities.
- Increased risk of workers comp injuries related to nightly hood cleaning.
- Increased roof maintenance due to roof traffic associated with hood cleaning.

TABLE 3
BENEFITS OF USING SECOND-GENERATION DGRD

- Reduces water consumption.
- Reduces risk of fire in the kitchen exhaust system.
- Cleaner air emissions to atmosphere.
- Cleaner water discharge to municipal waste system.
- Reduces risk of employee injuries.
- Saves energy.
- Reduces roof maintenance.
- Saves money.

biodegradable. Perhaps the strongest green benefit of using DGRDs is the significant decreased water consumption as well as cleaner exhaust air being discharged into the atmosphere. Also, with less baffle filter cleanings being required to manage your hood, the grease being discharged down the drain into the municipal waste water system is dramatically reduced which could also reduce the frequency of pumping grease traps.


Any organization interested in promoting sustainable initiatives will be very happy using a DGRD. The investigation by AAG indicated a reduction in water consumption of over 12,500 gallons, annually, per location. If implemented throughout the 1,950 Applebee's restaurants, the reduction in water usage would be over 24.4 million gallons of water, annually!

CONCLUSION

"Aside from the obvious financial savings and operation benefits, the peace of mind that comes with knowing that your exhaust system is much cleaner year-around is invaluable," says Damasio Alvarez, AAG area director. "How do you put a price on peace of mind? As a multi-unit operator, knowing that all locations are obtaining the consistent benefit of cleaner ducts year-around is important."

Loretta Cochneuer — the AAG general manager who was directly responsible for overseeing the investigation at the Murrieta location — was asked to discuss her thoughts on how the system performed. "The night staff is much happier not having to remove and clean the metal baffle filters every night," she says. "But, most of all, the system saves me money on the bottom line and it is much easier than our prior practices with better performance."

In summary, the investigation by the Southern California and Nevada Region of AAG has confirmed that the benefits promoted in Table 3 are realized when the DGRDs are installed. In fact, after 3 months of investigation, Mike Hebert ordered the installation of the DGRDs in all Applebee's locations within the region.

Are you staying a step ahead? Have you examined the true cost of your exhaust system cleaning and maintenance process? Look into the new, second-generation disposable grease removal devices to stay a step ahead! 

Joe Salpietra, director, Ellis Fibre USA, has more than 20 years of experience serving the food service industry. He can be reached at (318) 560-7417 or joe.salpietra@ellisfibreUSA.com. Visit Ellis Fibre USA at Booth #122 at RFMA 2010.