

## ROL-LAND FARMS

**MUSHROOM OPERATOR REDUCED LAGOON ODORS BY  
99% AND SAVED \$180,000**



**SAR™ Aerator at Rol-Land Farms Lagoon**



**Showing Shore-mounted SAR™ Aerator**

### Background

Rol-land Farms is the largest single mushroom producer in North America. Rol-Land ships 18,200 tons of mushrooms a year and does over \$50M in revenue per year. The Rol-Land Campbellville facility has a 400,000 gallon contaminated water lagoon that is recycled at approximately 25,000 to 50,000 gallons/day.

The contaminated water consists of manure pile run-off water (goodie water) which is used to moisturize the compost piles which are the growing medium for mushrooms. This water has odor challenges as all the oxygen in the water has been used up by the organic matter in the composting process

### Challenge

The foul odour emanating from the mushroom facility had become a major issue for Rol-Land. Complaints came from neighbouring residents and business owners. Local industry relies heavily on the tourist clientele to support and sustain their businesses particularly in the summer months. It is during those hot summer days when the level of odour is at the greatest – the same time that the tourist industry is at the greatest.

A lagoon of this size and retention time would normally use traditional aerators at between 20 and 25 horsepower (hp). The picture on the left below shows the lagoon when it was using a 7hp Venturi style aerator. It was clearly inadequate and the lagoon gave off a very bad odour.

# HPM



**Lagoon before SAR™ Aeration**



**1 month after installation of a SAR™ 250gpm Aerator Solution**

## Solution

Rol-Land installed Hydro's 250 GPM Aerator in a couple of hours. Within a day a bacteria laden Froth Cap was created and within a month all of the residual bio-solids had been consumed. The Froth Cap reduced odors by 99%. The picture above on the right is the same lagoon 1 month after installation of Hydro's Aerator.

The cost of operation of electricity in recent history had been approximately 0.15 cents per kilowatt hour, which translates to approximately \$1,300 per hp per year to operate. The combined hp (blower and pump) of the Hydro's Aerator operates at an average of 6hp. The cost of operating the failed Venturi aerator at 7hp was then \$9,100 per year (\$1,300 x 7hp). A lagoon of this size and contamination would, in the past, have required an aerator of between 20 and 25 hp to supply enough oxygen to keep it from giving off bad odours. To have installed a traditional 20 to 25hp aerator would have cost Rol-land between \$26,000 and \$32,500 per year in electrical costs alone. Hydro's Aerator at 6hp, costs \$7,800 per year to operate.

Maintenance costs were also reduced significantly. Although maintenance is required on all motors, the ease of access to Hydro's shore-located Aerator saves hours by maintenance crews. There is no "fishing" an aerator out from the centre of the lagoon and then manoeuvring it back into position as is done with traditional aerators.

Based on quarterly maintenance, traditional aerators take approximately 32 man-hours annually at \$35 per hour plus a backhoe at \$150 per hour to check and change bearings. This totals \$5,320 per year. When compared to the 8 hours annually required to access Hydro's shore-mounted Aerator, at a cost of \$280, there is a saving of \$5,040 annually.

## Results:

Rol-land Farms purchased Hydro's Aerator in 2007. In doing so, over the following 6 year period they have saved between \$110,000 and \$148,000 in electrical energy costs and \$30,240 in maintenance costs. This same unit is still in operation yielding ongoing savings of \$29,740/yr. compared to their previous Aeration solution.

ROI: The cost of a SAR™ Aerator is \$39,500. At a savings of \$29,740 the ROI of the unit is 1.3 years.

In 2009, Rol-Land Farms, Campbellville site, was sold to Monaghan's Mushrooms, based out of Ireland. In 2010, Monaghan's purchased two of Hydro's 250gpm Aerators for their operations in Ireland.

In 2012, the Rol-Land Farms Leamington mushroom facility purchased another of Hydro's 250gpm Aerator to replace their floating aerators which were constantly wearing out bearings and required a back-hoe as described above, to maintain the floating aerators.