

The Greenhouse Business

Are Greenhouses the Best Workplaces?

Mohyuddin Mirza

Why is it, that some of the best information is found in doctor's offices or in newspapers left at the airports? Maybe it is that while waiting, we need to keep ourselves busy and any reading material we find appears to be of value.

This happens to me many times. Recently I found just one section of the Globe and Mail at the Toronto airport, while waiting to catch a plane to Edmonton. I had a lot of waiting time and was looking for something to read. All the newspapers from the stand were gone. I found this one section on a seat. I looked at the front page and I was intrigued to see a man holding a piece of paper in his hand reading "I love my job". At the bottom of the picture, it stated "50 best Workplaces in Canada". At the top of the picture it stated "Looking for a job with a top-rated employer, or perhaps a way to make your workplace more dynamic? Then look here. The results of the 2008 Great Place to Work Institute surveys are in."

My first thought was let me quickly see if a greenhouse company is among the top 50 workplaces. Maybe one of the larger greenhouse companies from Ontario or B.C. made it among the top 50 places. I could not find any greenhouse companies. Then, I found one food company and only two companies from Alberta.

While reading about the survey, I found an Alberta connection. Dr. Graham Lowe, a national workplace expert, professor emeritus at the University of Alberta, and partner at the Great Place to Work Institute Canada. I have heard him talking at many forums and enjoyed his insight into workplaces. One of the statements he made was "the best workplaces list data help us to differentiate between good and great organizations. On the qualitative side, the Culture Audit offers us insights into the people practices of very successful organizations that understand the strategic importance of culture."

One of the very insightful statements he made, and I agree totally, "It goes beyond offering the best perks", says Dr. Lowe. "You can't compete on perks and benefits alone. It comes down to the quality of relationships throughout the workplace, the support people are given to succeed in their jobs, and their overall enjoyment of the total work experience".

I am not a management expert, but having worked for the greenhouse industry for over 30 years, I find that most of the greenhouse companies are good employers, but are we great employers. During my visits to greenhouses, many times I drop in at lunch time and I find that the owners are eating with employees. The employer is sitting among the employees, eating and sharing jokes. I think that this behavior falls under the realm of creating a very friendly workplace. Many a times, barriers get created if employees think that employers only tell us what to do and issue the pay cheque. I think sitting together at lunch time with the employees creates a level of respect and understanding.

What's In this Issue?

- ◆ Are Greenhouses the Best Workplaces Pg. 1/2
- ◆ Growing the Margins Pg. 3-6
- ◆ Tomatoes Contaminated with Salmonella Pg 6
- ◆ Notes on Bedding Plant Pg. 7/8



(Continued on Pg 2)

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The Greenhouse Business

(Continued from Pg 1)

While you are eating with the employees, you don't talk about the business. You talk about the family, you talk about your childhood memories, you talk about the school you went to, you talk about day to day things which may not appear to be that important. I have a very nice colleague at work who always tells me that the best way to enhance relationships is to take your boss to lunch. Don't wait for the boss to ask you out for lunch—and during lunch, don't talk about business.

How to create credibility between the employers and employees is a challenge that cannot be created by simply saying "I am the boss and thou shall do whatever I tell you". In the article I am talking about, credibility has been defined as "the trustworthiness and competence of management". Of course, credibility can also be described as "you do whatever you say". Credibility is to practice what you preach. Credibility is created when there is forbearance. It is like your insurance company, that we will forgive your first accident to create credibility.

I think the challenge is to create workplaces where your employees love to come daily, take pride in stating that I work for such and such greenhouse and I love my job. The responsibility lies with both the employers and employees.

If I had to summarize the essence of this article I am talking about, I would say that when employees of three top companies were asked "Taking everything into account, I would say this is a great place to work". Employees who said yes were 100% and 98% and 95% respectively for D.L.G.G. Ltd., Environics Communications Inc and Nycomed Canada Inc.

Credibility, Respect, Fairness, Pride and Camaraderie were five qualities highlighted.

I would like to see many greenhouse companies among the best workplaces in Canada and in the world. This article mentioned, "If you don't see your workplace on the list of 50 Best this year, but think it should be, then why not sign up to participate in the 2009 list of 50 Best Workplaces in Canada? The nomination can be submitted online at www.greatplacetowork.ca



The Greenhouse Business

GROWING THE MARGINS: ENERGY, BIOPRODUCTS AND BYPRODUCTS FROM FARM AND FOOD SECTORS CONFERENCE & EXHIBITION

Nabi Chaudhary, Economics Unit, ARD

This conference was held at the London Convention Centre, London, Ontario on April 2-5, 2008. Attendance at the conference was well over 350 with representatives and speakers from Brazil, Canada, Germany, The Netherlands, Switzerland, UK and USA. Growing the Margins, provided an excellent opportunity to discuss and debate issues related to generate or conserve energy, produce new products and bio-products, and find new opportunities from the use of new products. Ontario government has committed \$9 million for the Ontario Biogas Systems Financial Assistance Program to help farmers and rural businesses install biogas systems in their operations and support development of the green energy sector.

Day One of the conference was set for Two Technology Tours. Tour 1 that I joined included visits to generation of biogas and use of biomass to generate power. Tour 2 consisted of visits to renewable energy mix – biogas, wind and solar energy facilities.

- First stop was at Cold Springs Farm. It is an integrated turkey production and processing operation with in-vessel composting system and marketing of 8 000 tonnes per year of finished product. Farm was established in 1948 and produces 110,000 Kg of turkey per year.
- Second stop was at Ruchurst Farms – a medium size greenhouse (two acres) partially heated by two hot air corn fuelled furnaces.
- Third stop was at the Finnie Distributing – animal feed and specialty animal feed ingredients from food processing products. This facility employs high-strength wastewater anaerobic digester to produce biogas.
- Our fourth stop was Suntastic Greenhouses – 30-acre greenhouse operation utilizing a wood-based biomass combustion system to provide heat. Heating costs for these greenhouses producing peppers and tomatoes have decreased by about 60 to 65 percent compared with natural gas use. Estimated pay back for investment to use biomass is about five to six years.
- Next stop was at Stanton Farms – a 2000 dairy cow and elite genetic farming operation recently relocated from outside London to Ilderton, Ontario, incorporating state-of-the-art farming practices for sustainable family farming, including a unique Andigen biogas system.

The group's final stop was the demonstration of the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) Anaerobic Digester Test Unit. This unit is completely mobile, pilot scale (2m³) anaerobic bio-digester designed for testing suitability of agricultural feedstocks for biogas production.

Keynote speakers from Canada, Europe and the US set the stage, addressing opportunities and challenges facing the farm and food processing sectors. Conference started with three plenary presentations on the Renewable Energy Future; Reaping the Benefits of Energy Conservation; and Successful Farm-Based Energy Systems in Ontario. One of the presentations emphasized that by-products and bio-products are the "treasures in the attics" and attempts must be made to develop new products to satisfy societal needs. By 2025, almost 25 percent of the total energy needs would come from renewable sources. US are spending \$1.2 billion dollars per day for importing crude oil. National security, economic viability and environmental pressures are the driving forces to develop alternative sources of energy.

(Continued on Page 4)

The Greenhouse Business

Ontario Power Authority (OPA) has set a goal to replace 80 percent of current generation capacity by 2025. Integrated Power System Plan is based on a 20 years outlook and is updated every three years. Ontario is planning to invest \$10 billion in energy conservation. Currently Ontario has 19 volunteer energy conservation programs and the target is reduction in peak-power use by 75 percent or 6,300 MW by 2020. Ontario is planning to phase out use of coal by 2014.

Ontario farms consume about two billion KWH at A cost of \$224 million per year. Audits show that 15 percent reduction can be achieved with minor adjustments. Inaugural Energy Conservation Week in Ontario is May 25 –31, 2008. Ontario is also introducing Smart Meters Program geared to charging by use of the day and decrease consumption during peak periods.

After the plenary presentations, participants were offered concurrent sessions covering a wide variety of topics: i) Opportunities in food processing; ii) Connecting to the grid; iii) Project financing, do's and don'ts; and iv) Energy crop feedstock 1, v) On-farm energy efficiency, vi) Byproducts to biogas, vii) Opportunities in the greenhouse, viii) Pursuing biogas opportunities, ix) Making sense of energy crops, x) By-products energy and beyond, xi) Opportunities for renewable fuel production, xii) Biogas feasibility studies, xiii) Financing renewable energy projects, xiv) Small scale wind and solar, etc. Following are the highlights of the conference:

- ◆ Research has shown that energy used in food plants can be reduced by 12 percent through initiatives in operating procedures, conservation and understanding how to better manage electricity consumption. This could amount to significant savings in operating costs. Government of Ontario has established an Independent Electricity System Operator (IESO) – a non-profit entity to manage the province's power system so that Ontarians receive power when and where they need it through the wholesale market by balancing demand against available supply.
- ◆ Biogas sector appears to be booming in Ontario due to strong agricultural backbone, substantial volumes of organic by-products as one of North America's largest food processing regions, and government support through incentives for renewable energy. StormFisher Biogas – a renewable energy utility is building three industrial-scale plants of 2.5 MW each in Ontario.
- ◆ The launch of the Ontario Power Authority's Renewable Standard Offer Program (RESOP) in November 2006 offered farmers the opportunity to generate and export electricity to the Ontario Grid. Farm based bio-gas generation offers a host of benefits including heat production, odour, pathogen and greenhouse gas reduction, improved fertilizer and water quality, and safer waste disposal.
- ◆ A two-year pilot project investigated the use of switch grass as a potential commercial pellet fuel in Ontario. When converted into a solid fuel for heating applications, it has a lifecycle energy output/input ratio of 14:1.
- ◆ Bioheat has proven to be the most efficient means to reduce GHG emissions. Switch grass pellets were found to offset 86-91% of emissions compared with coal, heating oil, natural gas or liquid natural gas. Each hectare of land used for production of switch grass pellets could offset 7.7 to 13.1 tonnes of CO₂ annually. In contrast, soybean biodiesel, corn ethanol and switch grass cellulosic ethanol could offset 0.9, 1.5 and 5.6 tonnes of CO₂/ha, respectively. Ontario has combined federal and provincial soybean biodiesel incentive of \$5.68/GJ (20 cents/L) and corn ethanol incentives of \$8.00/GJ (16.8 cents/L), resulting in offset costs of \$98 and \$379/tonne CO₂, respectively.

(Continued on Page 5)

The Greenhouse Business

(Continued from Page 4)

- ◆ Miscanthus is one of the crops with the greatest potential for biomass feedstock but not much work has been done on this in Canada. Other biomass feedstocks that should be considered are switch grass, willow, poplar, paulmonia, etc. Another presentation emphasized the use of residues like corn stover, corncob, switch grass pellets, whole canola, dried distillers grains, beans, flax chives and oat hull pellets for heat and power generation. Over \$125 million per year is spent on heating fuel in the Leamington area of Ontario.
- ◆ Ag-Energy Co-operative in Guelph is launching Energy Advisory Services to capture an estimated \$80 million in energy savings in the agriculture sector. It would be based on the completion of energy audits for greenhouses and energy reviews for non-greenhouses. This initiative is expected to provide a total solution to all farmers in Ontario in respect to energy conservation and efficiency. The savings approximate 20% of current energy consumption.
- ◆ Maize is one of the most used and preferred substrate for biogas production in Germany. Tested in different regions of the country, the new maize varieties called “energy maize” can yield over 26t MD/ha. The new maize varieties bred for higher biomass yield and cold tolerance are the most appropriate as “energy maize” varieties and can yield up to 9700 m³ methane per hectare land.
- ◆ A Sunarc insulating foam system was installed at a commercial greenhouse and monitored for energy use during the 2007 winter period. The night-time energy savings ranged from above 60% to below 10% depending on outdoor temperatures with greater savings occurring colder outdoor temperatures. Monthly average night-time energy savings resulted in values from February, March and April 2007 of 46.6, 42, and 33.3%, respectively.
- ◆ Alberta’s experiment to produce greenhouse vegetables (mini and long English cucumbers) commercially during the winter months using supplemental lights has been very successful.
- ◆ Western Canada is the home of significant canola and oilseed production. This region is most appropriate to develop biodiesel production technology. This area has the potential to produce community-based biodiesel in the range of 4 to 10 million litres per year.
- ◆ New advances in anaerobic digestion have improved the yield of gas by a factor of 4 times, resulting in improved economics and payback terms for capital projects. Advanced anaerobic digestion technology extracts methane-rich biogas from animal and food industry waste. A dairy operation with 900 cows is producing 775 Kw of electricity (enough to power 600 homes); an on-site milking and cheese making facility generates 120,000 mmBTU/year of biogas from the manure of 3,000 dairy cows; a facility that generates 650,000mmBTU/year high quality gas from the manure of 10,000 cows.
- ◆ Crops like amaranth and tobacco not only produce large amounts of biomass, which in the future could be used as a feedstock for ethanol or bio-gas production, but both plants also produce very high quality protein that could be used in the cosmetic and food industries.
- ◆ Green energy village in Germany – Mauenheim is a village with 400 inhabitants in southern Germany near lake Constance and Black Forest. It became the first true bio-energy village in the state of Baden-Wuerttemberg. It was a combination of a biogas plant and wood chip heating system, construction of local heat network and the building of several solar plants that the village became completely self-sufficient in electricity and heating using local renewable sources of energy.
- ◆ Rural green energy – Hohentannen is a village in the north of Switzerland with 200 households. Area of the village is 1928 acres (125 acres for the village, 1453 acres for agriculture and 350 acres forest). The village currently produces about 3600MW/yr of energy primarily in the form of food (385MW/yr) and heating fuels (3200 MW/yr). The village currently imports 12700 MW/yr of energy in the form of electricity (3400MW/yr), transportation fuels (6000 MW/yr) and heating fuels (2900 MW/yr). Attempts are well underway to increase the supply of locally produced energy from 22 to 50 percent within five years through increase in energy production to 8000 MW/yr and reduce demand by 1000 MW/yr through conservation.

(Continued on Page 6)

The Greenhouse Business

(Continued from Page 5)

- ◆ A presentation by Dr. Sergio Peres, University of Pernambuco, Brazil provided information on the use of slaughterhouse residues to generate biodiesel, biogas, biofertilizer and pellets. This facility is being designed for 200 cows per week. A feasibility study showed that each cow produces about 15 kg of tallow, 25 kg of manure and 1000 liters of water is used to clean the slaughterhouse and barn. All of the residue is dumped into two sanitary lagoons and are used to generate fuel and fertilizer. The tallow is used to produce biodiesel in a process called transesterification. This facility is expected to produce 3000 liters of biodiesel per week. Biogas production per week is estimated at 1350 to 2100 m³ equivalent to 750 to 1160 liters of diesel.

All of the presentations will be posted on the Growing Margins Conference Website:

www.gtmconf.ca

A few selected useful websites are:

www.farm-energy.ca

www.ontario.ca/agengineering.

www.powerauthority.on.ca

www.ieso.ca/business

www.greenfieldethanol.com

Tomatoes Contaminated With Salmonella

Mohyuddin Mirza

I am sure by now you have seen this story of tomatoes contaminated by a bacterium called salmonella. Media covered this story from different angles and headlines varied from fear to rationality. My first thought was that tomatoes grown in greenhouses have no chance of getting contaminated by salmonella. It turned out that tomatoes in question were field grown and likely got contaminated when washed with water. Many times manure is used for field production of tomatoes in US and Mexico and that may be a source of such contamination. Greenhouse grown tomatoes are not exposed to such contaminant. Furthermore our two major producers and packagers of tomatoes follow HACCP - Hazard Analysis Critical Control Points system. Whenever I walk into tomato greenhouses I see monthly analysis sheets hanging on the wall with total scores on HACCP. It is so satisfying to see a scoring of 98%, 99% and this scoring is done by an independent contractor.

I feel that the safety of our greenhouse grown tomatoes should have been promoted more. Media did report on greenhouse tomatoes from BC, Ontario and Quebec. A press release may have been issued by the industry in this regard. The point is to keep consumers confidence that high quality, safe and nutritious tomatoes are produced locally and are available in the market place.

The Greenhouse Business

NOTES ON BEDDING PLANT SEASON

Mohyuddin Mirza

The association of Victoria Day Weekend, generally the 3rd week of May with the bedding plant season is well established and relied upon in making decisions. Bedding plant greenhouses gear their production for highest sales on this weekend. In case you did not know, in Canada, the celebration of Victoria Day occurs every year on Monday, prior to May 25th. It is the official celebration in Canada of the birthdays of Queen Victoria and Queen Elizabeth II. Victoria Day was established as a holiday in Canada West (Now Ontario) in 1845, and became a national holiday in 1901. Before Victoria Day became a national Holiday, people had celebrated Empire Day, beginning in the 1890s as Victoria approached her Diamond Jubilee in 1897. Victoria, Queen of the United Kingdom of Great Britain and Ireland and empress of India was born on 24 May 1819. She ascended the throne after the death of her uncle George IV in 1837 when she was only 18. She ruled until her death in 1901 when her son Edward the VII became king of England.

So, now you know about the Victoria day weekend. Most of the greenhouses target maximum sales for this weekend. Talking to many growers the sales were behind this year and it is hoped that good weather in June will help to catch up.

I see very innovative sales signs and advertisement in newspapers. Customers do get attracted to these signs but it is the "sales" and discounts which appear to be of great value. Many people will wait for these sales in June to buy plants.

Talking about strategies to attract customers, I like this message in the answering machine of High Q greenhouses. After two rings the message kicks in, not after 6 rings. Six rings are too long.

"After a long wait, it is spring and that is great
At High Q greenhouses we have what you need
Plants in pots, baskets and from seeds
All the benches are full with color and smell
Ready for you to buy and sell
The answering machine may cause a cuss
But quick, leave your message for us
So we can look after you and take your order too".

It appears too long but when you listen to it, it moves along fine. How does one comes up with such messages. I was talking to Michiel Verheul about his messages. I thought he had a team of people who came up with these messages every month. He told me that it is like an inspiration. It is like flow of thoughts which translates into these messages. He writes them down and loads them on to the answering machine. I am sure other growers load similar, thought provoking messages which get customer attention.

(Continued on Pg. 8)

The Greenhouse Business

(Continued from Pg. 7)

On the other hand I also hear messages which are abrupt like "Leave a message and somebody will call you". "Nobody is here is to take your call, leave a message". In this modern age, good, thoughtful messages are needed, giving not only information but also to provide a connection. These messages are like a connector to your business and personalities. A good message may prompt people to come and meet you and buy from your greenhouse.

Small problems here and there related to pH were noticed. Look at this picture below:



This picture was taken on April 30th and you have advertised that greenhouse is opening on May 7th. There are 4000 geraniums involved, showing symptoms like this. Worst case scenario is that you did not know what the problem was. In this case the grower knew that it is was an acidic pH issue, but did not get around to applying potassium bicarbonate. He treated his entire water supply with acid to bring the pH down but the pH meter was out by one unit so instead of pH being 5.5, it actually was 4.5. Now the matter got really complicated because over 100,000 liters of water have to be treated with potassium bicarbonate to bring the pH to 5.5 range.

The application of bicarbonate to geraniums was started quickly and plants started responding but the cost of removing those leaves was significant. This labor cost reminds me of the weeds which many growers complained about in the commercial soilless media. I saw many weeds myself in hanging baskets. It is difficult to remove them without disturbing the roots of plants and labor costs are definitely higher to remove those weeds.

Lots of planning and decisions are required to grow these plants and sell them and the matter does not end after selling. After sale customer care is also important.