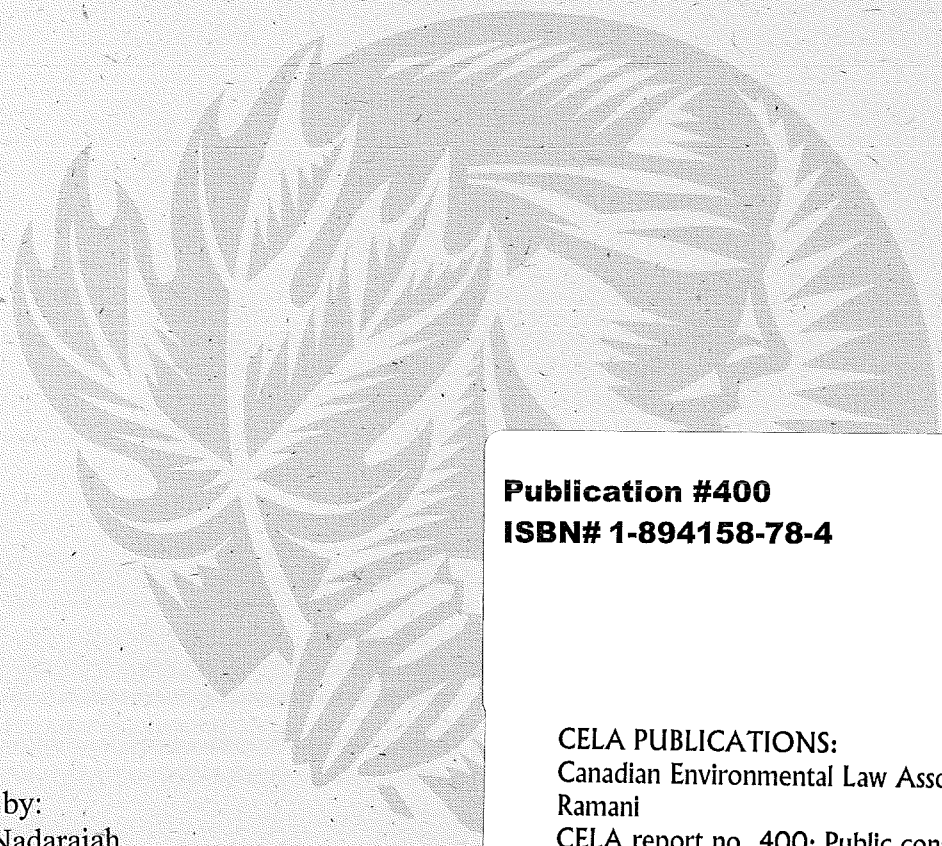


PUBLIC CONSULTATIONS ON INTENSIVE AGRICULTURAL OPERATIONS: MUSHROOM COMPOSTING OPERATIONS & ANEROBIC ODOURS

Report No. 400
ISBN No. 1-894158-78-4



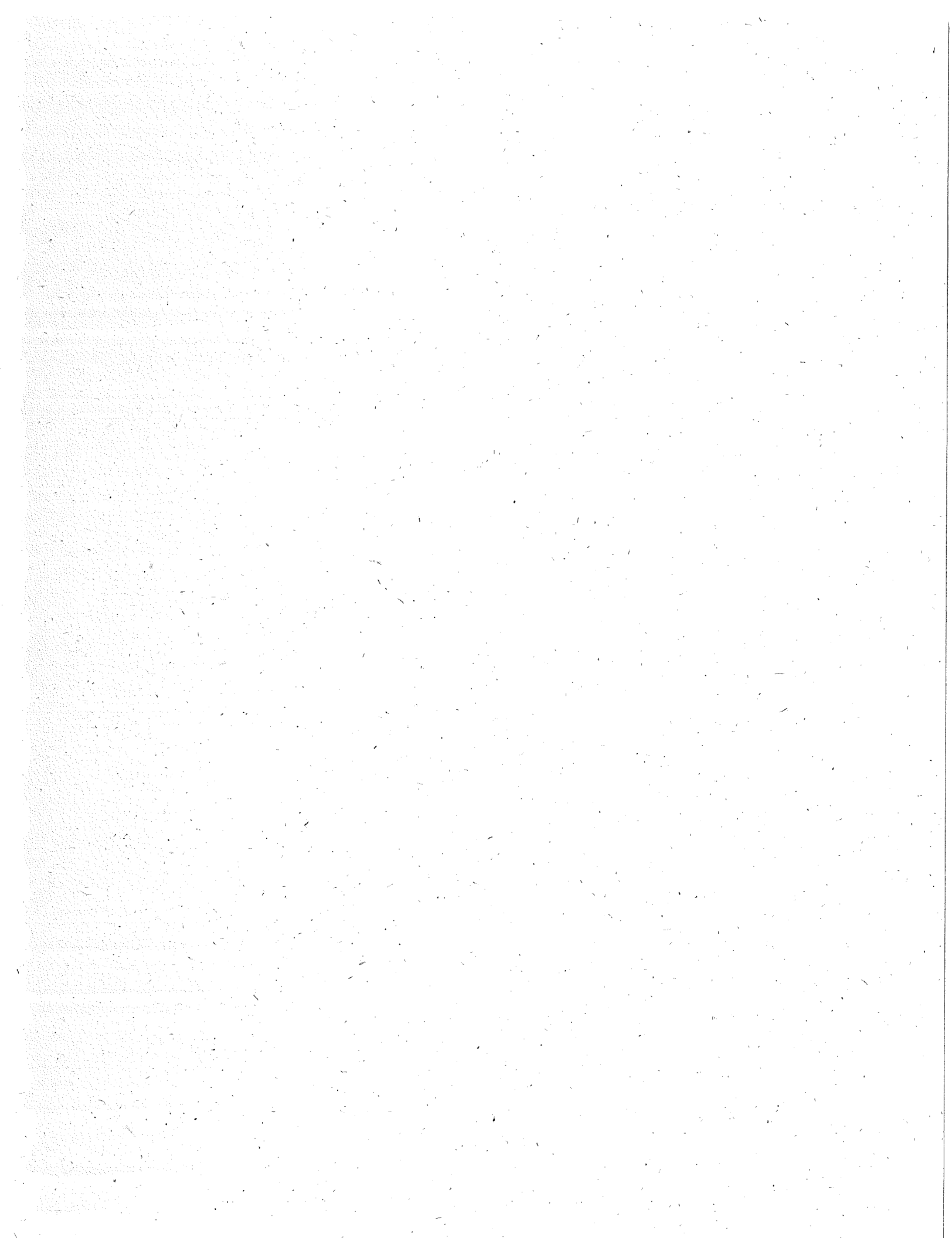
Prepared by:
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Counsel
February 2000

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CANADIAN ENVIRONMENTAL LAW ASSOCIATION
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February 14, 2000

Dr. Doug Galt, M.P.P.
Parliamentary Assistant
Consultation on Intensive Agricultural Operations
Ontario Ministry of Agriculture, Food and Rural Affairs
1 Stone Road
Guelph, Ontario
N1G 4Y2

Dear Dr. Galt:

**Re: Public Consultations on Intensive Agricultural Operations:
Mushroom Composting Operations and Anerobic Odours**

Thank you for your letter of dated January 13, 2000 enclosing a questionnaire in regard to intensive agricultural operations .

As I indicated in my earlier letter to the Honorable Minister Hardeman, the Canadian Environmental Law Association ("CELA") represented Mrs. Pat Gunby and Mrs. Mary Malcolm, two residents in Burford Township, at a hearing before the Normal Farm Practices Protection Board ("NFPPB"). The hearing dealt with whether odours from a mushroom composting operation met the definition of normal farm practice under the Normal Farm Production Protection Act ("NFPPA"). A copy of the decision is enclosed as Appendix 1 to this letter.

We have sought to respond to the specific questions you have included in your questionnaire but have focused our comments on mushroom composting operations. Consequently, we have not responded to each question but have rather focused on those questions which were relevant to this particular issue. CELA will be providing a separate response to the questionnaire on the issue of intensive livestock operations and nutrient management.

What is the scope of the problem?

1. Do farmers have a right to farm in areas designated agriculture? Should there be any restrictions?

The residents who testified at the hearing before NFPPB, many of whom were farmers or had resided in agricultural areas for most of their lives, were not opposed to establishment of the mushroom composting facility on agricultural lands. Rather, they were concerned about the offensive odors which were being persistently emitted from the facility. The residents have repeatedly requested the municipal and provincial government resolve the odour problem. However, to date it appears neither level of government has the legal tools to effectively address this issue.

Mushroom composting involves three interdependent and interrelated processes. During Phase I, large bales of straw are broken apart and chicken manure, horse manure and gypsum are spread on the top of the straw. Significant quantities of water are also added to the material which is arranged into long piles called ricks. During this phase, anaerobic reactions can occur when the oxygen supply within the ricks is depleted.¹

According to the Ontario Ministry of Food, Agriculture and Rural Affairs (OMFARA) "Phase I compost preparation procedure and/or site is becoming a significant issue world-wide. This fact has prompted some countries and municipalities to legislate emission controls."² In British Columbia, for example, the government recently enacted a regulation which now requires mushroom composting operations to have pollution prevention plans which must be reviewed and confirmed by a professional engineer. The regulation also sets out conditions for the design and operation of a mushroom composting facility, including aerated floors and biofilters to reduce and eliminate odours. In addition, composting operations are now required to be carried on within a fully enclosed facility. A copy of British Columbia's *Mushroom Composting Pollution Prevention Regulation* is attached as Appendix 2. Odour controls for mushroom composting operations have also been legislated in Europe. We would recommend that mushroom composting facilities in Ontario be required to control odour in a manner consistent with standards established in other jurisdictions.

2. Should all types of agricultural operations e.g. livestock, cash crop, greenhouses, mushroom growing, composting facilities, etc. be regulated?

Agricultural operations which may cause adverse impacts to the environment and create a nuisance should be regulated to prevent pollution.

In Ontario, mushroom composting operations have become increasingly centralized to obtain benefit from economies of scale. For example, the composting facility in Burford was established by five relatively small mushroom producers pooling their resources to form a co-

¹ Appendix 1, *Gunby and Malcolm v Mushroom Producers Co-operative Inc.* (unreported decision of the Normal Farm Practices Protection Board, August 10, 1999) at p. 7.

² Rinker, Danny L. *Commercial Mushroom Production*, (Horticultural Research Institute of Ontario, Vineland Station,), Publication 350 at p. 8.

operative. As the size of the composting facilities grew the potential for odour problem has also correspondingly increased.

The Ministry of Environment has imposed regulatory requirements for municipal composting operations to prevent odours.³ Some of these operations are comparable in size to the large-scale mushroom composting operations. Moreover the composting process for municipal operations is virtually identical to that of an agricultural operation. However, simply by virtue of the fact mushroom composting operations are deemed to be an "agricultural operation" they are exempt from these regulatory requirements.

3. Should municipalities have a right to regulate livestock/poultry manure management practice?

The provincial government should be responsible for setting province-wide standards to control odour from mushroom composting facilities and also for ensuring compliance. This would ensure that the operation of these facilities are subject to uniform and consistent standards and avoids the need for specific conditions on a site by site basis. We would recommend that municipalities continue to have authority to address site specific issues, such as location of the facility, structural integrity of the facility and minimum separation distances from other land uses.

Managing the Environmental Risks of Farming

1. Should farmers voluntarily follow farming practices that respect the environment and will sustain agriculture in the long term? Or should farmers be legislated to do this?

The provincial government should take a leadership role in ensuring agricultural operations take measures to prevent environmental degradation. The most effective means of achieving this goal would be through the imposition of legislative requirements. It would appear based on the empirical data obtained from surveys of environmental management systems that it is highly unlikely that voluntary programs would achieve the same degree of environmental protection.⁴ Furthermore, the experience with the mushroom industry in other jurisdictions, such as British Columbia, indicates unless the government imposes legislative standards, the mushroom composting industry will not expend any money on installing technology to reduce and eliminate odours.

³ Subsection 19(11), O. Reg. 101/94 Recycling and Composting of Municipal Waste Regulation, *Environmental Protection Act*, R.S.O. 1990, Chap. E-14 as amended.

⁴ In 1996, KPMG Management Consultants conducted a poll of Canadian companies, municipalities, school boards and hospitals concerning their motivations for having an environmental management system in place. Of those that had such a system, 93 per cent said their primary motivation was to ensure compliance with regulations. Voluntary programs ranked near the bottom of the list of motivators. See KPMG Environmental Risk Services Inc., *Canadian Environmental Management Survey* (Toronto: KPMG, 1996).

2. If the regulatory approach is taken which nutrients should be regulated?

- a) Manure only
- b) Commercial fertilizers
- c) Plow down crops and crop residue
- d) Composts
- e) Biosolids; Sewage sludge, paper mill wastes, septage?

We would recommend nutrients which are capable of causing adverse environmental impacts, including mushroom compost, be regulated. Agricultural operations which involve the use of these nutrients should be required to take all reasonable and necessary steps to prevent environmental degradation.

The right to control land use.

Should communities / municipalities have a right to dictate what farming activities are acceptable in given areas?

Municipalities currently control agricultural operations through their by-law provisions. We would recommend that municipalities be given authority to determine what types of agricultural activities are acceptable in a given area based on the extent and intensity of negative impacts the activity poses. Municipalities are in the best position to ensure that that an activity which is incompatible with surrounding land uses is not established so as to avoid conflicts between farmers and other residents.

What is intensive?

- 1. Should intensive be defined?
- 2. If intensive is defined could one of the following be used? A farm is intensive when it:
 - a) is part of a company/corporation
 - b) is not a family farm
 - c) has a barn with capacity to house certain number of animals e.g. a barn to house over 10,000 pigs or 1,500 cows
- 3. Does the Nutrient Management Plan go far enough to safely utilize manure?

The difficulty with defining the term "intensive" is that it places emphasis on the scale and size of the operation as opposed to the nature of the adverse environmental impacts caused by the activity. For example, a family farm could be operating a large hog operation or composting operation which could cause similar adverse environmental impacts to that owned by company or corporation. Similarly, defining intensive on the basis of a certain number of pigs or cow would be just as problematic since a barn with 9,999 pigs could cause the same environmental impacts as one with 10,000. It would be more effective, if the government instead regulated the adverse impacts from the activity as opposed the merely placing an arbitrary limit on the size and scale of a farming operation.

Earning Societal Acceptance

1. What does society consider to be acceptable for intensive agricultural operations?
2. Are building codes adequate to provide structural integrity of livestock barns and manure storage?
3. Whose role should it be to do third party review?

Third Party Review

The third party review of these operations should be handled by one central agency to ensure that standards are uniformly applied throughout the industry. A third party review should also be conducted by an impartial reviewer to ensure there is no conflict of interest and to ensure fairness in the review process. We therefore recommend that OMFRA conduct the third party review as opposed to the industry attempting to self regulate itself. The provincial government should also ensure that OMFRA has adequate number of staff and budget to conduct a third party review.

Suggestions for making things better

1. **Would new legislation focusing on intensive agricultural operations solve these issues?**

New legislation to control odours from mushroom composting operations would, indeed, resolve the odour problems for residents who live in the vicinity of mushroom composting operations.

British Columbia's Ministry of Environment Lands and Park worked in conjunction with the mushroom industry and the public to draft and promulgate regulation approximately a year and half ago to address the problem of anaerobic odours. The regulation has been effective in reducing odours from B.C's largest mushroom composting facility.

2. **How can we strengthen existing provincial legislation to accomplish the same goal?**

The definition of normal farm practices under the NFPPA should be amended so that the focus is on whether a farming practice is necessary or reasonable as opposed to "normal." As the definition stands now, an unreasonable, unnecessary and environmentally irresponsible farm practice may be found to be "normal."

For example, in the case attached as Appendix I the Board, found that there was currently technology available which would eliminate anaerobic odours. On page 32 of the decision the Board states "the preamble to the Act [Normal Farm Production Protection Act] includes a statement that normal farm practices are to be promoted and protected in a way that balances the needs of the agricultural community with provincial health, safety and environmental concerns. *The development of the aerated floor technology would serve to meet that goal and it is unfortunate that the mushroom industry in Ontario appears to be hesitant with regard to the development of that technology*" (emphasis added).

Because the focus of the NFPPA is on whether the standard is normal, the Board was unable to order the facility to implement remedial measures to reduce and eliminate the offensive odours. If the NFPPA had focused on regulating an activity on the basis of whether it was "reasonable" or "necessary" as opposed to being "normal," the Board would have very likely been able to impose an order requiring the facility to undertake remedial measures to curtail the odours. Unless the wording of the NFPPA is amended and new legislation passed to regulate the mushroom composting industry, it is unlikely that the problem of anaerobic odours will be resolved

Conclusion

The odours associated with mushroom composting operations continues to cause serious adverse impacts to residents in Burford Township. Some of the residents have complained about health problems from their exposure to these problems. In some instances when the odours has been particularly strong, individuals have vomited. It should be noted that many of the residents who testified in the NFPPB case are farmers and have resided in an agricultural community for most of their lives. They are used to the normal odours associated with farming operations. However, these residents testified the odour in question are unlike anything they have experienced previously. The exposure to persistent noxious odours has also imposed a significant degree of psychological stress on the community. In addition, the residents also expressed serious concern about depreciation of property value because of these offensive odours. It is our understanding that the odours caused by the mushroom composting operation are not unique to the facility in the Township of Burford.

We do not anticipate that the industry will have any incentive to implement innovative odour control technology utilized in other jurisdictions without leadership from your Ministry on this issue. We are requesting therefore, that the government enact legislative requirements to prevent and reduce odours from mushroom composting operation in Ontario. We would welcome the opportunity to meet with you and your staff to discuss this issue further and to provide any assistance as required.

If you have any questions with respect to the above or require any additional information please do not hesitate to contact the undersigned.

Yours truly,

CANADIAN ENVIRONMENTAL LAW ASSOCIATION

Ramani Nadarajah
Counsel

cc: Mrs. Pat Gunby
cc: Mrs. Mary Malcolm,
cc: Mr. George Garland, Manager, OMFRA

cc: Mr. Toby Barrett, M.P.P.,
Haldimand-Norfolk- Brant
cc: Mr. William Martin, councilor,
Township of Burford

APPENDIX 2 ORDER OF THE LIEUTENANT GOVERNOR IN COUNCIL

Order in Council No. - 1421, Approved and Ordered NOV 19 1998

Lieutenant Governor

Executive Council Chambers, Victoria

On the recommendation of the undersigned, the Lieutenant Governor, by and with the advice and consent of the Executive Council, orders that the Mushroom Composting Pollution Prevention Regulation attached to this order is made.

DEPOSITED
NOV 19 1998
B.C. REG. 413/98

Minister of Environment, Lands and Parks

Presiding Member of the Executive Council

(This part is for administrative purposes only and is not part of the Order.)

Authority under which Order is made:

Act and section:- Waste Management Act, s. 57

Other (specify):-

October 29, 1998

1632 /98/13/ah

MUSHROOM COMPOSTING POLLUTION PREVENTION REGULATION

Definitions

1 In this regulation:

"air contaminant" means a substance that is emitted into the air and that

- (a) injures or is capable of injuring the health or safety of a person,
- (b) injures or is capable of injuring property or a life form,
- (c) interferes or is capable of interfering with visibility,
- (d) interferes or is capable of interfering with the normal conduct of business,
- (e) causes or is capable of causing material physical discomfort to a person, or
- (f) damages or is capable of damaging the environment;

"agricultural waste" includes animal manure, used mushroom medium and agricultural vegetation waste;

"leachate" means liquid effluent including any water, precipitation or runoff that has come in contact with materials being received, processed, composted or stored, or which mixes with contaminated water generated from the composting process or liquid which originates from agricultural waste or the composting process;

"mushroom compost" means a growing medium for mushrooms produced through the biological decomposition of organic materials under controlled circumstances;

"mushroom composting facility" means a facility for the production of mushroom compost;

"nitrogen-rich materials" means manure and other sources of nitrogen;

"organic materials" means straw, hay, other vegetative materials or manure;

"pollution" means the presence in the environment of substances or contaminants that substantially alter or impair the usefulness of the environment.

Exemption

- 2 (1) A person is exempt from section 3 (2) and (3) of the *Waste Management Act* for the purposes of the operation of a mushroom composting facility if the person
 - (a) has submitted a pollution prevention plan under section 2 of the Schedule respecting the mushroom composting facility, and
 - (b) complies with the conditions in the Schedule.
- (2) Subsection (1) does not apply
 - (a) to the composting of agricultural waste to which B.C. Reg. 131/92, the *Agricultural Waste Control Regulation*, applies, or
 - (b) to the discharge of liquid waste or solid waste to land or water.

SCHEDULE

CONDITIONS FOR EXEMPTION UNDER SECTION 2 OF THIS REGULATION

Discharge causing pollution

- 1 Air contaminants from the mushroom composting facility must not be discharged in a manner that causes pollution.

Conditions respecting Pollution Prevention Planning

- 2 (1) A pollution prevention plan for the mushroom composting facility must be
 - (a) prepared and implemented respecting the air, site surface water and ground water, and
 - (b) reviewed and confirmed by a professional engineer or geologist registered to practice in British Columbia whose area of professional specialty includes the preparation and implementation of these pollution prevention plans.
- (2) The pollution prevention plan referred to in subsection (1) must take into consideration all sources of air contaminants and effluent from the mushroom composting facility and include an operation and maintenance plan and a monitoring and reporting program for the mushroom composting facility.
- (3) The pollution prevention plan referred to in subsection (1) must be submitted to the regional waste manager at least 30 days before it is implemented.
- (4) On review of the pollution prevention plan referred to in subsection (1) and consideration of the site specific circumstances, the regional waste manager, by written notice within 30 days of receipt of the pollution prevention plan, may require changes to the pollution prevention plan that the regional waste manager considers necessary to assure adequate pollution prevention and public health protection.

Conditions respecting Design and Operation

- 3 (1) The mushroom composting facility must be designed and constructed such that the mushroom composting facility
 - (a) is on asphalt or concrete, or other similar impermeable surface, that prevents the release of leachate into the environment,
 - (b) is graded to prevent the pooling of water where agricultural waste or mushroom compost is received, processed or stored,
 - (c) is designed to prevent run-off water from entering the areas where agricultural waste or mushroom compost is received, processed or stored,
 - (d) includes covered storage for organic materials, except baled straw or hay, to prevent exposure to precipitation,
 - (e) includes an enclosed building with an aerated floor, designed to ensure the mushroom compost is maintained in an aerobic condition, and with a negative pressure differential between the inside and outside of the building in which the composting process occurs with air emissions directed to collection and treatment in the manner described in paragraph (g),

- (f) includes an enclosed facility or facilities maintained under negative pressure for all nitrogen rich leachate with air emissions directed to collection and treatment in the manner described in paragraph (g), and
 - (g) includes an air emission collection and treatment system, designed and certified by a professional engineer registered to practice in British Columbia whose area of professional specialty includes the design of these systems, which consists of a wet scrubber and biofilter to reduce air contaminants to a concentration that will not cause pollution.
- (2) The design referred to in subsection (1) (g) must be submitted to the regional waste manager at least 30 days before construction of the mushroom composting facility begins.
 - (3) On review of the design referred to in subsection (1) (g) and consideration of the site specific circumstances, the regional waste manager, by written notice within 30 days of receipt of the design, may require changes to the design that the regional waste manager considers necessary to assure adequate pollution prevention and public health protection.
 - (4) The operation of the mushroom composting facility must
 - (a) only conduct the pre-wetting of straw or hay
 - (i) on an aerated floor, or
 - (ii) in a dunk tank within an enclosed storage facility as described in subsection (1) (f),
 - (b) only store pre-wetted straw or hay on an aerated floor,
 - (c) move the mixture of the wetted straw or hay, other organic materials and gypsum and the nitrogen rich material into the enclosed building described in subsection (1) (e) within the same calendar day as the day of mixing,
 - (d) perform all other stages of the composting process, after mixing the straw or hay with the nitrogen rich material, in the enclosed building described in subsection (1) (e), and
 - (e) only be conducted as designed.
 - (5) The mushroom composting facility may be designed, constructed or operated in a manner other than as set out in subsections (1) and (2) if a regional waste manager states in writing that the variation is capable of providing an equal degree of treatment, public health protection and treatment reliability.

Conditions respecting Reporting

- 4 (1) A letter confirming review and evaluation of the mushroom composting facility must be submitted to the regional waste manager
 - (a) within 3 months after the commencement of operation of the mushroom composting facility,
 - (b) within 3 months after completion of an upgrade to the mushroom composting facility, and
 - (c) each year as described in subsection (3).

- (2) The letter referred to in subsection (1) must be prepared by a professional engineer registered to practice in British Columbia whose area of professional speciality includes pollution prevention and it must include the following information:
 - (a) the name, address, telephone number and fax number for the mushroom composting facility owner or operator;
 - (b) a description of the mushroom composting facility, including a description of the treatment works;
 - (c) the location of the mushroom composting facility;
 - (d) whether the mushroom composting facility is operating as designed;
 - (e) the design annual production capacity in cubic metres, at the actual moisture content.
- (3) Annual reports respecting the mushroom composting facility for the previous calendar year must be submitted on or before March 30 of each year and must
 - (a) provide the information, including any changes since the submission of the preceding report, required in subsections (2),
 - (b) state the actual cubic metre production of the mushroom composting facility during the preceding calendar year, and
 - (c) describe any changes to the design plan described in section 2 (1) (g) of this Schedule since the submission of the preceding report.

Posting of security

- 5 (1) A security deposit must be posted in a form acceptable to the regional waste manager in an amount calculated by multiplying the design annual production capacity in cubic metres, as submitted most recently under section 4 (2) (e) of this Schedule at the actual moisture content, by 75 cents per cubic metre.
- (2) If the regional waste manager advises the owner or operator of the mushroom composting facility in writing that the mushroom composting facility, or its operation, is not in compliance with this regulation and the owner or operator does not within 30 days of receipt of this notice provide the regional waste manager with a remedial plan that the regional waste manager considers adequate to remedy the non-compliance, the regional waste manager may use all or part of the security deposit posted under subsection (1)
 - (a) to engage a consultant to advise the regional waste manager of the measures that would most effectively and efficiently end the non-compliance in the most cost efficient manner,
 - (b) to engage, after considering the advice received under paragraph (a), a contractor to carry out the measures the regional waste manager considers most appropriate to end the non-compliance, and
 - (c) to monitor the mushroom composting facility to ascertain whether the measures carried out under paragraph (b) have remedied the non-compliance.
- (3) The security deposit posted under subsection (1) must be replenished for the amount expended by the regional waste manager under subsection (2) within 30 days of receipt by the owner or operator of the mushroom composting facility of written notice of the amount expended.

APPENDIX 1

NORMAL FARM PRACTICES PROTECTION BOARD

IN THE MATTER OF the Farming and Food Production Protection Act.

AND IN THE MATTER OF an application to the Board under Section 5 of the Farming and Food Production Protection Act.

BOARD FILE NO.: 99-02

AND BEFORE : G. EDWARD OLDFIELD, CHAIR
BARBARA GILLIES
PAUL TIESSEN

PARTIES: PAT GUNBY, Applicant
MARY MALCOLM, Applicant
MUSHROOM PRODUCERS' CO-OPERATIVE INC.,
Respondent

APPEARANCES : RAMANI NADARAJAH for the Applicants
LAURA SHAW for the Applicants
DONALD R. GOOD for the Agricultural Operator

REASONS FOR DECISION

INTRODUCTION

Mushrooms are the second most valuable vegetable crop in Ontario with farm gate sales of approximately \$111,000,000.00 in 1998. Production of mushrooms is concentrated with only about twenty-five farms producing the entire Ontario crop. The production of mushrooms is also extremely capital intensive.

Mushrooms grow in a composted material created from straw, horse manure, poultry manure, gypsum, and water. Mushroom spawn is introduced to the composted material in order to produce mushrooms.

The Board heard evidence that many of the smaller mushroom growers in Ontario have experienced financial pressure and some of them have exited from the production of mushrooms. In an effort to develop efficiency within their production of mushroom compost, five relatively small mushroom producers with a market share totalling 10-15 percent of the provincial total created the Respondent which is a co-operative corporation, for the purpose of producing mushroom substrate. Three of the four phases of mushroom production occur at the subject property and the substrate bearing mushroom spawn is transported to the farms of the five growers for the final phase of production which culminates in the sale of mushrooms. Approximately 90 percent of the mushroom substrate produced by the Respondent is utilized at the farms of the owners. The remaining production is sold to other mushroom growers.

The concept of producing mushroom substrate in a co-operative fashion has apparently worked well for the owners of the Respondent. Unfortunately, the process creates significant odours which can be extremely unpleasant. The issue at this hearing is whether the odours emanating from the Respondent are the result of a normal farm practice protected under the *Farming and Food Production Protection*

Act ("the Act") or whether the odours are created by agricultural practices which are not in conformity with normal farm practices.

EVIDENCE OF THE APPLICANTS

The Applicants and four other individuals provided testimony with regard to the odours. The Applicants live in houses which are 1,000-1,200 feet from the Respondent's facility. They are in the path of the prevailing wind blowing from the compost facility toward the homes of the Applicants. The other four witnesses are individuals who live and/or work in the vicinity of the Respondent's business.

Exhibit "1" is a map of the Township of Burford. The location of the Respondent's facility is marked with a black dot. The red dots represent the homes of the witnesses testifying on behalf of the Applicants and are identified by the initials of the witnesses. One witness, Ms. Armitage lives in the Village of Harley and works at a tobacco farm which is near the Respondent's business. The barn on the tobacco farm is shown by an "x" on Exhibit "1" while the tobacco fields are delineated by the letter "O".

The witnesses described horrible odours emanating from the Respondent's facility. Some of the descriptions included "putrid", "pungent", "enough to make you gag", "like rotting animal carcasses" and "like rotting meat". The witnesses indicated that

some individuals have vomited as a result of the odours and their lives have certainly been detrimentally affected by the odours. For example, the children of the Applicants have endured some vicious teasing from other young children when the school bus drives through the plume of odour and it is very difficult for the witnesses to plan any sort of outdoor function or party when the wind may shift at any moment and create a wave of odour over their properties.

In cross-examination, these witnesses all testified that the odour has not improved since the business commenced in December 1994.

The Board has great sympathy for the plight of the Applicants and the other four witnesses who testified on behalf of the Applicants. There is no doubt that their enjoyment of life has been substantially diminished by the operation of the mushroom composting facility.

At the outset of the hearing, counsel for the Respondent acknowledged that the Applicants have experienced odours at a level which would be a "disturbance" as defined by the *Farming and Food Production Protection Act*. Accordingly, it is not necessary for the Board to make a finding with regard to the existence or absence of a disturbance, although the evidence leaves no doubt that the Applicants are subjected to a disturbance as defined by the legislation.

SITE VISIT

Ms. Nadarajah asked the Board to visit the Respondent's facility before hearing evidence. After hearing submissions from the lawyers representing the parties, we concluded that it would be appropriate to conduct a site visit.

Attendance at the site visit was limited to the members of the Board, counsel, the expert witnesses and Dan Hermans who conducted the tour of the facility.

In conducting the site visit, we note that the limited purpose of the inspection is to permit us to better appreciate the evidence and not to gather evidence as stated in *Administrative Law in Canada*, 2nd Edition, page 54.

EVIDENCE OF DAN HERMANS

Mr. Hermans has been involved with his family business in the production of mushrooms since 1976. The Hermans family is one of the owners of the Respondent. Mr. Hermans earned a degree in electrical engineering from the University of Waterloo in 1986 and he has been involved in the design and implementation of the processes of the Respondent.

The five small producers that formed the Respondent grow 10-15 percent of the total production in Ontario. The evidence of Mr. Hermans and other witnesses was to the effect that the Respondent's composting facility is certainly not the largest one in Ontario, but it would be among the six largest sites for compost production in Ontario.

The mushroom farmers who own the Respondent began to look for a site where they could produce mushroom compost in 1993. The subject property was purchased in early 1994 and the first mushroom compost was produced in October 1995.

Mr. Hermans outlined a number of criteria which were relevant to the selection of the site. The only part of the criteria relevant to this hearing is that Mr. Hermans was seeking a property which was as isolated as possible. It was recognized that mushroom composting operations do create odour and the Respondent wished to avoid some of the problems associated with odour by selecting a location which had a minimal number of residents in the immediate vicinity.

Dan Hermans provided evidence with regard to the production of mushroom compost by the Respondent.

The Respondent uses a mixture of straw, horse manure, chicken manure and gypsum in the production of mushroom compost. The percentages of the various

components vary somewhat with changing seasons; but the mixture used by the Respondent is typical within the industry.

Mushroom production is divided into four phases. The first three phases occur at the Respondent's facility.

In Phase 1, large bales of straw are broken apart and the chicken manure, horse manure and gypsum are spread on top of the straw. A liquid stored on site known in the industry as "goody water" (basically the run off from earlier Phase 1 production containing valuable micro-organisms) is added to the pile. A large piece of equipment called a pre-wet machine passes over the long piles of material. The pre-wet machine thoroughly mixes the materials and adds significant quantities of water.

After the pre-wet phase is completed, the material is moved to another part of the concrete pad situated underneath a fabric covering. These long piles are known as "ricks". The ricks are also mixed with specialized equipment and water is added from time to time.

At the end of a 14 day process, the Phase 1 composting is complete.

Phase 2 of mushroom composting occurs when a conveyor belt is used to move the material from the ricks to enclosed metal tunnels where temperature and air flow are

carefully controlled for a period of 5 days. The compost is permitted to generate sufficient heat to kill harmful organisms and then cooled to an appropriate temperature which fosters the production of organisms that are helpful to the production of mushrooms.

Phase 3 of mushroom production involves the removal of the material from the metal tunnels to a conveyor that adds mushroom spawn to the material. The compost is then conveyed to another metal tunnel for a period of 15 or 16 days at a controlled temperature.

At the end of Phase 3, the mushroom substrate is shipped out to customers who are able to commence picking mushrooms 15-25 days after delivery. The separation of the compost facility from the Phase 4 production is regarded as an advanced practice because it removes the danger of the infection of finished mushroom substrate by harmful organisms that may be present on site during Phase 1 of mushroom production.

CAUSE OF ODOUR

Mushroom farmers strive to obtain aerobic conditions within mushroom compost. Anaerobic reactions can occur when the oxygen supply within Phase 1 piles of material is depleted. The witnesses testifying on behalf of the Respondent indicated that anaerobically produced compost is not of good quality for mushroom production and Dan Hermans indicated that the Respondent attempts to reduce anaerobic odours by frequently turning and mixing the piles with modern equipment. Mr. Hermans contrasted the pre-wet machine used by the Respondent with an older technique that is still used at some facilities in Ontario where the mixing and turning is performed by front end loaders which would undoubtedly be much less efficient at mixing and loosening piles of material than the pre-wet machine.

Anaerobic odours can be very unpleasant. Dr. Otten testified that some unpleasant anaerobic odours can be detected by a significant percentage of the population at very low rates. For example, the odour threshold for Dimethyl Disulphide is as low as one part per billion.

Dr. Otten testified that the facility and equipment used by the Respondent could create anaerobic odours in pockets within the pre-wet piles and ricks within hours after the machinery has mixed and watered the material.

We accept Dr. Otten's evidence that the testimony of the Applicants and the other witnesses who testified on behalf of the Applicants describes a "classic" example of anaerobic odours being discharged by a composting operation. We also conclude that the odour is caused during Phase 1, particularly when the ricks reach high internal temperatures.

THE EXPERTS

1. Dr. Lambert Otten

Dr. Lambert Otten testified on behalf of the Applicants. He was qualified as an expert with regard to composting operations as well as the remedial measures necessary to address odours generated during the composting process.

We were impressed with the evidence of Dr. Otten. He is clearly very knowledgeable with regard to the composting of municipal wastes and the manner in which odours can be reduced in composting facilities. We were also impressed by the fact that Dr. Otten acknowledged the limitations upon his expertise. He candidly acknowledged that his work is not specific to the production of mushrooms. He also readily acknowledged that the Respondent's facility is clean and appears to be well managed although he believes that advanced technology within Phase 1 production could dramatically reduce anaerobic odour.

Dr. Otten produced Exhibit "9" to outline temperature variations within three types of composting. The green line on Exhibit "9" represents the temperatures obtained during the creation of mushroom compost. Dr. Otten noted that temperatures as high as 78°C can be reached while the material is in the ricks (referred to as "stack" in Exhibit "9") and he expressed the opinion that the offensive odours are likely to be concentrated within the ricks when they are at their peak temperature.

Dr. Otten testified that an aerated system would provide oxygen to Phase 1 compost in sufficient quantities to virtually eliminate anaerobic odours. An aerated system would provide air to the low central area of the ricks where anaerobic reactions are most likely to occur.

A down-draft system provides oxygen to compost by pulling air down through the ricks. The exhaust air would be pulled into a discharge pipe that would be connected to a biofilter. The biofilter would treat odours and discharge gasses which would not be offensive.

An up-draft system would use a blower to push air up through the ricks. An up-draft system would require the complete enclosure of the composting facility in order to permit treatment of the air blown through the pre-wet piles and ricks.

Dr. Otten indicated that aerated floors are used by composting operations within Canada to reduce anaerobic odours. The technology is not novel in industries other than mushroom production.

2. Dr. Ronald Pitblado

Dr. Pitblado testified as an expert on behalf of the Respondent. He is employed as an associate director of academics at Ridgetown College. He is an extension specialist in mushrooms, turf and processing vegetable crops and has authored numerous publications although a review of his curriculum vitae indicates that he has not published any scientific papers which are specific to odour control in mushrooms. Dr. Pitblado was qualified by the Board as an expert with regard to mushroom composting.

Within his examination-in-chief, Dr. Pitblado noted that a number of mushroom growers are subject to odour complaints. Dr. Pitblado indicated that the other complaints are similar to the concerns expressed by the Applicants. Dr. Pitblado agrees with Dr. Otten that anaerobic reactions and ammonia in the pre-wet piles and ricks are the cause of the odour in this case.

All mushroom composting facilities create compost by mixing the same materials and they strive to maintain similar temperatures and moisture percentages within pre-

wet piles and ricks. Dr. Pitblado testified that the management of the Respondent is superior to many other operations in Ontario because the pre-wet machine is a superior type of equipment for mixing and breaking up clumps of material that can create anaerobic odour. Additionally, the goody water at the Respondent's site is handled in a superior fashion. Dr. Pitblado also testified that the Phase 2 and 3 equipment owned by the Respondent is among the best that he has ever seen although that conclusion is not of great significance when the experts are in agreement that pre-wet piles and ricks cause the odour.

Dr. Pitblado indicated that odour control methods used by the Respondent include:

1. aerating the goody water tank to minimize odour emanating from the goody water tank;
2. using the pre-wet machine which provides a good method of mixing materials and permitting air flow through piles;
3. the water added to the piles is closely monitored to ensure that the material does not become too wet which can adversely affect aerobic production.

Dr. Pitblado stressed the differences between the composting of municipal and other materials which is the area in which Dr. Otten works and the production of mushroom compost. Specifically, Dr. Pitblado stated that high temperatures in the ricks are needed in order to destroy organisms which are harmful to mushroom

production and to promote the growth of helpful organisms. The compost produced in the process described by Dr. Otten would be useless as mushroom compost in which the growth of specific organisms must be encouraged.

Dr. Pitblado was examined with regard to aerated floors. He testified that he is "very much in favour of an aerated floor".

Dr. Pitblado was subjected to a withering and effective cross-examination. Dr. Pitblado was cross-examined upon prior statements and affidavits which might, depending upon their context, lead to the conclusion that Dr. Pitblado has previously trivialized compost odours and changed his position from time to time in accordance with the best interests of the Respondent. For example, Dr. Pitblado provided an affidavit in action 136/95 in which the Township of Burford was an Applicant and Mushroom Producers' Co-Operative Inc. was a Respondent. Dr. Pitblado provided his affidavit on behalf of the Respondent. At Paragraph 7, he noted that the Respondent did have one occasion in December 1994 where the compost became anaerobic and generated a strong odour. Dr. Pitblado stated:

Not only is that not a normal condition, but anaerobic compost is not productive and therefore not sought by the Co-Operative. On the seven occasions on which I have attended at the Co-Operative since it began

producing on the wharf in June 1995, the compost has not been anaerobic and has not generated a strong odour.

At Paragraph 12(f) of the same affidavit, Dr. Pitblado stated:

The neighbours of the Co-Operative have stirred themselves into near hysteria about an activity that is unimpressive in terms of its ability to generate offensive odours which can be experienced beyond the property boundaries.

While the Respondent did call evidence in an effort to show that odour is not a significant problem, the panel accepts the evidence of the Applicants and their witnesses to the effect that the odour is persistent, strong, extremely unpleasant, and spreads well beyond the boundaries of the Respondent's property. Dr. Pitblado's affidavit with regard to the odour producing capabilities of the facility is incorrect.

3. Dr. Danny Lee Rinker

Dr. Rinker is a member of the Department of Plant Agriculture at the University of Guelph. He testified as a witness called by the Board pursuant to section 8(3) of the Act. He was qualified as an expert in mushroom production.

Dr. Rinker testified that the use of aerated floors in Ontario mushroom production is "experimental". He is aware of one facility in Alberta which installed an aerated floor in 1998. One small business in Quebec established an aerated floor about six years ago. He is aware of one small experimental site in Ontario and he is also aware of an English facility which uses an aerated floor.

Pennsylvania is the major centre of mushroom production in North America. Dr. Rinker attended a conference in Pennsylvania in 1998 at which the use of aerated floors was reviewed. Dr. Rinker advised the Board that some producers in Pennsylvania are experimenting with aerated floors, but in Dr. Rinker's view, the technology is not yet proven.

Dr. Rinker has been involved in research which concluded that the high temperatures in the rick stage of Phase 1 production is needed in order to produce high quality compost. Unfortunately, that is one area of the process in which odours can occur.

Dr. Rinker has visited the subject property on thirteen occasions on his own initiative. He has noticed odour from time to time both on site and off site. However, he does not describe the odour as persistent or unusually strong. He does not think that the odour he has noticed is anaerobic in nature.

SENSITIVITY TO ODOUR

Dr. Rinker testified that he did not notice any odour during the site visit. The Board members also did not notice any odour while we were on the premises of the Respondent. However, we did detect a faint unpleasant odour during the cool day that we visited the facility when we drove by the homes of the Applicants.

We have previously noted that the limited purpose of an inspection is to permit us to better appreciate evidence as opposed to gathering evidence. In response to a question from the panel, Dr. Otten testified that some individuals who are exposed to odours can lose their sensitivity to those odours. Additionally, the ammonia which is on site can mask other odours that would be easily detectable to individuals who are some distance from the facility. In analyzing the evidence we conclude that there is likely some degree of desensitization which leads some witnesses to react much more strongly than others while ammonia masks odours on the site.

Ms. Nadarajah and Mr. Good reviewed the evidence pertaining to the quantity of odour at some length in their submissions. The Respondent also called evidence from Mr. Bonney, an individual who farms in the vicinity of the Respondent. Mr. Bonney testified that he had not experienced significant odours emanating from the Respondent's facility and it is difficult to reconcile this evidence with the evidence provided on behalf of the Applicants, although we note that the prevailing winds

apparently blow from the property of the Respondent toward the homes of the Applicants.

It is our opinion that nothing turns upon the quantity of odour. The Respondent admitted at the outset of the hearing that the odour is sufficient to meet the definition of a "disturbance" as contained within the Act. It is our view that disturbance is a threshold test within the Act. Once the threshold is passed, the degree or quantity of the disturbance is not relevant.

In the absence of an admission that a disturbance has occurred, the Board would have concluded that the odour emanating from the Respondent's facility is a disturbance.

ANALYSIS OF EXPERT EVIDENCE

Dr. Otten is a very persuasive witness. He is confident that the use of aerated floors would virtually eliminate the anaerobic odours. The Board accepts Dr. Otten's opinion in this regard.

The difficulty with Dr. Otten's recommendation for the reduction of odour is that he is not an expert in the production of mushrooms. His area of expertise is in general composting and remedial measures necessary to address odours generated during the

composting process. While Dr. Otten's credibility is reinforced by his appropriate admissions to the effect that he does not know whether the high temperatures in the ricks are necessary for mushroom production and that the site visit revealed a well designed, clean and well operated facility, Dr. Otten's evidence cannot be used to draw a conclusion that aerated flooring and a biofilter will eliminate odour without damaging the production of mushrooms.

Dr. Pitblado's evidence was severely tested in cross-examination. In addition to issues reviewed previously at pages 14 and 15, Dr. Pitblado has authored papers supporting the development of aeration technology and indoor composting which were the subject of cross-examination. (Exhibits "20" and "21")

Dr. Pitblado was also cross-examined with regard to a decision of the Ontario Municipal Board ("OMB") involving Mushroom Producers' Co-Operative Inc. and the Township of Burford in which a zoning bylaw was appealed. That decision (Exhibit "22") of the OMB comments upon evidence provided by Dr. Pitblado before the OMB. The OMB decision notes evidence from Dr. Pitblado to the effect that he expressed opinions with regard to aerated floor design. The OMB decision was released in 1996. The OMB summarized Dr. Pitblado's evidence at that time as follows:

Dr. Pitblado was confident that, although very expensive, the aerated floor technology would be

embraced by the Co-Operative once it was shown to be effective.

He was of the opinion that there was about a 90% chance that within the next couple of years the aerated floor design would be ready for North American application. If that happens, it is his view that it will reduce anaerobic activity, and therefore, noxious odours by approximately 70%.

It is obvious that Dr. Pitblado's prediction has not been fulfilled within the anticipated two year period.

In addition to apparent inconsistencies between Dr. Pitblado's evidence before this Board and his various earlier comments, his ability to provide unbiased expert evidence was challenged on the basis that he has worked too closely with the Respondent and the mushroom industry in general.

Dr. Pitblado acknowledged that he did receive an all expense paid 10 day trip to Europe from the Respondent in order to review European mushroom composting operations. Dr. Pitblado has also taken action which might best be described as attempted mediation between the Respondent and members of the local community.

We do not see anything sinister about the excursion to Europe. There is a limited number of mushroom production experts in Ontario and we are not surprised that the Respondent in particular or the mushroom industry in general would want to have European technology reviewed by an expert before decisions would be made to utilize expensive new aeration technology in Ontario. Dr. Pitblado would be an obvious choice to undertake this review, and unless the terms of his employment specifically forbid Dr. Pitblado from accepting the Respondent's funds in order to review European technology, we do not believe that his conduct was inappropriate.

However, it is necessary for the Board to carefully examine whether the relationship between Dr. Pitblado and the Respondent has been so close that it limits his ability to provide evidence upon which the Board can rely.

Ms. Nadarajah drew the attention of the Board to the case of Fenwick v. Parklane Nurseries Ltd. [1996] O.J. No. 3656 which is a decision of the Ontario Court (General Division). The role of an expert witness was reviewed by Justice MacFarland at Paragraph 35 of the Decision in which she stated:

Courts traditionally afford expert witnesses a great deal of respect. This is so because these persons possess an expertise in a particular area of endeavour where lay persons require assistance. The hallmark of an expert witness is that he or she exercise an independent

professional judgment in their assessment of the facts of a given case. Where there is any suggestion that a witness who is proffered as an expert has not that professional independence but has rather taken on the cause of the client who pays the bills, a court will be most reluctant to place great weight on the opinions of that expert.

We have reviewed Dr. Pitblado's evidence in an effort to ascertain whether the inconsistencies within his evidence arise from the fact that he has taken up the cause of the Respondent or as a result of other reasons. We are of the view that Dr. Pitblado was incorrect when he provided an affidavit in an earlier proceeding suggesting that there was no significant quantity of odour escaping from the Respondent's premises.

We are of the opinion that the other inconsistencies result from the fact that Dr. Pitblado's projections regarding the development of aerated flooring have been overly optimistic. The Board heard evidence that some European mushroom producers who have worked with aerated floor technology have not experienced success. The Board does not know why some mushroom facilities in Europe using aerated floor technology have failed. However, Ontario appears to be in a situation where everyone agrees that the aerated floor and biofilter would be good technology

for the mushroom industry, but no one appears to be ready to undertake the expense associated with aeration and biofilters until someone else successfully undertakes the technology.

We therefore conclude that some of the inconsistencies between Dr. Pitblado's evidence to the Board and his prior statements are resolved by reviewing the context of the statements. It would appear the Dr. Pitblado was overly optimistic with regard to the development of aerated floor and biofilter technology in the past.

Our conclusion with regard to the evidence of Dr. Pitblado is that while we have some concerns with regard to statements made by him in the past, his evidence with regard to the issues relevant to this case does not suggest that he has taken on the cause of the Respondent to the point where his evidence should be ignored. This issue is of reduced importance in this case due to the range of expertise exhibited by the experts. When Dr. Otten is unable to state the effect of aerated flooring upon mushroom production or whether the high heat in the ricks is necessary for the production of high-quality compost, there is no evidence to challenge some of the key assertions made by Dr. Pitblado which are supported by the opinion of Dr. Rinker.

We have considered the evidence of Dr. Rinker. Dr. Rinker is familiar with the aerated floor and biofilter technology. However, he concluded that this technology is

at an "experimental" stage in Ontario. He has reservations about whether this technology will permit the development of an ideal mushroom compost.

It is not necessary for us to make a finding of credibility between Dr. Otten and Dr. Pitblado. Dr. Otten's evidence leads to the conclusion that aerated floors and biofilters are capable of preventing anaerobic odours. We are satisfied that the use of this technology would eliminate the odour disturbance created by the Respondent's operation. However, Dr. Otten's expertise does not extend to a specific knowledge of the manner in which aerated floors and biofilters would affect the production of mushrooms.

The Board accepts the evidence of Dr. Pitblado and Dr. Rinker to the effect that the high temperatures in the ricks are necessary in order to produce high quality mushroom compost. We recognize that these temperatures are not necessary in the composting processes which Dr. Otten undertakes in his work. However, the high temperatures are needed to promote the growth of micro-organisms which are beneficial to mushroom production, although the use of the high temperatures undoubtedly increases the risk of odours.

The Board also concludes that the use of aerated floors and biofilters for mushroom production in Ontario is at an experimental stage. The Board was advised that only one commercial mushroom producer in Ontario is using an aerated floor at this time,

and even that aerated floor forms only a small part of the total production of that facility.

The difference in approach taken by the experts appears to centre around whether the reduction of odours or the production of high quality mushroom compost is the goal of the process. We have no doubt that Dr. Otten's proposal would eliminate the odours. However, the statements of Dr. Rinker and Dr. Pitblado (who also promote the development of aeration technology) provide concern that the implementation of this technology may lead to the creation of poor quality mushroom compost unless the technology is developed in a very careful fashion. Dr. Otten does not have sufficient expertise in the area of mushroom production to rebut this evidence.

USE OF AERATED FLOOR TECHNOLOGY IN MUSHROOM PRODUCTION

There are facilities in Europe which utilize aerated floor production. Dr. Pitblado prepared a paper in 1995 entitled "Indoor Composting the Italian Way" (Exhibit "20"). Dr. Pitblado described two Italian mushroom producers which used aerated floors. He also noted a third farm where the "compost yard really smelled. They did not use an aerated floor to reduce the anaerobic processes in the flat heap stage." Dr. Pitblado indicated in his paper that this producer was also in the process of constructing an aerated floor system.

Within the same document, Dr. Pitblado commented upon a mushroom producer from Malta who utilized an aerated floor.

Dr. Rinker is aware of one mushroom facility in England which utilizes aerated floor technology. This facility apparently experienced an increase in production following the installation of aeration technology.

Dan Hermans testified that he is aware of aerated floor composting in Holland. He testified that he is aware of one facility which has closed. Mr. Hermans is also aware of one mushroom facility in Belgium where all phases of production were enclosed. That facility is no longer operating. His belief is that the technology has not been developed to the point where the Respondent can confidently expend a large sum of money to implement this technology.

Wiet Peeters, the President of the Respondent, testified that the Respondent will use the aerated technology when it has been perfected. He believes that the technology is not at a stage of development that would permit the Respondent to risk the expenditure of a large amount of capital in order to install the aeration technology. Mr. Peeters has visited four farms in Holland which use aerated floors. He testified that two of those farms have ceased production.

British Columbia governs mushroom composting through Order in Council 1421 which is dated November 19, 1998. The Board was provided with a copy of the regulation which mandates pre-wetting of straw or hay on an aerated floor or in a dunk tank within an enclosed storage facility. Pre-wetted straw or hay may only be stored on an aerated floor. All of the witnesses with experience in the mushroom industry testified that they are aware of this regulation. However, none of the witnesses could assist the Board to determine whether the regulation in British Columbia has affected mushroom production. The regulation is new and the evidence suggests that new facilities have not yet been built in accordance with that regulation.

There are only two aerated floors used in other provinces for mushroom production. One farm is located in Alberta and is a new facility. The other business has been in operation for about six years in Quebec.

The Board was not made aware of any facilities in the United States which utilize aerated floors or biofilters in the production of mushrooms.

In summary, the evidence from the experts, Mr. Peeters and Mr. Hermans provided particulars of twelve mushroom farms in the world which utilize or have utilized aerated floor technology.

FARMING AND FOOD PRODUCTION PROTECTION ACT

Section 5 of the Act permits any person directly affected by a disturbance from an agricultural operation to apply to the Board for a determination as to whether the disturbance results from a normal farm practice. Section 5(4) of the Act requires the Board to dismiss the application if we are of the opinion that the disturbance results from a normal farm practice. If we conclude that the disturbance does not result from a normal farm practice, then the Board is to order the farmer to cease the practice causing the disturbance or order the farmer to modify the practice in a manner which is consistent with normal farm practice. The phrase "normal farm practice" is defined by the Act to mean a practice that:

- (a) is conducted in a manner consistent with proper and acceptable customs and standards as established and followed by similar agricultural operations under similar circumstances, or
- (b) makes use of innovative technology in a manner consistent with proper advanced farm management practices.

Ms. Nadarajah submitted that "normal farm practice is not limited to practices utilized in Ontario". We agree with this submission, especially when the Ontario mushroom industry is concentrated in a small number of producers.

APPLICATION OF ACT

The Phase 2 and 3 production at the Respondent's facility utilizes innovative technology in a manner consistent with proper advanced farm management practices. It is also the conclusion of the witnesses that Phase 2 and 3 do not create a "disturbance" as defined by the Act. The decision in this case is therefore focused upon Phase 1 production.

We conclude that the Phase 1 production at the Respondent's facility does not make use of "innovative technology". While the pre-wet machine and management of the goody water are improvements upon earlier techniques, they are merely refinements to long established practices of Phase 1 compost production. Accordingly, the Respondent is not protected from disturbances created by Phase 1 production through the argument that the Respondent utilizes innovative technology.

The Applicants rely to a significant degree upon the regulation of the mushroom industry in British Columbia. However, we do not accept that the legislation of aerated floors in British Columbia serves to establish normal farm practice as defined by the Act. The experience of producers in British Columbia who adapt to the regulation in that province may serve to expedite the development of aerated floor technology in the industry. However, the regulation has been in place for less than one year and the Board heard no evidence of any aerated floors in British Columbia

at this time. The Board is not bound by the British Columbia regulation and that regulation is not relevant in Ontario where the Act defines normal farm practice in a fashion which invites a review of similar operations instead of mandating standards for any particular facet of agriculture.

The evidence of Dr. Pitblado and Dr. Rinker indicates that the subject facility is a very well managed and controlled example of conventional Phase 1 compost production. The Board did not hear any evidence to suggest that the Respondent's facility creates more odour than other conventional Phase 1 operations in Ontario or elsewhere.

Dr. Pitblado testified that a number of mushroom producers in Ontario face odour complaints from nearby residents. Unfortunately, the Board did not hear evidence with regard to the manner in which other facilities respond to these complaints.

We accept the evidence of Dr. Otten to the effect that anaerobic activity can commence in pockets within pre-wet piles and ricks several hours after the materials are mixed and turned. We conclude that the production of unpleasant anaerobic odour is an almost inevitable situation within conventional Phase 1 mushroom production, although the quantity of anaerobic gases will vary.

We have some concern with regard to the minimal quantity of odour which representatives of the Respondent apparently indicated would be produced by their operation when the Respondent was seeking municipal approval. Dan Hermans admitted that the Respondent sought a reasonably isolated location on which to construct the composting facility. From this evidence, we conclude that representatives of the Respondent were aware of the fact that their practices would generate odours which neighbours might find objectionable.

Ms. Nadarajah submits that the Respondent's operation is not consistent with proper and acceptable practices. However, care must be taken when interpreting the words "proper and acceptable" contained within the definition of normal farm practice. We must review the Respondent's practices in the context of the entire definition contained within subsection (a) of the definition. We must review the Respondent's business by requiring the Respondent to conduct its practices in a manner consistent with proper and acceptable customs and standards as established and followed by similar agricultural operations under similar circumstances. The Applicants submit that proper and acceptable customs and standards require the imposition of aerated floors and biofilters upon the Respondent. We do not agree with that submission.

The Board heard evidence about eleven or twelve aerated floor systems in the world. Additionally, there is one small experimental aerated floor in Ontario. Because the witnesses who testified about aerated floors are interested in innovative technology,

they would presumably be drawn to those sites instead of conventional facilities. If the use of aerated systems was the standard within the mushroom industry, we would expect that the witnesses would have been aware of many other farms utilizing aerated floor and biofilter technology. While this technology has certainly passed the stage where it is a theory, it has not become a widespread custom or standard in operations which are similar to the Respondent and we conclude that conventional Phase 1 composting systems remain the standard within the industry.

The evidence provided to the Board indicates that the Phase 1 production of the Respondent is well managed in comparison to other operations using conventional methods of producing Phase 1 compost.

We conclude that the standard of production has not yet changed from conventional methods to the aerated floor technology. The preamble to the Act includes a statement that normal farm practices are to be promoted and protected in a way that balances the needs of the agricultural community with provincial health, safety and environmental concerns. The development of aerated floor technology would serve to meet that goal and it is unfortunate that the mushroom industry in Ontario appears to be hesitant with regard to the development of that technology.

It is our opinion that the method of producing Phase 1 compost utilized by the Respondent is in accordance with normal farm practice as defined by the Act. We

conclude that anaerobic odours do result from conventional Phase 1 practices and that the anaerobic odours are consistent with normal farm practice at this time.

ORDER


We have somewhat reluctantly concluded that the odours created by the Respondent are consistent with normal farm practice. Accordingly, the application is dismissed as required by section 5(4)(a) of the Act.

However, the conventional Phase 1 process is only marginally acceptable in 1999. We are disappointed that the mushroom industry in Ontario does not appear to take a leading role in the development of technology which would reduce the production of anaerobic gases. We strongly urge the mushroom industry to expend the money that is necessary to develop aerated floors and biofilters in mushroom production within Ontario. Otherwise, the entire industry may be adversely affected by a future ruling of this Board which may conclude that the standard of normal farm practice has shifted from conventional Phase 1 production to aerated floor and biofilter technology.

Although this application is dismissed, we do not regard our decision as a definitive statement. We anticipate that the Board would be prepared to hear applications pertaining to the Respondent or other mushroom facilities in the future and as

technology develops, the Board may arrive at a different conclusion in the future if presented with similar facts.

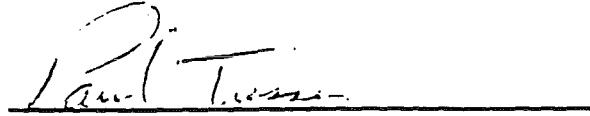
DATED at Waterloo, Ontario, this 10 day of July, 1999.


G. EDWARD OLDFIELD

DATED at *Ayr*, Ontario, this *10* day of *August*, 1999.


BARBARA GILLIES

DATED at *Leamington*, Ontario, this *10* day of *July*, 1999.


PAUL TIESSEN

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BARBARA GILLIES

DATED at *Leamington*, Ontario, this *9th* day of ^{*August*} ~~July~~, 1999.



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