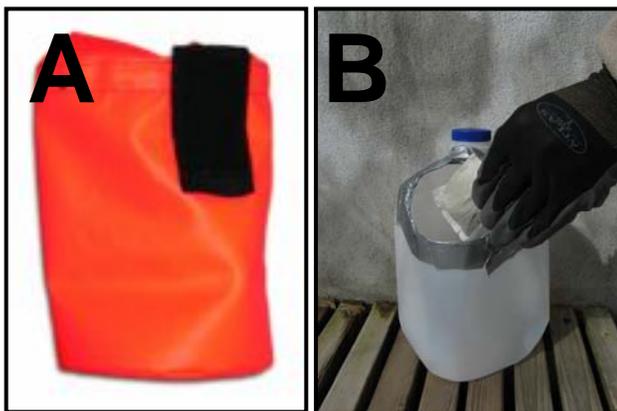


Handling Techniques and Equipment

- Open trees boxes of trees in well-ventilated areas and avoid inhaling vapours from newly opened boxes.
- Any spills must be immediately cleaned up, and planters should not leave loose fertilizer or broken teabags in planting bags. They will fall onto other people's gear during transport.
- Occasionally clean planting bags out with water to help remove any chemical build up.
- Carrying teabags loose in canvas planting bags or silvacool bags does not offer effective containment. Keep them in a special fertilizer pouch (picture A), plastic bag, or customized container.
- Many planters use a 4-litre milk jug with a hole just big enough to fit a closed hand through. Line the edges of the hole with duct tape, and hang the jug from the planting bag belt. (picture B).



Remember: Research indicates chemical exposure from fertilizer and pesticide handling among tree planters is far below dangerous levels. However, planters can reduce exposure by using proper equipment and good techniques, and by maintaining good personal hygiene. (See rear panel for link to original research)

If you have concerns about pesticides or fertilizers, ask your company about their WHMIS program, and request the Material Safety Data Sheets (MSDS) for the substances you are handling. If you believe you are having an allergic response to any material, inform your first aid attendant immediately, and seek proper medical aid.

Hand washing and Hygiene

- Alcohol based cleaners and disposable hand wipes are designed for killing germs, and are not effective for removing chemicals. Soap and water should be used to wash hands after handling fertilizer or pesticides.
- Planters should wash their hands before eating, drinking, or smoking.
- Planters can take a small bottle of biodegradable soap to work each day, and use a small bottle of water or a camping water jug to wash their hands.



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Ms. Gorman's Master thesis can be viewed on the Internet at the following address:
https://dspace.library.ubc.ca/dspace/bitstream/2429/2493/1/ubc_2008_fall_gorman_melanie.pdf

Additional information regarding the research is available at www.cher.ubc.ca/treeplanter

Fertilizer and Pesticide Exposure Reduction for Tree Planters



April 2009

- **Helpful hints for minimizing exposure**
- **Guidelines for selecting gloves**
- **Tips on technique and gear selection**
- **Links to further information**

Employers and employees share responsibility for a safe and healthy workplace. Both should be aware of their responsibilities under WorkSafeBC regulations, and should work together along with health and safety professionals, nurseries and forestry companies to ensure adequate chemical protection protocols and hygiene practices are in place at the worksite. This pamphlet provides information to help both employers and employees in that task.



Glove Selection Guide

Gloves must provide both mechanical protection from scrapes and cuts, and chemical protection. Because fit and preference varies with individuals, and because there is no consensus on one perfect glove, this guide identifies several good and bad choices along with their respective pros and cons.



Planting gloves should be made of NITRILE. Butyl rubber and neoprene offer good chemical protection but are not usually flexible or thin enough for planting purposes. Latex rubber gloves are **not** suitable for planting because they do not provide an effective chemical barrier.

Whichever gloves workers utilize, they should ensure a good fit that does not compress the knuckles or hand tendons and provoke tendonitis.

1) **Thin nitrile gloves (dishwashing style) with a cotton or polypropylene liner.**

The washable liners wick moisture away from the hands, and provide warmth. Cotton liners (white) for warm weather, polypropylene (blue) for cold. These gloves provide an excellent chemical barrier, although they are slightly less durable than other gloves. The nitrile gloves are prone to failure if used without a liner because fingernails will work through the material. They are prone to punctures, but are relatively inexpensive, especially when purchased in bulk.

2) **Full length nitrile-coated (gauntlet style).**

These gloves possess a fabric backing that provides warmth and comfort, combined with a full nitrile barrier (coating). They provide excellent durability and protection from scrapes and cuts, but less flexibility. The gauntlet length also reduces the amount of debris that gets caught inside the glove.

3) **Half-coated nitrile gloves combined with a full (surgical style) disposable nitrile inner liner.**

The inner liner reinforces the partial outer coating, providing good chemical protection. Planters often utilize 2 to 4 inner liners each day, but they are cheap and available in large boxes. Latex inner liners are not recommended and may cause mild allergic reactions. Hands often get sweaty inside the liners, but they are easy to change throughout the day.

4) **Vinyl-coated outer glove combined with a full (surgical style) disposable nitrile inner liner.**

The outer glove provides excellent durability and cut protection, while the inner liner provides a good chemical barrier. The outer glove alone does not provide good protection, and the inner liner must be changed daily (or whenever it breaks).

5) **Half-coated nitrile gloves (no liner).**

These gloves are not recommended without the use of an inner nitrile liner, because the uncoated back of the glove can absorb chemicals and has the potential to increase exposure by holding chemicals close to the bare skin. A liner is strongly recommended (See #3).

6) **Webbies.**

These gloves are inexpensive and easy to find. However, they offer little to no chemical barrier, and allow dirt and rocks to become embedded under the fingernails. Not recommended.

7) **Duct Tape.**

This does not provide an effective chemical barrier, and prevents the planter from properly washing their hands before eating or after using the bathroom. Tape manufacturers recommend avoiding prolonged or repeated skin contact. Duct tape “gloves” are not hygienic, not recommended, and not acceptable according to most Material Safety Data Sheets.

8) **Bare Hands.**

This provides no chemical protection and increases the probability of cuts and infection. Not recommended and not acceptable according to most Material Safety Data Sheets.

There may be other effective glove systems available, and planters may choose different gloves than the company provides. Planters should look for gloves with the same qualities as the recommended gloves in this pamphlet, including nitrile as the preferred material.

Laundry and Clothing

- Wash gloves as frequently as possible. Buy them in bulk, and keep spare pairs handy.
 - Pesticides are absorbed by fabric, and can build up in clothing.
 - Wear a fresh clean set of clothes each day of work. Planting clothes should be worn only once, and then washed. Use hot water to remove the most chemicals possible.
 - Wash work clothes separately from casual clothes.
 - Planters should change into fresh clean clothes immediately after work, or as soon as they return home from work.
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