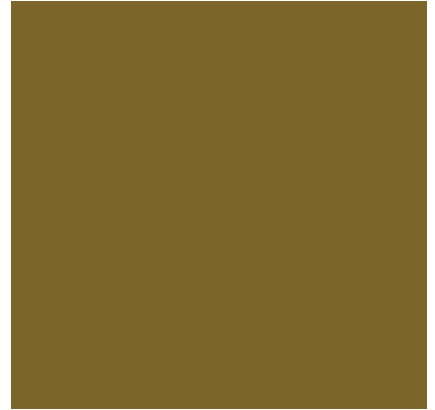




UNIVERSITY OF  
SASKATCHEWAN



# Smart Purchases Big Impact

**Sustainable Purchasing Guide**  
**Horticulture Tools**

*Sustainability... your university, your world*



## Introduction

This section provides information on currently available **horticultural hand tool** options that can help to move the University of Saskatchewan toward its sustainability goals. Living within the boundaries of our sustainability objectives requires us to apply two main strategies:

**Dematerialization** requires that we reduce the amount of materials as much as possible; and that we continually move toward the use of 100% recycled content.

**Substitution** requires that we find less harmful materials to replace those that currently damage and are not recyclable.

**Sustainable purchasing** is about including social, environmental, financial and performance factors in a systematic way. It involves thinking about the reasons for using the product (the service) and assessing how these services could be best met. If a product is needed, sustainable purchasing involves considering how products are made, what they are made of, where they come from and how they will be used and disposed.

Finally, remember that this is an evolving document – it will change with new information as our understanding of sustainability impacts and potential solutions improves.

### Purchasing Services

Tel: (306) 966-6704  
Email: [purchasing.services@usask.ca](mailto:purchasing.services@usask.ca)

### Office of Sustainability

Tel: (306) 966-1236  
Email: [fmd.sustainability@usask.ca](mailto:fmd.sustainability@usask.ca)

**Smart Purchases  
Big Impact**

Wherever possible **CHOOSE** products that employ a combination of characteristics listed in the left hand column, and **AVOID** products that demonstrate characteristic in the right-hand column.

CHOOSE	AVOID
<ul style="list-style-type: none"> <li>• Durable high quality tools</li> <li>• Sustainable materials</li> <li>• High percentage of post-consumer materials</li> <li>• Locally produced</li> </ul>	<ul style="list-style-type: none"> <li>• Toxic finishes</li> <li>• Virgin plastic</li> </ul>

### Option: Rent Tools

Strategy: **Dematerialization**

Rent or borrow tools for infrequent needs, to reduce the ecological cost of manufacturing a new tool.

### Option: Choose Recycled Materials

Strategy: **Dematerialization and Substitution (SO 1, 2, 3)**

Purchase recycled-content gardening equipment and tools. Choose a garden hose made with a minimum of 50% post consumer recycled materials. Many garden hoses contain recycled materials such as old tires or polyurethane or a combination of both. If you choose plastic hand tools, look for recycled materials there as well. Plastic lumber is commonly made from recycled plastic bottles and bags, and it can be used to make flower beds, trellises and trays.

### Option: Choose Sustainable Materials

Strategy: **Substitution (SO 1, 2 3)**

Many types of biodegradable pots can be found on the market today. The products range from those made of coconut fibres to those made from composted cow manure and natural fibres (odourless). These pots will biodegrade in the soil and add a boost of organic nutrients. Also pots from sustainable, rapidly reproducing sources like bamboo pots or rice-fibre pots can be purchased as alternatives to plastics.

Bamboo is a popular and sustainable material for leaf rakes. Unfortunately bamboo must be shipped long distances as it is not native to Saskatchewan.

In regards to sustainably harvested wood products, look for Forestry Stewardship Council of Canada approved products. This verification ensures that the forest ecosystem the materials are harvested from is being sustainably maintained.

### Option: Choose Environmentally Friendly Finishes

Strategy: **Substitution – Nature-like (SO 2)**

Choose durable, rust and corrosion resistant finishes, but opt for products that do not contain heavy metals (lead-free), are free of hazardous air pollutants (HAPS-free), and that contain low (or no) levels of volatile organic compounds



(VOCs). VOCs are carbon based chemicals, such as benzene, toluene and formaldehyde that evaporate easily at room temperature, and may cause health problems.

### Option: Sustainable Transportation

#### Strategy: Dematerialization (SO 1)

If a new product is necessary and cannot be sourced locally, look to purchase from companies that exercise sustainable shipping methods.

## Arriving at the currently preferred options

### 1. Identify the service

Horticultural hand tools facilitate efficient horticultural and agricultural activities.

### 2. Assess the need

The University of Saskatchewan requires horticulture hand tools to support agricultural, horticultural and grounds maintenance activities, including greenhouses, both in terms of operations and academic activities.

### 3. Identify the contents

Tools are generally made of **plastic** or **wood**, in combination with **metals** (usually steel).

### 4. Identify sustainability impacts

*i. ....systematically increasing concentrations of substances from the earth's crust?*

- Most pure **metals** including those that may be used in the horticultural tool manufacture come from the Earth's crust. They are found in solid materials called minerals from which the pure mineral has to be extracted.

### 4. Identify sustainability impacts (con't)

*ii. ....systematically increasing concentrations of substances produced by society?*

- If the **plastic** used in greenhouse equipment is not recycled, it usually ends up in landfills or incinerators. The plastic persists in the environment after it is used and discarded, contributing to an increase in concentration of complex human-made substances in nature.
- **Varnishes and paints** used to protect and increase longevity of greenhouse equipment may contain compounds that include volatile organic compound (VOCs), formaldehyde, chlorofluorocarbons (CFCs), and hydrochlorofluorocarbons

(HCFCs), all of which may lead to both human health and environmental impacts.

*iii. ....systematically degrading nature by physical means?*

- Polyurethane and plastic products, such as those found in pots or equipment handles, do not break down in landfills, adding to a long term waste problem. This contributes to the physical degradation of nature through increasing amounts of land used for **landfill**.
- Forest management practices that remove trees at a greater rate than they can recover or weaken local biodiversity and overall ecological health are unsustainable. Examples of these practices include **clear-cut harvesting** methods and **monoculture** planting. Clear-cutting has many disruptive effects including the reduction of biodiversity, the destruction of wildlife habitat, severe erosion of soil and increased flooding.
- The **extraction of raw materials** (for metals and petrochemicals) negatively impacts the environment in the form of mining, processing and transportation activities, especially where land is not managed properly and not reclaimed after use. Impacts can include deforestation, displacement and disruption of animal populations, and chemical pollution.

*iv. ....systematically undermining people's ability to meet their basic human needs?*

- VOCs contribute to the formation of smog, which contributes to **respiratory problems** in humans. Some VOCs are also suspected or known carcinogens.
- Deforestation can be detrimental to **human health**. Forests provide food, shelter and protection from the elements. Forests also play a key role in mitigating climate change, helping to conserve soil and maintaining water quality.

### 5. Envision sustainable horticulture tools

Sustainable horticultural hand tools would be produced using re-

*continued on page 3...*

renewable energy sources and all raw materials would be recycled or extracted using sustainable practices. Any finishes used on the equipment should not contain VOCs and any other type of harmful, persistent chemicals.

## 6. Identify and prioritize alternatives

To identify the best options to meet the services provided by horticultural tools, review the Current Options on page one and choose the most appropriate alternative by using the following three criteria for assessment:

- a) Does the product or service move us in the right direction with regards to our four Sustainability Objectives?
- b) Does the product or service create a flexible platform for the next step toward sustainability?
- c) Is the decision financially viable?

## Resources and Additional Information

1. Volatile Organic Compounds  
<http://www.epa.gov/iaq/voc.html>



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