

FARM PRACTICES

CROP RESIDUE MANAGEMENT

Description

Crop residue is defined as the vegetative crop material left on a field after a crop is harvested, pruned or processed. As much as possible farmers are encouraged to work crop residues back into the soil or compost them for use as a soil amendment. Recycling crop residues helps prevent erosion and preserve or improve soil quality.

Nuisance Concerns

The three main disturbances mentioned in the *Farm Practices Protection (Right to Farm) Act* are odour, noise and dust. Of particular concern to practices surrounding crop residue management are the nuisance disturbances from odour and dust.

Odour

Farmers engage in a variety of activities that produce odours. Many crop residues when left to decompose in fields can release some odours. How people perceive the odour (nuisance or not) will depend on the frequency, intensity, duration and offensiveness of the odour, how well they smell and personal experiences associated with odour.

See Nuisance Reference: [Odour](#)

Dust

Farmers that work the soil, engage in a variety of activities that require the use of equipment or practices that create dust. Dust may also be generated as 'fugitive dust' when fine particulate is lifted from fields, roads, buildings and yards by the stirring action of air. Most land clearing equipment generates some dust. Dust in the air is defined as fine grained suspended particulate. How people perceive dust (nuisance or not) will depend on the frequency, intensity and duration of the dust generating event.

See Nuisance Reference: [Dust](#)

Activities and Operations

Generally, crop residues should be applied to land in the same manner as other organic amendments used for crop production. They should be chopped and spread throughout the field or incorporated into the soil, not piled on top, so that wastes decompose quickly and thoroughly. In some instances, crop residues can and should be composted to improve their quality as a soil amendment or to aid in pest or disease control.

Grains, Oil Seeds and Grasses

Where possible, crop residues should be left on the soil surface over the winter to protect the soil from erosion. They can be incorporated into the soil the following spring during regular cultivation operations, or in the case of no-till, left on the surface.

Chopping, flailing and spreading straw or chaff will improve decomposition rates of the crop residue and improve uniformity of distribution over the field. Dust may be generated during harvest or during the management of grain, oil seed and grass crop residue. Burning of windrowed grass or grain straw may be done after harvest to manage pests and large quantities of residue if no other suitable practices are available.

See Farm Practice: [Burning](#)
[Cultivation](#)

Vegetables

Residues should be incorporated into the soil soon after harvest is complete so that a cover crop can be seeded. This practice reduces weeds, insects and disease, minimizes erosion, captures excess nutrients and reduces the potential for odour. If the harvest is late and there isn't enough time for a cover crop to grow, crop residues should be left where they are. Turning under the residue would expose the soil to winter erosion. Piling of residue from brassica crops is not recommended, these materials should either be spread or incorporated into the soil where soil conditions permit field access. For very late crops, no attempt should be made to incorporate residue as doing so would cause serious soil structure damage. Standing vegetable crop residue can provide excellent soil protection from wind and water erosion.

Prunings

Tree fruit, berry, grape, and other prunings are usually mulched. They may be piled and burned, provided the *Open Burning and Smoke Control Regulation* and Code of Practice is followed. If mulched, prunings should be spread evenly over the ground and, where possible, incorporated into the soil. Piled prunings may also be burned to control insect or disease

See Farm Practice: [Burning](#)

Related Farm Practices

Other farm practices that pertain to crop residue management include, but are not limited to, the following:

Cultivation

Cultivation is used to breakup and bury crop residue so as to begin the decomposition process or control pests that maybe harboured in the residue. In some instances cultivation may or may not be used to alter the nature of the soil and crop residue condition in order to improve soil erosion control.

Mobile Equipment

Harvesting of grains, oil seeds and grasses require the use of mobile equipment that must be operated at optimum moisture conditions. However, dust is often generated from molds, dirt and finely broken crop residue during the process of separating the harvested portion of the crop from the crop residue left in the field. This dust can be the result of the design of the mobile equipment or crop residue management attachments on the equipment. The dust may be created intermittently and move across the field as the equipment moves through the crop.

Legislation

Information on federal and provincial legislation can be found in Appendices B and C. Acts, regulations and bylaws that regulate or may affect crop residue management practices include, but are not limited to, the following:

Provincial

Waste Management Act – protects environment (soil, water & air) from pollution

Agricultural Waste Control Regulation – allows farmer to operate without a waste permit when managing crop residue according to the *Code of Agricultural Practice for Waste Management*

Publications

Publications that provide further information on crop residue management include, but are not limited to, the following (refer to Appendix D for details):

B.C. Agricultural Composting Handbook

British Columbia Environmental Farm Plan Reference Guide

A Guide to the Open Burning Smoke Control Regulation