

FARM PRACTICES

CULTIVATION

Description

Cultivation or stirring of the soil is one of the oldest agronomic practices. It is common to the great variety of field cropping systems used on farms in British Columbia. There are two kinds or “intensity classes” of cultivation:

Primary cultivation involves operations, which cut and shatter the soil with relatively deep penetrating tools (15 cm to 75 cm) and leave a rough surface texture. Plows, listers, bedders, and rotary tillers are the main implements used for primary cultivation.

Secondary cultivation involves operations, which pulverize, level, and firm the top 5 cm to 15 cm of soil. Disk harrows, cultivators, and rotary tillers are the main implements used for secondary cultivation.

With the introduction of powerful tractors and modern soil tilling implements, farmers’ ability to stir the soil has increased dramatically. This has spawned concerns about soil degradation, most notably organic matter depletion, compaction and erosion.

Reduced Tillage: In recent years, equipment and agronomic techniques have been developed that enable farmers to sow seed, add soil nutrients and harvest their crops with minimal disturbance or cultivation of their fields. These practices are referred to as no-till, minimum-till or zero-till. Proper timing of field operations, reduced field speed, and proper choice and use of implements also help reduce the negative impact cultivation has on the soil.

Land Grading and Leveling: The practice of land grading or land levelling consists of shaping the soil surface within a field to improve surface drainage and eliminate areas where surface water may pond. This is usually done by cutting high spots and filling low spots. The activity requires the use of cultivation and land levelling equipment such as scrapers and heavy tractors. Land grading is generally used to improve drainage but can be used to change the aspect of a site, remove 'bumps and hollows' or provide improved erosion control.

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 cultivation practices are noise and dust.

Noise

Farmers engage in a variety of activities that require the use of cultivation equipment. Most equipment generates some noise. Noise is defined as any sound that is audible but judged to be an unwanted,

irregular or erratic disturbance. Noise levels vary and may rise when equipment is run at high speed. Noise may be generated continuously or intermittently.

See Nuisance Reference: [Noise](#)

Dust

Farmers engage in a variety of activities that require the use of equipment or practices that will 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

Field Operations

Farmers may till their fields to prepare a seedbed for annual or perennial crops. They may till their fields as part of land clearing operations. They may incorporate crop residue, soil amendments and organic fertilizer into their land. Controlling weeds, insects and disease may also necessitate cultivation. Under certain soil moisture conditions cultivation can create dust. Farmers should attempt to carry-out all tillage operations when soil moisture levels are below field capacity and above wilting point. This will minimize creating of dust and reduce the incidence of compaction.

See Farm Practices: [Mobile Equipment](#)
[Land Clearing](#)

Related Farm Practices

Other farm practices that pertain to cultivation include, but are not limited to, the following:

Crop Residue Management

Effective management of crop residue often requires the use of both cultivation and other mobile equipment. Both privately owned and custom hired equipment may be used to till farm land. Farmers may drive large cultivation implements and their power units on public roads in agricultural areas. Cultivation equipment may be operated 24 hours a day at critical times of the year.

Fertilizers and Soil Conditioners

Fertilizers and soil conditioners must be evenly spread over the soil and are most effective when incorporated into the crop rootzone through the use of cultivation equipment.

Weed Control

Besides the use of herbicides one of the most effective and preferred techniques, particularly in organic crop production, for the control of weeds is the use of cultivation.

Legislation

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

Provincial

Motor Vehicle Act – movement of equipment to and from fields and the control of hazards to safe travel on highways

Publications

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

BC Agricultural Drainage Manual

Conservation Tillage/Seeding Equipment

Farm Vehicles on the Move

Soil Management Handbook for the Okanagan and Similkameen Valleys

Soil Management Handbook for the Lower Fraser Valley