

## WOOD RESIDUE USE IN AGRICULTURE - Precautions -

The *Code of Practice for Agricultural Environmental Management*, under the Environmental Management Act, defines wood residue as follows: Wood residue means wood or a wood product that is chipped or ground, originates from wood processing, clearing of land or trimming or pruning activities. Wood residue produced from land clearing activities must have the majority of the greenery removed and no soil present. For wood residue to be used, it must not

- Have been treated or coated with chemicals
- Contain foreign substances harmful to humans, animals or plants when combusted
- Have been exposed to salt water, or
- Recovered from construction or demolition activities

All wood residue, particularly wood residue that contains softwood residues from western red cedar, will produce leachate when exposed to rainfall or irrigation. This leachate can be toxic to the environment and then classed as a pollutant. Therefore, uses of wood residue which result in the generation of leachate that could escape to the environment and cause pollution must be avoided.

### CHARACTERISTICS OF WOOD RESIDUE LEACHATE

Wood residue leachate is typically a black, strong smelling, foamy liquid with a high chemical and biological oxygen demand and a high toxicity to fish when it enters water. It usually contains lignins, tannins and tropolones which are toxic compounds. The leachate is generally acidic and has a high reserve acidity (buffering capacity). It creates an

iridescent (oily) slick on water it enters into and may have a sweet industrial or petroleum odour. Due to its colour, which is black rather than the tea brown colour of peat water, wood residue leachate screens the passage of light into water. Light and oxygen are essential to the production of aquatic plant production and fish rearing.

The impact of wood residue leachate is more severe on watercourses such as small streams and ditches that are distant from main water bodies like the Fraser River. These small watercourses often have low flow levels and are critical fish habitat for rearing and growth of fry. Therefore, farming operations, particularly those growing nursery stock, blueberries and cranberries or having equestrian riding facilities, which are located near watercourses, **must use wood residue with caution.**

The minimum setback distances from drinking water sources and watercourses when using wood residue are as follows:

- When applying to land in a layer 30 cm or greater
  - 30 m from a well or diversion point
  - 15 m from a water course
- When applying to land in a layer less than 30 cm
  - 30 m from a well or diversion point
  - 3 m in any other

Natural attenuation may aid in the treatment of wood residue leachate. However, it is not likely to be successful for the large volumes of leachate generated on most farming operations in South

Coastal British Columbia, as a result of the high rainfall conditions which are experienced in this area. Wood residue leachate can also cause contamination of irrigation and drinking water. Consumption of drinking water contaminated with wood residue leachate can result in human illness, hence the 30-meter setback in the *Code of Practice for Agricultural Environmental Management*. Irrigating with water contaminated with wood residue leachate can lead to damage and discolouration of fruit and plants. Wood residue leachate in combination with other suspended solids may form slimes that can plug trickle irrigation systems

## WOOD RESIDUE AND REGULATIONS

The Environmental Management Act for British Columbia has permit provisions for the storage and use of wood residue. Most agricultural operations are exempt from a permit for these activities as long as they comply with the *Code of Practice for Agricultural Environmental Management*. Municipal Bylaws may also restrict the use of wood residue in some cases.

The Agricultural Land Reserve Use, Subdivision and Procedure Regulation also regulates wood waste and requires that it is used and stored for agricultural purposes and in compliance with the *Code of Practice for Agricultural Environmental Management*.

### Wood residue Use

The use of wood residue in agriculture is accepted so long as it is used for: plant mulch, soil conditioner, ground cover, growing media, composting, on-farm access ways, livestock bedding and areas where livestock, poultry or farmed game are confined or exercised, or as fuel for wood fired boilers.

Wood residue is not allowed to be placed in watercourses (including ditches) or used as fill.

## Wood residue Storage

Wood residue may be stored on farm in a permanent storage structure or as temporary field storage for a maximum of 12 months and must be handled so as to prevent contaminated runoff, leachate, solids, and dust from entering a watercourse, crossing a property boundary or infiltrating below the seasonal high-water table.

Wood residue storage must not be located in saturated soils or standing water, as well as any low-lying areas prone to annual seasonal flooding or when flooding is imminent. Whether in a permanent storage structure or as field storage, must be set back 30 m from drinking water sources and 15 m from watercourses.

If located in high precipitation area, defined as an area that receives 600 mm of rain from October 1 to April 1 of the following year, wood residue storage must be covered during this period of time.

If located in a vulnerable aquifer recharge area, the following additional requirements must be met:

- If field-storing wood residue for 2 weeks or more, it cannot be located on coarse-textured soil
- If using a permanent storage structure, it must have a protective base (layer of soil at least 30 cm thick with a saturated hydraulic conductivity of  $10^{-7}$  cm/s or less or a material that does not allow for liquids to soak through)
- Permanent storage structures must be maintained and assessed for leakage at least once every 6 months
- Records must be kept of assessments and any corrective actions taken

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### FOR FURTHER INFORMATION CONTACT

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