#### WOOD ASH FACT SHEET



# Wood Ash Fact Sheet

## What Is Wood Ash?

Wood Ash is a residual product from the combustion of wood fibers for steam and/or energy production. It is a powdery residue largely composed of calcium compounds such as calcium carbonate and oxide along with other minerals composing the wood such as potassium, magnesium, phosphorus, sulfur, and many micronutrients. As such, wood ash can beneficially play a dual function in agriculture as a crop nutrient source and a soil pH amendment. However, wood ash quality depends on the industrial process and the type of wood fibers which were used to generate it.

The fertilizer/lime value depends on the type of wood burned, efficiency of the burner and if the facility separates fly and bottom ash. Bottom ash can have physical contaminants. The application rate should be calculated using the originating facilities wood ash laboratory analysis.

### Wood Ash Safety

Wood ash is a caustic product that requires protective equipment during its manipulation and application. Eye protection equipment, gloves, long sleeves, and masks are necessary when using very fine material such as wood ash powder. Wood ash may contain heavy metals. Concentrations varying from 3 to 10 ppm, 0.2 to 26, 16 to 137, and 0 – 63ppm respectively for arsenic, cadmium, lead, and nickel were tested in different wood ash materials. That is why wood ash requires a Canadian Food Inspection Agency (CFIA) Fertilizer label or the approval by NB Environment and Local Government for its applications on agricultural land.



#### WOOD ASH FACT SHEET

# Is Wood Ash a Good Fit for My Cropping System?

Most crops benefit from wood ash application. Especially crops that require lots of potassium such as legume forages, corn, soybeans, vegetables, and lowbush blueberries.

#### Lime Efficiency

Wood ash has both calcium carbonate (CaCO<sub>3</sub> - Aglime) and calcium oxide (CaO). Calcium oxide is highly reactive in the soil. It neutralizes soil acidity more quickly than regular lime (Aglime). However, for optimum lime efficacy, wood ash application rates must always be adjusted to its neutralizing power. Based on its Calcium Carbonate Equivalant value (CCE), typical wood ash application rates would be 2 to 4 times higher than regular lime.

#### **Nutrient Composition**

Typical wood ash fertilizer labels indicate 0–1-3 as N–P-K nutrient equivalents.

#### Macro-nutrients:

- Calcium- 7 to 33%
- Potassium- 3 to10%
- Magnesium- 1 to 2%
- Phosphorus- 0.3 to 1.4%

#### Micronutrients:

- Manganese- 0.3 to 1 %
- Zinc (200 to 800 parts per million (ppm)
- Copper- 40 to 150ppm
- Boron 0 to 600ppm, and
- Sulfur 0 5000ppm.

#### **Application Rate**

Application rate can vary between 2 and 5 tonnes /acre by season. Wood ash can be spread with a lime spreader or vertical beater manure spreader.

#### Wood Ash Best Management Practices

- Wood ash should not be applied on frozen or saturated soils to avoid run-off,
- Wood ash should not be stored and applied less than 100 meters from watercourses or 300 Meters from wells to avoid contaminating water sources,
- Wood ash should be applied uniformly with properly calibrated equipment.
- It is important to always consider the necessary soil pH adjustment required before meeting any crop nutrient requirement. Contact a professional agrologist if needed.



