Sustainability Newsletter

March 2014

Climate Change on a Local Scale: Mountain Pine Beetle

Climate Change is threatening forests around the world, particularly here in British Columbia. Mild temperatures throughout the winter months as well as dry warm winters caused by climate change have helped create the perfect habitat for the mountain pine beetle. These beetles kill pine trees by laying eggs under the bark, which then hatch into larvae that mine the tissue beneath the bark, eventually cutting off the tree's access to nutrients. In addition, the beetles carry a fungus that causes dehydration and reduces the ability of the trees to fend off the attacks.

In this issue:

Although the mountain pine beetle has always coexisted with pine trees in BC's interior forests, the change in climate over the last few decades, combined with widespread fire suppression of mature forests has allowed the mountain pine beetle to proliferate and spread across Canada and the USA. In 2009, the Ministry of Forests and Range estimated the damage at 16.3 million hectares, or 675 million cubic metres of timber. The damage is even more widespread now.

Another facet of the mountain pine beetle infestation is the suggestion that they have not only benefitted from the warming effects of climate change, but are now so widespread that the damage they are causing is contributing to climate change itself. Under normal, healthy conditions, forests act as carbon sinks, meaning they absorb the greenhouse gas carbon dioxide from the atmosphere through photosynthesises, storing it as plant biomass and in soil. When the trees die, they are no longer able to absorb carbon dioxide, and release stored carbon into the atmosphere, contributing to climate change and carbon sink destruction.

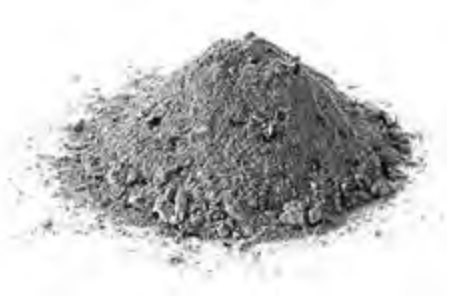
To manage a mountain pine beetle infestation on your own property, here are some steps you can take:

- First of all, to identify a pine beetle infestation, look for holes and dust created by the beetles drilling into the bark. Pay particular attention to old, slow-growing trees, crowded groups of trees, and newly planted trees in the landscape Check for pitch tubes, increased woodpecker activity, or discoloured needles. Then peel away the bark to expose larvae galleries and beetles.
- If you find that your trees are infested, log the trees and mill or debark them before the beetle flight season begins (July-September). The bark should be burned, buried or submerged under water (where environmentally safe).
- When replanting, choose tree species that are native to the area, and keep them healthy. A mixture of trees that are not susceptible to pine beetles and shrubs will help reduce mortality. Be sure to plant any trees and shrubs at least 10m away from your house and spread them 3-6m apart to help protect your house from forest fires during summer months.

This newsletter can be viewed online at:
www.rdbn.bc.ca/environmentalservices/recycling/sustainability-newsletter

The RDBN's Environmental Services Department is now on Facebook! Like us at "Sustainable RDBN"

Proper Disposal of Wood Ashes



On February 4th, 2014, fire crews responded to a fire in the Vanderhoof Transfer Station building, where smoke was billowing out of the roof and doors. Access was gained to the building and it was discovered that the fire began in the waste haul trailer. Fortunately, the fire was extinguished. The aluminum waste haul trailer sustained significant damage and portions of the building were damaged by smoke and heat.

At this time, the cause of the fire is unknown, however the Regional District would like to take this opportunity to remind the general public not to place ashes in the garbage. Ashes generated from the cleaning of wood burning appliances can retain heat over a very long period of time. Even if you may think they are not a hazard, when mixed with garbage waste, hot ashes can have catastrophic results. To learn about safer and more eco-friendly methods of wood ash disposal, take a look at some of the ideas below.

Eco-friendly Ways to Dispose of Wood Ashes

Before you dispose of your ashes using any of the following methods, make sure they have been left to cool for at least 2-3 days in a metal pail or garbage can and stirred often (hot ashes will melt plastic), this will ensure that there are no remaining hot embers.

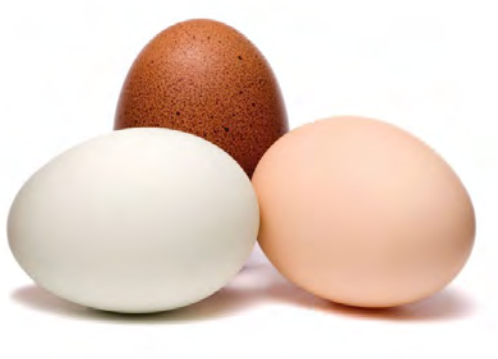
1. **Place wood ashes in the compost bin.** Ashes are a valuable source of lime, potassium, and trace elements, which can be a great addition to your backyard compost when added in small quantities. The main component of wood ash is calcium carbonate, which increases soil alkalinity, helpful in neutralizing soil acidic pH levels. When adding ashes to the compost bin, make sure to only sprinkle a small amount on each layer. Adding too much can ruin the mix.

2. **Place ashes around shrubs and perennial plants as fertilizer.** Using a cup measure, spread ash evenly on the soil around plants. Rake the ash into the soil lightly. Make sure not to leave ash in piles, because if it is too concentrated in one place, excessive salt may leach into the soil, damaging plants.
3. **Use ashes to de-ice your driveway.** Instead of using salt to melt ice on your driveway and walkways, which ends up in groundwater, try wood ashes. A generous sprinkle of ash on icy areas of your driveway will provide sufficient traction for anyone walking across the ice, with no harm to the environment or the concrete surfaces underneath. In the spring, the ashes will dry up and be blown onto your lawn and garden, helping to fertilize the soil.

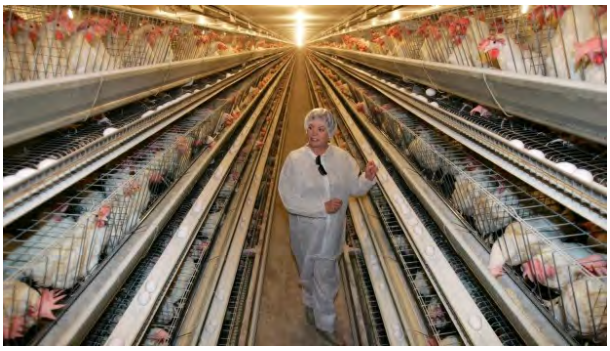
When using ashes in the ways described above, be sure to follow these guidelines:

- Protect yourself when applying wood ash. Wear eye protection and gloves. Depending on the fineness of the ash, you may want to wear a dust mask.
- Do not use ash from burning trash, cardboard (if it contains glue), coal, or pressure-treated, painted or stained wood. These substances contain trace elements, harmful to many plants when applied in excessive amounts.
- Do not use ash on alkaline soils or on acid-loving plants.
- Do not apply wood ash to a potato patch as wood ashes contribute to the development of potato scab.
- Do not apply ash to newly germinated seeds, as ash contains too many salts for seedlings.
- Do not add ash with nitrogen fertilizers such as ammonium sulfate (21-0-0-24S), urea (46-0-0) or ammonium nitrate (34-0-0). These fertilizers produce ammonia gas when placed in contact with high pH materials such as wood ash.

White Eggs, Brown Eggs, Organic Free Range Eggs: What is the Difference?



Have you ever stood in front of the egg section at the grocery store wondering which eggs to buy and why? You may have asked questions like "Are brown eggs healthier than white ones?" "What is the difference between free run and free range?" "What does Omega 3 mean?" By reading the following tidbits on these types of eggs below, you may find yourself reaching for a different type than usual the next time you go grocery shopping.



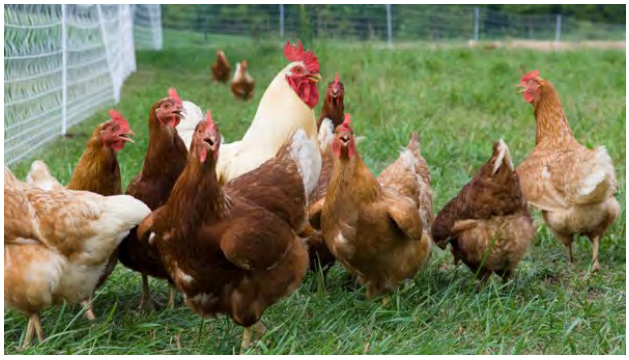
Regular Commercially Produced Eggs: More than half of the world's eggs are produced commercially, by hens housed in battery cages (see picture to the right). The cages are designed to be slanted so that eggs will roll into automatic collection systems. Most of these chickens spend their whole lives in these cages and are fed hormones and antibiotics to improve egg development and prevent disease in their close quarters.

Brown Eggs vs White Eggs: There is no nutritional difference between brown and white eggs. The colour of the egg is simply based on the genetics of the chicken that laid it.

Free-Run Eggs: Free run hens are allowed to roam in open range barns, but do not necessarily have access to the outside environment and may not have access to natural light. However, they are usually provided access to nests, perches and litter.

Free-Range Eggs: Free-range eggs are laid by hens that have the opportunity to go outside. The chickens might travel in and out of a barn at free will or spend some portion of their day roaming outdoors. Studies have shown that there is no discernable difference in the nutritional value of free-run, free-range or organic eggs.

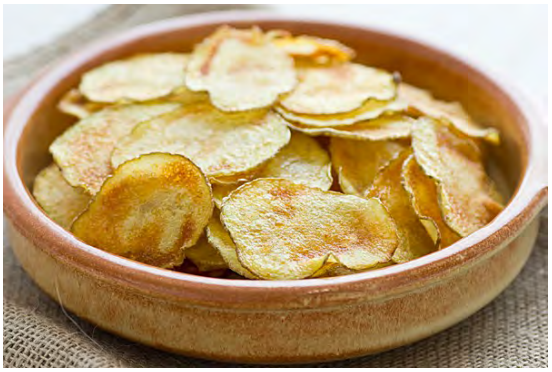
Omega 3 Eggs: The only difference between regular eggs and Omega 3 eggs is that the hens are fed with Omega-3 fatty acid sources, such as flax seed. Therefore, the Omega 3 fatty acids (DHA and EPA) that they feed on are also present in the eggs at higher levels. The hens are confined to cages, unless otherwise stated.



Organic Eggs: Organic hens meet Canadian health and welfare standards with open-range barns, natural light indoors, free access to pasture outdoors and always have access to nests, perches and litter. They are also fed 100% organic feed and are provided with clean, fresh water. The process for farmers to become certified organic can be extremely costly, so there may be many farmers that produce eggs in a similar manner without the certification.

The healthiest and most environmentally friendly eggs are those that are produced locally, in a free range or organic setting. Farmers markets provide great opportunities to ask questions about how egg-laying hens are raised.

Healthy Potato Recipes



These homemade potato chips baked with a hint of olive oil are healthier and even more delicious than store-bought chips! You can use a variety of root vegetables for this recipe, or simply stick with russet potatoes. Either way, these are delicious!

Baked Potato Chips

Ingredients

Russet Potatoes

Sweet Potatoes

Sea Salt

Olive oil

Optional: Spices—try chili or cumin

Directions

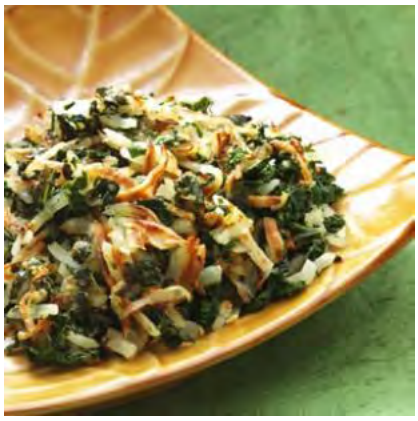
Preheat oven to 390° F.

Wash and dry potatoes, leaving skin on (you can peel them if you like). Using a mandolin slicer or a food processor with a thin blade, peel very thin slices and lay on a towel, pat dry. Toss the potatoes slices in a bowl with a drizzle of olive oil, sprinkle with salt and optional spices.

Line a cookie sheet with parchment paper. Lay out the potato slices and bake in the oven for approximately 10 minutes. Watch closely near the end to make sure the slices don't burn.

Allow to cool, and enjoy!

Kale and Potato Hash



This recipe can be eaten at any time of the day. For breakfast, serve with a fried egg on top. For dinner, serve it as a side dish to your favourite meat.

Ingredients

8 cups torn kale leaves (about 1/2 large bunch), stalks discarded

2 tbsp Horseradish

1 medium shallot, minced

1/2 tsp freshly ground pepper

1/4 tsp salt

2 cups cooked shredded potatoes (boil potatoes until they can just be pierced with a fork but are not completely tender. Let cool slightly, then shred)

3 tbsp olive oil

Directions

Place kale in a large microwave-safe bowl, cover and microwave until wilted, about 3 minutes. Drain, cool slightly and finely chop.

Meanwhile, mix horseradish, shallot, pepper and salt in a large bowl. Add the chopped kale and potatoes. Stir to combine.

Heat oil in a non-stick skillet over medium heat. Add the kale mixture, spread into an even layer and cook, stirring every 3-4 minutes and return the mixture to an even layer until the potatoes begin to turn golden brown and crisp, 12 to 15 minutes total.