



# Compost Considerations

Spring is upon us and as such, so is the issue of spreading manure. With current fuel prices and economic conditions, it is important to look at the pros and cons of different manure handling systems. As fuel prices increase, the cost associated with spreading or hauling raw manure long distances is quickly making manure an expensive product to handle. On the other hand, with fertilizer prices rising, manure is valuable for its fertility benefits and less of a waste product. One important thing to consider is how to handle manure so that you get the "best bang for your buck" when it hits the field.

### Composting vs. stockpiling

A common misconception is that piling manure and letting it sit means it is composted. If you dig into that pile you will see that within three feet, the manure will look like it just came out of the barn, only drier; this is not compost. The fact is composting is an active process that requires management of oxygen and moisture of the manure, where stock piling requires simply piling it up and letting it sit. Composting manure is not a complicated process, but may not work for all operations. Here are the primary differences between composting and stockpiling:

- Both processes reduce moisture and volume, which means less weight and bulk to haul, however, there is a greater volume reduction with compost.
- Heat generated during the compost process kills many parasites eggs, disease spores, and weed seeds, where stockpiling does not, and may actually promote the growth of some of these parasites.
- Compost reduces flies by eliminating their breeding ground - stockpiling provides a breeding ground.
- Compost reduces odor quickly and the finished product smells like potting soil - stockpiling maintains the odor, and the middle of the pile will smell as bad as the day it is put on the pile.
- Nutrients in compost are stable and far less susceptible to leaching, where nutrients (especially nitrogen) in stockpiled manure are volatile and much is lost to the air and runoff.



The costs and benefits must also be looked at when deciding to either compost or stockpile. Compost costs more, but the benefits are more stable, useable nutrients.

With today's high fertilizer prices getting the most nutrients out of your manure is very important. Stockpiling is cheaper, but the downside is increased nutrient runoff and greater nutrient losses.

### Things to think about this Month:

- Compost Considerations
- The Use of Pasture Chemicals

*The North West Alliance Conservation Initiative (NWACI) is a partnership between 7 municipalities including, the county of Athabasca, M.D. of Lesser Slave River, Parkland County, Strathcona County, Sturgeon County, County of Thorhild, and Westlock County. This partnership also receives funding from the Alberta Environmentally Sustainable Agriculture (AESAs) program. The focus of the partnership is to promote and encourage the implementation of practices and techniques that will reduce the impact of agriculture on the environment. For more information or a no charge on farm consultation please contact Mike at 780-939-0602 or Jennifer at 780-939-0618 or [www.nwaci.com](http://www.nwaci.com).*

Continued on Next Page

## Compost Considerations...

This means that valuable nutrients are evaporating or running into water systems. If the raw manure has to be spread more than 4-5 miles away, composting can be of benefit by decreasing the volume to haul and spread. Compost can also be marketed to local gardeners and greenhouses.

When dealing with manure, determine if it should be stockpiled, or composted and consider what the best method is for your operation. If you are planning to apply the manure under 4 miles, spreading it raw and incorporating it with a disc in less than 24 hours will probably be the most economical and beneficial. If, however, you are planning to spread on no-till, pasture, hayland, or will be spreading more than 4 or 5 miles away, you may want to consider composting it first. Making compost is not a complicated procedure, but it does take some time and effort.

**“Ensure that compost is turned and aerated regularly.”**

### *The Mechanics of Compost*

Composting is an active process in a manure pile there are aerobic microbes (bacteria) which require oxygen, and anaerobic bacteria which will only work in an oxygen free environment. The aerobic bacteria break the manure down, and the anaerobic bacteria will ferment, or pickle it. In a stockpile situation the aerobic bacteria uses up all the oxygen, breaking down the outside 1-2 feet of the pile creating a seal, then, as there is no oxygen left, the anaerobic bacteria simply pickle the inside of the pile. Composting requires the aerobic bacteria to break down the whole pile, and therefore the pile must be kept well aerated.

To start composting, build a windrow by piling manure in a long line no more than 6 feet in height. The next step is to monitor the temperature and moisture. Moisture can be measured by squeezing a ball of the product. If you can squeeze it into a ball it's just right, if water is squeezed out of the ball it's too wet, and if it won't form a ball, it's too dry. Measuring temperature must be done with a compost probe which is a dial thermometer with a three-foot shaft. The temperature range for active composting is at 50-60°C. If the temperature rises above 60°C, check the moisture and turn the pile. If you find the moisture level is too low, add water. If the temperature falls below 50°C, check the moisture. If the moisture is sufficient, turn the pile. If the moisture is too high, add dry material like straw or shavings and turn the pile. The final stage of composting is the curing phase. If the moisture is appropriate and turning the pile does not cause a temperature increase, the curing phase is taking place. Let the pile sit for about 30 days to cure before using the compost. If done properly, composting should take between 70 and 80 days. The finished product should look and feel like peat moss, and should have no pungent odour.

By looking at the costs and benefits of both composting and stockpiling producers can determine what method is the best fit for the farm. If composting manure is a fit, more information can be found in Alberta Agriculture's "Manure Composting Manual", which provides detailed information on compost mechanics as well as regulations and worksheets.

### Events to Look for this Fall

- Well Abandonment demonstration — Date TBD
- Shelterbelt Workshop— October
- Water well Workshops
- Bus to Agri-Trade — November
- Farmin' The Net — Thorhild November 18 and 25th

Information from:

Alberta Agriculture and Food — [www.agric.gov.ab.ca](http://www.agric.gov.ab.ca)

## The Use of Pasture Chemicals

Having a healthy pasture means having a healthy plant stand. In many cases unhealthy pastures are full of hard to kill perennial weeds, shrubs and forbs. These plants decrease the productivity and rob valuable forage from the pastures. Many hard to kill weeds can be toxic to animals.

When proper pasture management is used these weeds can naturally be kept at low levels. In a poor pasture management situation these weeds can quickly take over and out-compete the grasses. When a land manager decides to look at changing management practices to turn the pasture around, one consideration may be to apply a herbicide to reduce the number of weeds in the pasture. There are various options when it comes to weed management in pastures. The first step is to determine the species present and at what level they are at. The next step is to decide what type of product should be used.

Most pasture products are broad spectrum and will kill most broadleaf plants. This includes any broadleaf pasture plants such as alfalfa, clover, vetch or pea vine. These broadleaf plants are nitrogen fixers which add nitrogen to the pasture system. There are a few products on the market such as Amitrol, Basagran, and MCPA Amine, that can be used to control weeds in some legume stands. For the case of this discussion we will assume that the land manager is willing to lose the broadleaf legumes in the pasture and that the weeds are hard to kill such as tansy, scentless chamomile, tall buttercup etc.

Some of the broad spectrum range and pasture products include Restore, Grazon, Remedy, Tordon 101, Lontrel, Escort, 2,4D and MCPA. Restore, Grazon, Remedy, Tordon 101 are Dow AgroSciences residual range and pasture products. Restore is used to control more common pasture weeds. The Grazon product is used for harder to kill weeds and small shrubs or forbs. Remedy is used for brush and tree activity which will control brush that is encroaching on pasture land. Tordon 101 will control hard to kill weeds. This product is best used for spot spraying as it is very water soluble and can move through the soil quickly. Lontrel is also a Dow AgroSciences product that can be used to control harder to kill weeds such as scentless chamomile and Canada thistle. This product has a reduced residual action therefore cropping restrictions are not as big of a concern. All of the Dow AgroSciences products are safe to graze after application except for dairy cows. Please refer to the label before application.

Escort is manufactured by E.I. DuPont and is best used to control tansy, kochia, russian thistle and scentless chamomile as well as western snowberry. This product has limited weed spectrum but works well for those listed. There are no grazing restrictions when using this product. 2,4D amine and ester can control some weeds in pasture but have limited control. MCPA amine, ester, K and Na salts are another option, the weed control with this product is somewhat limited. Grazing restrictions should be considered when using the 2,4D or MCPA products. All of these products can be applied by ground and some can be applied by air please refer to the label.

Once the pasture has been sprayed with the selected herbicide monitoring should be completed. With proper pasture management the grass should fill in the holes where the weeds and shrubs were to create a healthy productive pasture.

