



HORSES IN THE COMMUNITY... A YEA OR A NEIGH ?

INTRODUCTION

Work horses off and on the farm, transportation, hunting and a host of other tasks have been the history of horses in B.C. Today's horse does not play such a key role in maintaining our daily needs, yet, a recent study indicates that more than 75,000 horses live in B.C. with about 22,000 in the lower mainland. It is primarily those horses in the lower mainland that are discussed here, however, some of the information can be applied to horse owners living elsewhere.

With population growth and the high cost of land not all horses can enjoy running free on large pastures. Some are located on very small parcels of land or are boarded along with many others in large facilities. These situations, if not properly maintained, can lead to conflict, generating a variety of complaints.

Due to the potential for complaint from neighbours and others, today's horse owner must employ diligence in managing the areas where their horses are kept. Complaints of odour, noise, dust, flies, water contamination, along with a number of other concerns have been on the increase. In an effort to minimize complaints many local governments create rules and bylaws to establish and control the areas where a horse can be kept or used, as well as the activities that can occur.

The following information is intended to help the horse owner assess the way in which horses are kept and maintained and perhaps improve certain conditions for the benefit of the horse, the owner and the neighbour.

PASTURES

Looking after your pastures as a feed source for your horse, reduces the amount of feed that needs to be purchased. By matching the amount of grass available to the amount the horse will eat and by limiting access to the grass where necessary, overgrazing can be reduced. A rule of thumb is to remove horses from the pasture when the grass is less than 75 mm (3 inches). Overgrazing will cause bare spots, encourage weeds, and increase the risk of erosion and runoff into creeks and streams. It will also reduce productivity, increasing the need to obtain supplemental feed. Here are some tips that will help in grass production as well as to help protect the environment:

Mowing the pasture cuts all of the plants to the same height, preventing plants from getting too stiff and tough and from overshadowing each other.

Dragging can be done with a harrow, chain link fencing, a bed spring, etc. Drag this around the pasture to break up manure clods and spread them evenly throughout the pasture making nutrients available to the plants on a more even basis. Dragging will also kill worms and larvae as well as prevent 'sour spots'.

A **grazing** rule of thumb is to 'take half and leave half' of the plant. This ensures that the plant has enough preserved to permit rapid regrowth. Leave at least 50 mm to 75 mm (2 to 3 inches).

Cross fencing will allow for rotational grazing so that you can control the length of time horses are left in a given pasture.

Soil test every few years to control the soil pH balance and nutrient content.

Compaction restricts root growth and water movement into soils. Best advice is to keep horses off pastures in

wet months. If your soils are compacted, aerate in spring or early summer.

When reseeding, choose an early grass variety for pastures that allow an early spring access, or a later maturing variety for pastures that are wet in spring. Check with your local farm supplier for a recommended blend.

CLEAN WATER DIVERSION

A common problem to horse holdings in the wetter areas of B.C. is excess water and mud. This often results in damp stalls, hoof disease, wet feed, wet bedding and poor drainage in pastures, turn out paddocks and exercise areas.

Excess water in the form of roof water or uphill runoff can mix with manure in the horse confinement areas, and trickle through, to become wastewater. When this wastewater enters a ditch or stream it creates a water quality problem for fish and wildlife as well as for you and the people living downstream. *The intent is to 'keep water out of manure and manure out of water'.* One of the first things to look at is how you are handling roof runoff water and whether or not uphill water runs into horse areas.

Rain gutters on outbuildings equipped with downspouts leading to underground outlets will take care of roof water before it can get into horse areas.

Note: A 81 m² (900 square foot) roof in a 25 mm (1 inch) rain event will produce 2539 litres (558 gallons) of runoff water. There are all kinds of tips and hints available for the do-it-yourselfers to install gutters, downspouts and drainage.

Uphill water that accumulates and runs into areas frequented by horses can be diverted away, while still clean, into ditches and streams. The use of low, grassed, mowable swales, ditches or low berms are often adequate diversion devices. They are easily installed yet effective in keeping water out of manure areas.

SACRIFICE AREAS

A small enclosure, corral, pen or turnout area can be a sacrifice area. It is intended to be your horses' outdoor living/exercise area during the winter. It is called a sacrifice area because having horses on it can be damaging during the wet months, however, the rest of

your pastures will rest and recover over the winter and not become overgrazed, punched up, or compacted by unrestricted access.

Location: A sacrifice area should be located on high ground, away from low, wet areas. Preferably it should be close to the barn, manure storage and feeding area. To reduce the potential impact from runoff avoid wetland areas, set well back from surface water and frequently remove manure from the area.

CREEKS AND STREAMS

Horse owners that can look out over their land to see their horses grazing near a watercourse have the kind of view that is envied by many. Part of the cost of this view is the additional responsibility to ensure that the quality of the water is not impaired or degraded on its way by your property.

Horses that have free access to creek banks and stream beds will have a severe impact on the ability of the water resource to provide productive fish habitat, recreational, and aesthetic functions. Horses can trample stream banks and cause erosion, covering spawning gravels with silt, or trampling gravels that contain fish eggs. The landowner or user has a responsibility to adopt an ongoing role in preserving the integrity of the watercourse through environmentally responsible management and stream bank protection.

In most parts of the lower mainland providing water for horses is as simple as turning on a tap and filling a container. The size of the container depends on the number of horses it serves. Some horse owners have purchased waterers specifically designed for livestock use. The benefits are many in that some will not freeze, most are equipped with floats or shutoffs that limit spillage and some have drains to carry spillage away before runoff accumulates and flows into surface water areas. There are many home-built versions of livestock waterers but few offer little more than to be a holding vessel with little or no flow control.

Direct access to the creek is possible, but not recommended. Where direct access is necessary a sloped access and a properly installed fence that allows limited entry of the horse to a small area of the stream and allows for removal of manure from the ramp can be constructed. Fencing will protect the rest of the stream from direct access and subsequent degradation.

A large part of stream protection is accomplished by not allowing dirty water to access the stream. This can

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be done by diverting clean water away from areas where it contacts dirt and manure and, where necessary, diverting dirty water away from the creek to run across a grassed field to spend itself before it can enter the stream. In severe cases soiled water may have to be stored to prevent contaminating a stream. The stored water must then be spread at the appropriate time for irrigation.

Numerous articles have been published on stream bank protection and are available at the Ministry of Environment as well as Department of Fisheries and Oceans offices.

MANURE MANAGEMENT

Managing manure and bedding accumulations and caring for your horse is, for some, a difficult task. Improperly managed it can become a source of complaint for neighbours as well as a source of contaminants that will easily enter surface and groundwater. Manure management is often overlooked when planning for horses. When this occurs, accumulation of manure will happen quickly and a large pile of manure can grow in the wrong location seemingly overnight.

Some hobbies and businesses are simply not suited for the site available and plans must change. Likewise conditions exist on a property that make the keeping of horses difficult at best if not next to impossible. Not enough land, wet or boggy conditions, inadequate space for horse and facilities, unsympathetic neighbours, and improper local zoning are a few of the problems that may become sources for nuisance and pollution complaints. All of which can impact on manure management.

In B.C., horse manure is currently viewed as an 'agricultural waste'. What this means is, "like other farmers", agricultural wastes including manure and bedding must be handled as an organic fertilizer for the promotion of crops. It must go onto cropland, a pasture, hayland, vegetable field, etc. or it can be used as a soil conditioner. Adding manure to soil can improve the physical structure, aeration and permeability. A great deal of the contractor removed horse manure bedding combination is removed for use as a soil conditioner by topsoil companies. This then leaves two choices for the horse owner. Use it as a fertilizer on cropland, or release it to a secondary user, market gardeners, topsoil companies, greenhouse or container growers, etc. For those that do not have daily removal, some form of manure storage is required. Either a structure, a bin (for pickup), or a covered pile (see manure storage section).

It is unacceptable to have piles of horse manure left standing and exposed to the elements from year to year. The Waste Management Act requires that as a minimum, these piles are to be covered with a tarp from October to April. It is also well documented that piles left uncovered over this time frame contribute contaminants that result in ground and surface water degradation. This can include your own well water source.

MANURE STORAGE

Cleaning out the barn on a regular basis means that the accumulation of manure and soiled bedding has to go somewhere. As stated above, to be in compliance with provincial regulations under the Waste Management Act, manure must be used as a fertilizer or soil conditioner. It must be applied to cropland at a time of year when active growth is taking place, therefore some storage will be necessary for horse owners wishing to spread the manure/bedding mix on crop land.

Most horse manure piles are made up of a small amount of manure and a large amount of bedding, usually woodwaste, making it a less desirable fertilizer. Composting, or allowing it to break down over time will help, but is not always practical. One improvement that can be made to the carbon/nitrogen ratio is to practice caution when cleaning out the stall and remove only soiled bedding, leaving the bulk of it behind for another day.

Manure that is removed from the barn and left exposed to the elements on the ground, in uncovered bins or on concrete slabs will become saturated with rainwater and release a dark brown to black leachate that is highly toxic to receiving water. Water that flows along the surface of the ground to enter the standing manure pile will contribute to the flow of contaminants from the pile. Divert this surface water flow away from the pile well in advance of the contact area and allow it to enter a ditch or stream while still clean.

The best that you can do is to make sure that no manure/bedding mix is stored outside during the wet high runoff, high risk times. Spread it as a fertilizer or plan to have it removed before it has to be stored, say, by the end of September. The storage facility can then be planned and sized to house six months of accumulated manure/bedding for those that must store it on the farm. A roofed enclosure or a very large tarp will likely be the only way of ensuring that the pile does not leach contaminants during the storage period.

Note: A 455 kg (1,000lb) horse produces 26 litres (0.92 ft³) of manure per day; when an average bedding use is added the figure almost doubles to 56.6 litres (1.9 ft³) per day. This is a lot of storage area for only one horse; consider 10 horses over six months, and it becomes a pile that is 102 m³ or approx. 7.5 m x 7 m x 2 m deep (24 ft x 24 ft x 6 ft).

RIDING RINGS

To maintain an outdoor riding arena or track that has clean, safe footing, is fairly easily maintained, that holds up in all kinds of weather and does not cause pollution requires planning and hard work.

When located on low land the potential for contamination is high. Riding arenas located on high dry land have proven to be the most trouble free and maintainable.

Earth moving equipment may be required to level the site and create diversion ditches, where required, to redirect clean water that would otherwise enter the site. Leveling the site beforehand eliminates the practice of leveling with woodwaste as a landfill and creating a potential source of contaminated runoff.

Setback the riding ring from a watercourse by 15 m to 30 m (50 ft to 100 ft) where woodwaste is used as a footing. Provided the riding arena is not used as a

paddock, a corral or for feeding, and any manure is picked up after each use, the distance to the watercourse could be kept at the lesser 15 m (50 ft) distance providing the land is relatively flat and not sloping towards the creek.

Woodwaste use must not exceed a total depth of 45 cm (18 inches) and the maximum application rate must not exceed 15 cm (6 inches). The best time to top-up woodwaste is in April or May.

Look at alternate footing materials to replace woodwaste where wet land is a problem. Sand, combinations of sand and woodwaste, ground up rubber from tires and a host of products that are intended to improve the riding arena footing. Talk to other horse owners that have experience with riding rings; or contact your horse club to find out what is best for your situation.

FLIES

The stable fly is about the same size as a house fly. They are found around horse stables, loafing areas and other horse housing facilities. The flies prefer sunny, outdoor conditions although they will enter buildings and breed there. Flies will breed in piles of manure mixed with bedding, decaying hay, spilled feed. They are a pest and feed actively on livestock and will attack humans. The female will lay up to 800 eggs, usually in groups of 25 to 50. Eggs are laid in media that contains a large amount of vegetative matter such as soiled



bedding, rotting hay, fermenting feed or piles of rotting grass or other decomposing plant material.

At summer temperatures the eggs hatch in 1 to 2 days. The entire life cycle (egg to adult) can take 13 to 18 days.

There is a lot of readily available information published on the principles of fly control. A mixture of cultural, biological and chemical control measures are sometimes required.

Cultural control of flies means proper management of the manure, feeds and facilities. Remove the manure or keep it very dry. Prevent feed spoilage and keep feed dry. Keep feeding and watering areas dry. Ventilation in the barn will promote evaporation of in-barn moisture.

Biological control methods include predator mites and beetles that kill flies and larvae. The success rate is improved in dry manure, as wet manure impedes their movement. Chemical treatments can be damaging to the overall predator populations.

Chemical control methods should be used in conjunction with cultural and biological methods. Methods of using chemical insecticides are as adulticides (baits, surface sprays, misting) and larvicides (spraying breeding sites and using feed additives). Extreme caution must be used when

applying insecticides, follow labels and application methods. The best advice is to employ a licensed pest control professional where flies have become a serious problem.

RODENTS

Rodents such as rats and mice are widespread, destructive and contaminate and destroy feed, buildings and spread disease. To effectively ward off rodents, constant vigilance is necessary. They can be destroyed or controlled by rodent proofing buildings, adding screening to ventilation (windows) openings and keeping buildings in good repair. Also eliminate harbourages or nesting sites, keep weeds and grass around buildings short and free of debris, piles, and boards. Keep all feed in covered containers, remove food and water supplies for rodents and maintain good sanitation. Keep garbage in covered containers and remove waste and trash.

In extreme cases poisoning or fumigating will be necessary. This can be dangerous to humans, pets and livestock. Best advice is to hire a professional exterminator to conduct a thorough program. Once the infestation is under control it is relatively easy to keep it that way.

Definitions

Woodwaste: Includes hog fuel, mill ends, woodchips, bark, shavings and sawdust but does not include demolition waste, construction waste, tree stumps, branches, logs or log ends.

Stream: Includes a natural watercourse or source of water, whether usually containing or not; groundwater; a lake; river; creek; ravine; sway; or gulch.

High rainfall/high risk time: Refers to the months of January, February and March in the Lower Fraser Valley and parts of Vancouver Island when there is a high risk that runoff from manure left standing or when spread on land.

Moderate rainfall/moderate risk period: Refers to the months of September/October and February/March in the Lower Fraser Valley and parts of Vancouver Island when extreme caution must be taken when spreading manure. Avoid bare land, stay back 10 m (30 ft) from ditches and streams. Contact your local Ministry of Environment office for copies of the *Manure Management Guidelines* for the Lower Fraser Valley.

Covered manure pile: It is a requirement under the *Waste Management Act* that field stored manure or uncovered manure piles be covered securely with a waterproof material from October 1st to April 1st inclusive.

A Quick Survey of Your Horse Areas

Please review the following and fill in the boxes. This self-conducted survey is intended to help the horse owner identify areas where pollution or nuisance conditions exist. Once identified, a plan can be developed and changes put in place to correct problem areas. You can join the ranks of many horse owners that keep their horses in an environmentally sound manner. With your help in reducing the number of pollution and nuisance related incidents, local governments may not require legislative solutions, or more zoning that may limit the areas where horses can be kept and/or used. There would be less of a need for regulatory agency involvement.

Pastures:

Are your pastures well managed, free of weeds, and not 'punched-up', overgrazed or compacted?
Yes No

Clean Water Diversion:

Is clean water from uphill sources diverted away from horse areas?
Yes No

Creeks and Streams:

Have you fenced off, or otherwise prevented direct horse access to creeks and ditches?
Yes No

Manure Management:

Is manure adequately managed to avoid standing piles?
Yes No
Are manure piles adequately covered all year around to protect them from the elements (rain, snow)
Yes No

Manure Storage:

Are tarps, roofs or other storage structures used to prevent manure exposure to rain and snow?
Yes No
Is it sized to meet your needs, i.e. until spread or removed by others?
Yes No

Riding Rings:

If woodwaste is used as a footing, is uphill runoff water diverted?
Yes No

Flies:

If flies are a problem, have steps been taken to control them?
Yes No

Rodents:

Where rodents are present, have steps been taken to control them?
Yes No

If you answered no to any of the above questions, then you should obtain more information or seek assistance to address problem areas. See next page.

If further assistance is required, some answers may be found in the following literature available by contacting Horse Council B.C. (HCBC), your nearest B.C. Ministry of Agriculture and Lands office (MAL), or Alberta Agriculture.

An Introduction to An Environmentally Friendly Horse Farm Brochure, HCBC

An Introduction to Handling Horse Manure Brochure, HCBC

Building an Environmentally Sound Outdoor Riding Ring, Factsheet 386.000-7, HCBC, MAFF

Pasture Fencing for Horses, Factsheet 307.260-3, Ministry of Agriculture, Food and Fisheries

Watering Livestock Directly from Watercourses
Factsheet 590.303-1, MAFF

Field Storage of Solid Agricultural Waste, Factsheet 383.100-3, MAF

Woodwaste Use – Precautions to Horse Owners!
Factsheet 655.000-2, MAFF

Horse Handling Facilities, Booklet,
Alberta Agriculture, Agdex 460/722-1

The Basics of Horse Pasture Management, Factsheet 649.000-2, HCBC, MAFF

Horse Pasture Renovation, Factsheet 649.000-1, HCBC, MAFF

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