

Stay Back!

Manure Application Setback Distances

When applying manure, remember to obey *all* manure application setback guidance outlined in your Nutrient Management Plan. These distances are in place to help you avoid applying too close to a water body or sensitive area when the risk of runoff is high. When in doubt: stay back **40 feet** from all waterways from September 1- April 15; **10 feet** from April 16 - August 31; minimum **40 feet with a big-gun** at all times of the year; and **80 feet** from October 1 - February 28. If you have questions about what your individual guidelines are, give us a call.



Jan	Feb	Mar	Apr 1/15	May	June	July	Aug	Sept	Oct	Nov	Dec
80	80	40	40/10	10	10	10	10	40	80	80	80

Practice Low Risk Application

It is your responsibility to follow all guidelines in your DNMP and use your best judgment when applying manure. Always err on the side of caution to prevent unwanted discharges. Manure application practices that cause a discharge can lead to fines and/or necessitate a CAFO permit for your facility. The Whatcom Conservation District and the NRCS assume no responsibility for inappropriate manure application. **Proper application is ultimately your responsibility.**

If you would like email updates on current weather alerts, manure application tips and timing, and other important information, please email us your request and we will put you on the list (nembertson@whatcomcd.org). (This list will NOT be distributed).



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Photo: Jorinde van Ringen

A Connection to the Whatcom Dairy Community

Whatcom Dairy News

Got Topic Ideas?

This quarterly newsletter is being sent to you in an effort to keep you up to date on important information, discuss topics of interest, and provide you with seasonal tips for manure and crop management.

Staying connected and keeping up to date on the most current guidelines and management issues will keep you ahead of the curve and avoid risk.

We want you to succeed!

If there are any topics of interest you would like us to address in future issues, please feel free to let us know.

For more information go to:
www.WhatcomCD.org



Manure Application Timing When can I start to apply manure?

Manure application timing should be assessed uniquely every year on every field. Try not to rely on dates, but rather by when your plants and fields can use the nutrients.

The appropriate time to start to apply manure should vary each year and be based on field and weather conditions. However, many nutrient management plans use T-Sum200, February 15, or another specified date (see your Plan for details). The problem with this guidance is that it can promote application at inopportune times and damage fields. Folks who apply based on their field conditions, weather conditions and crop needs have far less potential for a manure runoff event, do less damage to their fields, and supply their crops with manure at optimum times, which can lead to an increase in yield. Instead of going by set dates, it is better to apply based on the following criteria: forecast (precipitation), soil moisture, water table, and field conditions. (See article on "Watching the Weather")

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T-Sum200 What is it and how should you use it?

T-Sum200 was originally developed as a tool to gauge when nitrogen fertilizer should be applied to provide nutrients for the start of forage growth. It is the sum of the difference in the high and low temperature units (daytime high minus low temperature) in Celsius starting January 1. Once it reaches 200, it is assumed that grass growth has begun. The limitation is that it does not account for weather conditions, which can be very unfavorable for manure application at T-Sum; nor does it consider that manure nitrogen needs time to be transformed by soil microbes into a plant usable form. When T-Sum is utilized for manure application timing, it is typically misused. Therefore, **T-Sum200 should be used as a management tool to help you gauge forage growth, not as a date for manure application timing.**

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Manure Application Timing

her” for more details).

Do not apply if you have saturated fields, fields frozen down more than 1 inch, a perched water table, sparse vegetation (<50% density), or if we are expecting more than



0.5 cumulative inches of rain in the two days following the day of application. By avoiding all of these factors, you can significantly decrease your chance of having a discharge event.

When applying manure in the late winter or early spring, try and apply your thicker, more nutrient dense manure.

This allows you to apply the same amount of nutrients, but with less volume. It is better for your crops and soil, and when manure setbacks are followed, does not increase runoff concerns.

Go to www.WhatcomCD.org for more info on **Application Risk Management (ARM)**. There you will find a worksheet to guide you through a field evaluation process and help determine when application is best for your fields. For applications outside of the dates in your plan, call us to work through an assessment and instructions. We make “field calls”!



Don't be a Lemming

Just because your neighbor is applying, does **NOT** mean that it is right for you.

Your field conditions and soil types may be different than your neighbor and you should apply based on those criteria.

Don't let someone else cause you to make a mistake!

How Much Rain Have We Had?

Paying attention can help you maximize storage

Rainfall timing and amount is something we have no control over, but that greatly affects storage capacity, manure application timing, and liquid manure nutrient content. By paying attention to the monthly rainfall amounts in your area, you can manage these factors and better predict your storage capacity for the winter months. If your storage capacity is being maxed out each year, maybe its time for a clean water assessment.

Many people feel that we have had more rain this winter than last. Is that true? The table to the right (Table 1) shows the average monthly rainfall for the Lynden area for the last four years (2007 to 2011). What you'll notice is that we have had similar total rainfall each year; the bulk just tends to fall during different months each year. For instance, in 2010 we had more total rain than 2009, but less rain during the October to February storage period. So the answer is no, we have not had more rain this winter, it just came later than normal, so it seemed like more.

Knowing historical and seasonal rainfall amounts can help you assess your annual storage limitations and identify areas that need improvement on a yearly basis. See our website for a historical rainfall analysis of your area.

Tracking annual precipitation amounts with your own rain gauge, or with websites like *Weather Underground*, will help you evaluate your storage and adjust your rainwater collection accordingly. If you would like a rain gauge for your farm, just contact us at WCD. We now have them available for **FREE!**

Table 1. Precipitation amounts in inches for Lynden, WA (www.wunderground.com). Your annual rainfall will vary depending on your location in the County.

Month	Year				
	2007	2008	2009	2010	2011
Jan	6.77	4.24	6.80	5.20	8.60
Feb	1.19	2.47	1.53	3.69	2.80
Mar	0.77	3.81	3.79	4.29	-
Apr	0.04	1.86	0.09	2.60	-
May	1.41	2.07	0.04	3.99	-
Jun	2.34	2.55	0.58	2.07	-
Jul	1.48	0.53	1.13	0.02	-
Aug	0.55	4.20	2.03	1.13	-
Sep	4.83	0.81	1.87	5.63	-
Oct	4.09	2.86	7.07	2.07	-
Nov	2.92	8.81	8.00	2.27	-
Dec	7.40	3.71	1.42	4.44	-
Total (year)	33.79	37.92	34.35	37.40	11.40
Winter Period:	2007-08	2008-09	2009-10	2010-11	
Total (Oct-Jan)*	18.65	22.18	21.69	17.38	-

*Your winter storage months may vary. Add additional months (i.e., Sept or Feb) to the winter “Total” to predict your storage needs.

Assessing Field and Weather Conditions

Why it is important and how it can help you manage your manure better

Paying attention to the weather and field conditions can help you minimize any potential environmental issues such as runoff, and help you to maximize your manure use and deliver available nutrients to your crops when they are most needed.

The following weather parameters are simple things that can help you manage risk and your manure better if checked on a regular basis before **every** application event.

Precipitation

Rainfall is the number one weather parameter you should check prior to **every** manure application event. Too much rain (**over 0.5 inches**) can lead to a surface runoff event, while a little rain (**less than 0.15 inches**) can help remove manure from the leaf surface and help it incorporate into the soil, limiting ammonia volatilization and runoff losses. If more than 0.5 inches of cumulative rain is predicted in the two days following the day of manure application, it is recommended that you wait to apply until a better time. This can be difficult if you are relying on a custom applicator, but easy if you do your own application.

Rule of thumb: In the two days following application, if expecting...

- ◆ Over 0.5 inches = do NOT apply
- ◆ less than 0.05 inches = apply with caution on *non*-saturated soils

Soil Moisture

One of the primary things that effects the potential of a runoff event from your field is soil moisture. If your field is saturated, even a little bit of rain or manure application can cause runoff. If your soil moisture is low and the seasonal water table is below two feet, you may not experience any runoff issues with even 0.5 inches of rain. Each soil type is

unique, so pay attention to how much rain we have had and monitor your soil moisture prior to applying. You can do this with a meter or by hand (see WCD's webpage for guidance on how to do this).

Ambient Temperature

The ambient temperature will help you determine what type of losses you may experience from your manure-N. Hot weather (over 70 degrees), will increase ammonia volatilization losses from your applied manure, leading to less nitrogen available for your crop. Very cold weather (below 32 degrees) may lead to frozen soils or manure, which can runoff at thawing. Applying when a hard frost is expected can also damage your crop. In the summer, apply manure in the early morning or late evening when it is cooler, to help decrease ammonia losses and reduce odor drift to surrounding neighbors.

Soil Temperature

Soil microbes are responsible for converting the nutrients in your manure to a useable form that your crops can use. Below 40 degrees, microbes tend to be dormant and little conversion is taking place in your soil. Above 40 degrees, soil microbes begin to convert the organic and ammonia nitrogen in your manure to a useable form (nitrate).



If applying manure in the early season, be sure to monitor your soil temperatures so that you can apply manure as your soil microbes and grass growth begins to activate.

Wind Speed and Direction

Paying attention to wind speed and direction is important for determining ammonia volatilization, odor transport, and drift from applied manure. Knowing which way the wind is blowing can help you alleviate any neighborhood issues that may arise. If applying with a big gun, wind speed can cause big problems if manure drifts into nearby streams or neighbors. A wind speed of 10 mph can carry irrigated manure 30 feet or more. Do not apply with a big gun if wind speed can cause a drift problem, and stay back 40 feet from waterways at all times.



Can't Wait to Apply?

If your lagoon is full (within 12 inches of the top) by January, and /or you find yourself needing to apply in risky times before your field conditions are optimal, consider taking a look at your storm water management. Talk to us about possibly reducing the about of slab water you collect, or identify and fix areas in need.

Weather Resources

Our website (www.WhatcomCD.org) has many resources and links to helpful weather and forecast information, including a 4 day precipitation forecast and discussion on upcoming weather events. Just click on “Weather” at the top of the homepage.

REMEMBER: Instead of trying to hurry and get your manure out before the rain hits, change your perspective, and instead, wait until the rain event has passed. This will be better for your crops and have significantly less potential for a runoff event.