Seasonal Guidelines for Applying Manure

✓ Areas to Apply
✗ Areas to Avoid

SPRING

- ✓ Apply manure prior to tillage.
- ✓ Apply manure to no-till corn.
- ✓ Inject liquid manure using sweeps, which allows better soil/manure contact.
- ✗ Avoid applying manure on established alfalfa.
- ✗ Avoid spreading manure on snow or partially frozen soil.
- ✗ Avoid applying manure on saturated (very wet) soils.

SUMMER

- ✓ Spread manure on old hay fields.
- ✓ Consider using contained temporary storage.
- ✗ Avoid spreading manure on waterways and other areas of concentrated flow.

Storage note: If you have manure storage, avoid summer applications.

FALL

- ✓ Use manure as a mulch on fall plowed fields (post-tillage application).
- ✓ Apply manure before or after tillage on fall chisel plowed land.
- ✓ Apply manure on corn fields after silage harvest.
- ✓ Apply manure on fields rotating out of hay, if they will be fall-tilled.
- ✓ Inject liquid manure using sweeps.
- ✗ Avoid spreading manure on no-till corn, established alfalfa, and other smooth surfaces that do not catch or store water.

Storage note: If you DO NOT have storage, consider leaving some low risk fields for winter and spring applications.

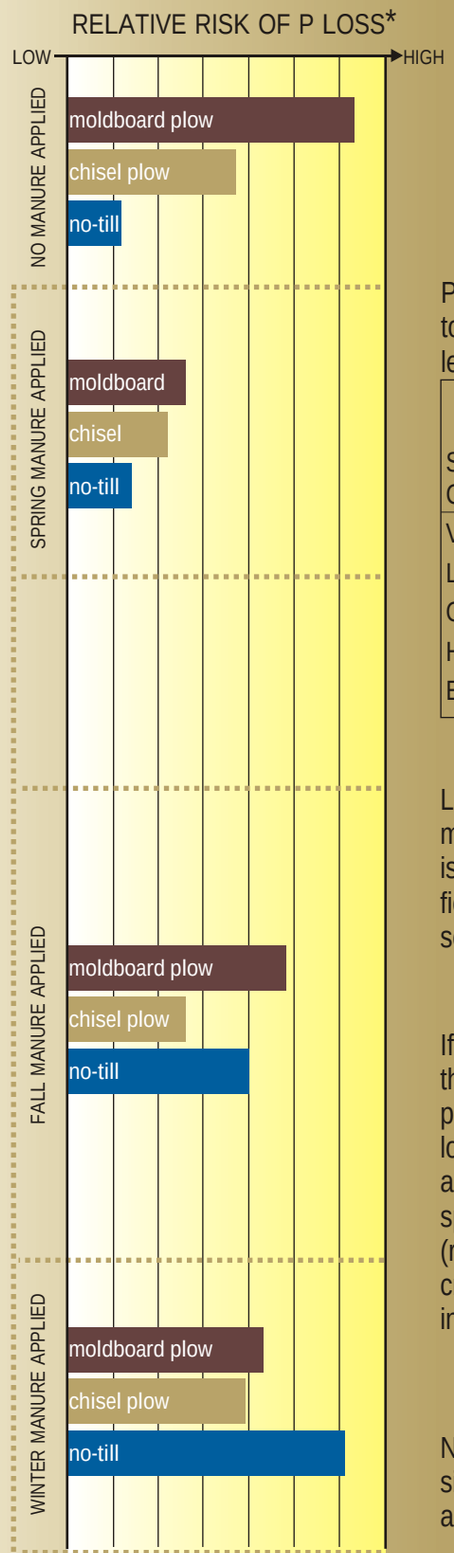
Storage note: If you DO have storage, plan to empty it at the end of fall (to accommodate the winter's build-up).

WINTER

- ✓ Apply manure on level, chisel plowed fields (in direction of plowing).
- ✓ Apply manure on areas protected from upslope runoff.
- ✓ Apply manure on fields with less than 6% slope.
- ✗ Avoid manure applications to slopes > 6%.
- ✗ Avoid spreading manure on no-till corn and alfalfa fields.

Storage note: If you have manure storage, avoid winter applications.

* Risk ranking based on Wisconsin P Index model; assumes moderate slopes, silt loam soil, 50 ppm soil test P and 25 tons of manure per acre.



Probability of yield response to applied P at various soil levels:

Soil Test Category	Soil Test P Level (ppm)	Probability of Yield Increase (%)
Very Low	<10	90
Low	10-15	60-90
Optimum	16-25	30-60
High	26-40	<30
Ex. High	>40	<2

Low testing fields use P more efficiently. Phosphorus is useful on low soil test P fields and not useful on high soil test P fields.

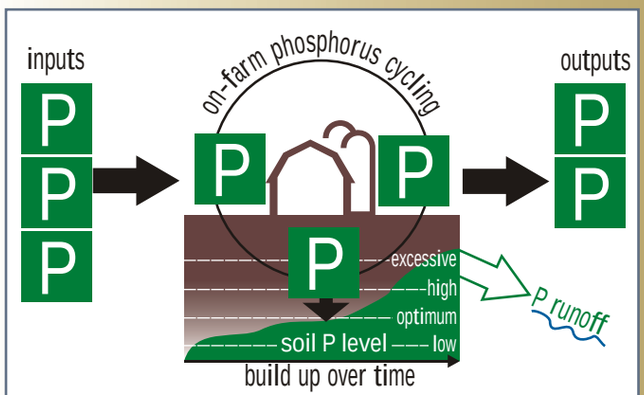
If your soil test P falls into the excessively high (>40 ppm) category, consider lowering the manure application rate and spreading on more acres (rented land, neighboring crop farmers, fields going into alfalfa).

Nutrient availability is similar for fall and spring applications.

Three Principles of Sound Phosphorus (P) Management

1. Aim for balance: P in = P out

Some ins are: fertilizers, manure, feed.
Some outs are: crops, meat, milk.



Phosphorus in runoff causes excessive algae growth in surface waters, which can reduce water quality of streams and lakes.

2. Minimize P loss: Keep soil and P on the farm

Use conservation practices that keep soil in field (i.e. buffers, conservation tillage, contour strips).

Follow setback guidelines (300 ft from streams and 1000 ft from lakes).

Avoid applying manure on frozen soil where slopes are greater than 6%.

Reduce dietary P to recommended levels.

3. Identify sites with low risk for P loss and use those for manure applications.

Use the Wisconsin P Index to help select fields that are least likely to lose P to surface waters (i.e. low P soil test, level fields, fields distant from a water body, rough surface fields).

Apply nutrients at the rate needed to meet soil test recommendations. Calibrate your manure spreader.

Don't forget about applying manure to fields rotating into legumes; legumes recycle substantial P and K, and can utilize manure-N.

How does manure affect runoff P losses?

- ❑ Manure applications reduce runoff volumes and soil loss.
- ❑ Incorporating manure increases sediment P losses (erosion), but decreases soluble P losses (runoff).
- ❑ Unincorporated manure acts as a mulch, provides surface residue cover, and decreases sediment P losses in runoff.
- ❑ Unincorporated manure increases soluble P losses.
- ❑ Spreading manure on no-till fields or on alfalfa in the fall and winter increases soluble P losses.

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When and Where to Apply Manure

Seasonal guidelines for minimizing phosphorus losses from manured fields