

# MANURE APPLICATION

To Protect Water Quality

Livestock manure can provide nitrogen and phosphorus needed for growing crops in Iowa. However, these nutrients can be transported from crop fields with surface runoff or subsurface drainage and cause harm to Iowa's water resources. Following best management practices for the application of manure can help reduce the potential for these nutrients to enter Iowa's water resources.



**TIMING** – *Delay manure application in the fall until soil temperatures are below 50 degrees Fahrenheit and cooling* to reduce the opportunity for manure nitrogen to be converted to nitrate and be lost to drainage tile or groundwater. To further reduce the potential for nitrate leaching, conduct as much land application as possible in the spring each year.

**LOCATION** – Conduct routine soil testing on manured fields to monitor phosphorus levels. Prioritize manure application on fields that need phosphorus (based on soil test recommendations). Use the Iowa phosphorus index calculator to assess the overall risk of phosphorus loss and avoid manure applications on fields with a phosphorus index rating of “high” or “very high”

**RATE** – Determine an appropriate manure application rate using manure management planning guidelines or the maximum return to nitrogen calculator. **Sample manure annually** and adjust rates accordingly. Account for any planned commercial nitrogen fertilizer application when determining the manure application rate. If fields have very high soil phosphorus, apply phosphorus based rates and then, if needed, supplement nitrogen with commercial fertilizer. Regularly calibrate manure application equipment to ensure accurate application rates.

**METHOD** – *Inject or incorporate manure within 24 hours* to prevent loss of nitrogen to atmosphere and to reduce the risk of nutrient runoff with rainfall.

**SETBACKS** – Avoid manure application in close proximity to streams and surface tile intakes. If manure is applied in close proximity to streams or surface tile intakes, inject or incorporate immediately. **Maintain vegetated buffers** along water bodies.

**WINTER APPLICATION** – Application to frozen or snow-covered ground is prohibited from many livestock facilities in Iowa unless it is an emergency. Review State regulations or contact your local DNR field office to determine if manure can legally be applied in winter. If manure must be applied in these conditions, apply in flat areas (<5% slope), far from streams and surface tile intakes.

