

# Analyze manure-hauling costs for savings

No matter what size herd you manage, you have manure-hauling options that are cost effective and environmentally sound

*By Peter Wright and Stephen Hadcock*

**There are nearly as many ways** to handle manure nutrients as there are dairy farms. To pick the most economical and environmentally sound method for your business, you need:

- The composition of your manure - its moisture content, volume and nutrient makeup.
- Your field locations, crop rotations and soils.
- Equipment needs if you handle both liquid and solid manure.
- A partial budget to determine your manure spreading costs.
- A nutrient management plan.

## Know your costs

Before changing manure-hauling methods, estimate your current manure spreading costs. It's no surprise that spreading costs increase as the distance from the farmstead to the fields increases (Figure 1).

The graph showing this was prepared using a computer spreadsheet developed by Raymond Massey at the University of Missouri. Using the spreadsheet, you can estimate current spreading costs and analyze alternative spreading methods.

If your hauling costs make manure spreading too expensive, then it's time to look at alternatives that allow you to make the best use of manure nutrients. Start evaluating alter-



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## FYI

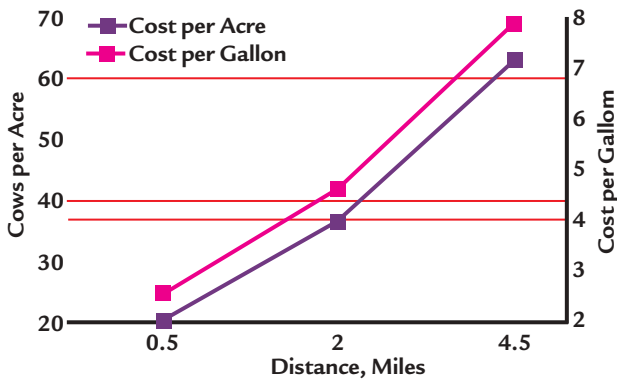
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■ For a copy of "Liquid Dairy Waste Transport and Land Application Cost Comparisons Considering Herd Size, Transport Distance, and Nitrogen vs. Phosphorous Application Rates," ASAE Meeting Paper No. 01-2263, contact the American Society of Agricultural Engineers (ASAE) at 2950 Niles Rd., St. Joseph, Mi 49085. Tel: (616) 428-6324. Website: <http://asae.frymulti.com> Cost: \$10, plus \$4.25 for postage and handling.

■ To use the Raymond Massey spreadsheet to evaluate your manure-hauling costs, go to the PRO-DAIRY website: [www.ansci.cornell.edu/prodairy](http://www.ansci.cornell.edu/prodairy).

**Figure 1. Manure spreading costs**



Source: Spreadsheet developed by Raymond Massey, University of Missouri

natives by examining equipment used to spread manure. In the spreadsheet example, manure was spread using a tractor and liquid manure spreader. As distance increases, a truck-mounted spreader becomes more cost effective in almost all instances.

**Economies of scale**

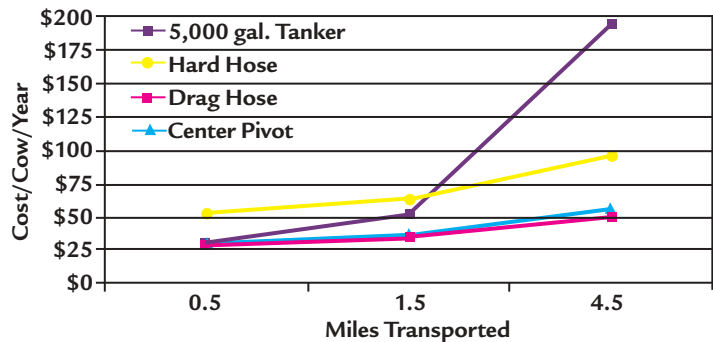
Figures 2 and 3 show spreading costs for two size dairies – 50 cows and 2,000 cows – moving manure various distances. For the 50-cow dairy, the tanker spreader is obviously the most economical. The \$78 cost per cow is reasonable for a half-mile hauling distance.

Compare this to the cost for a 2,000-cow operation hauling manure in a tanker the same distance: It achieves a \$25 per cow per year cost by spreading the capital costs of the tanker and tractor over more cows. Since most 2,000-cow operations haul manure farther than a half mile, the tanker becomes less economical for them. At 1.5 miles, it's cheaper to use a drag hose.

Smaller-herd sized dairies may not have the economies of scale, but they do have options. They might share manure handling equipment with a neighboring dairy or look into hiring a custom manure applicator.

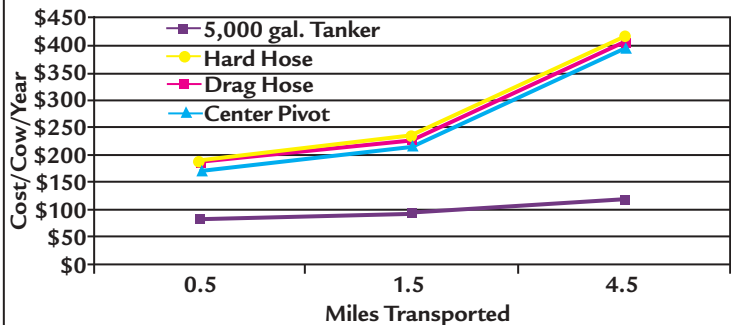
Before committing to this, get an estimate of custom operators' hauling costs and check whether they're available at critical times of the year. The fact that hiring someone to haul manure may improve the timeliness for other jobs, such as corn planting and hay harvest, should figure into the assessment.

**Figure 2. Manure spreading costs per cow for 50 cows**



Adopted from Daugherty, 2001.

**Figure 3. Manure spreading costs per cow for 2,000 cows**



Adopted from Daugherty, 2001.