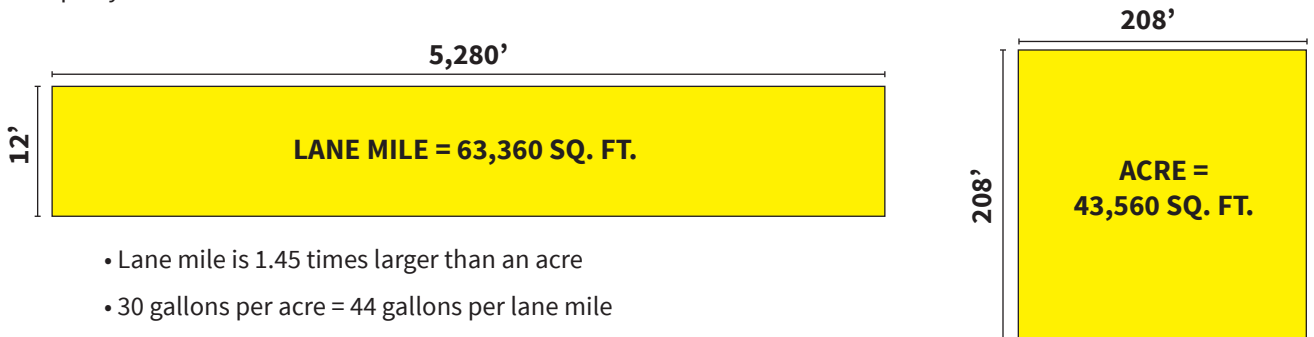


HOW TO CALCULATE LIQUID APPLICATION RATES

Equipment suppliers provide solutions with deluxe control systems, flow meters and GPS speed tracking that can take most guesswork and math out of the liquid application rate equation. But snow professionals should understand the fundamentals used to calculate liquid applications. These cornerstones will help you understand the control data, help you make informed decisions and track how much salt you are putting down and potentially saving. Thirty gallons per acre is a common application rate for pre-treatment and is used in the following equations. Evaluate each account and event and take into account pavement temperature and precipitation.

1 What are you measuring?

Determine if you prefer to use gallons per acre or gallons per lane mile. These commonly used measurements are equally effective.



2 How much salt are you applying?

Measuring how much salt or active ingredient is being applied is crucial to understanding salt savings. You can calculate how much less salt you are applying. There is ~2.3 lbs. of salt in a gallon of salt brine at 23.3% salinity.

$$\text{_____ lbs.} \times \text{_____ gallons} = \text{_____} \quad 2.3 \text{ lbs. of salt} \times 30 \text{ gal. per acre} = 69 \text{ lbs. of salt per acre}$$

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3 Translating your target application rate to gallons per minute

Once you know your unit of measurement (i.e., acres vs. lane miles) and have set a target application rate (e.g., 30 gallons per acre), you can calculate your actual gallons per minute of spraying. Key variables include:

- How wide is your spray boom?
- How fast are you traveling? The faster you travel, the higher gallons per minute required to maintain the same application rate.

FORMULA

In this exercise we calculate gallons sprayed per minute at a target application rate of 30 gallons per acre at 10 mph using a 3-lane, 8-ft. spray boom (24 feet of spray). Remember you can also use lane miles.

_____ × _____ = _____ Feet per minute you are traveling (1 mph = 88 feet per minute)
[88 feet x 10 mph = 880 feet]

_____ ÷ _____ = _____ Divide the total feet per minute traveled by a square acre
[880 feet / 43,560 square acre = .02]

_____ × _____ = _____ Multiply that figure by the gallons per acre you are targeting
[.02 x 30 gallons per acre = 0.6]

_____ × _____ = _____ Multiply that figure by the width of your boom spray
[0.6 x 24 = 14.5 gallons sprayed per minute]



QUICK TIP:

Once you know how many gallons you need to spread per site and the size of your tank, you will be able to better plan your routes and know how many sites you will be able to service before you have to refill.