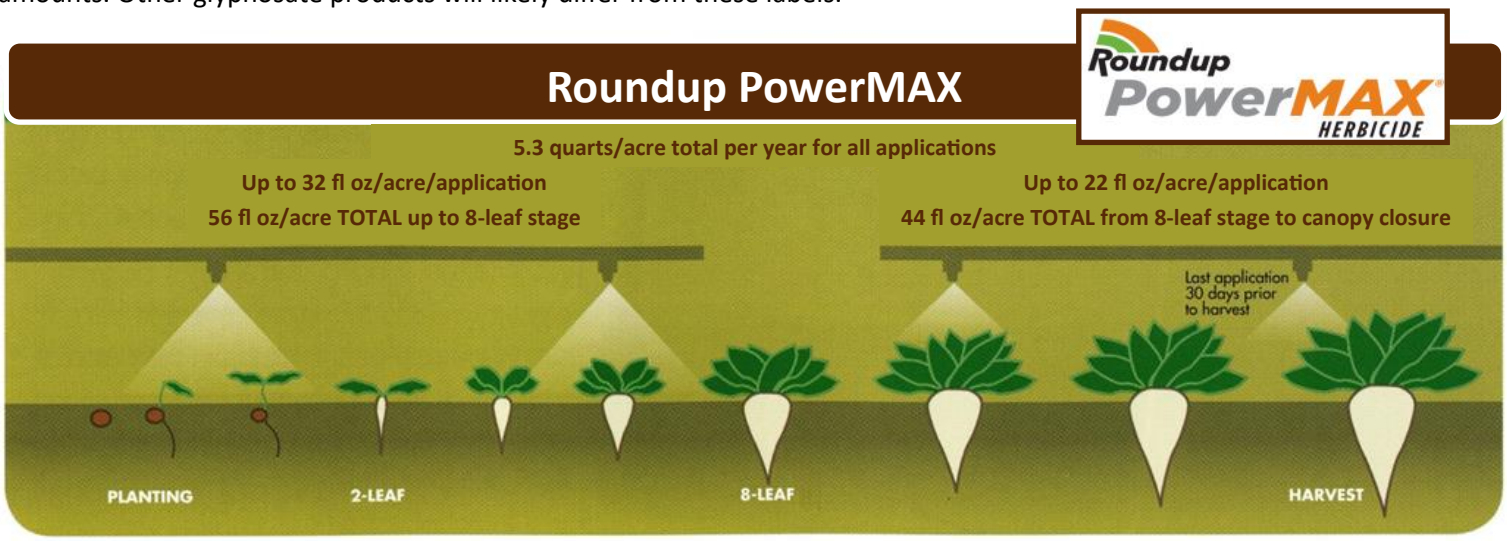
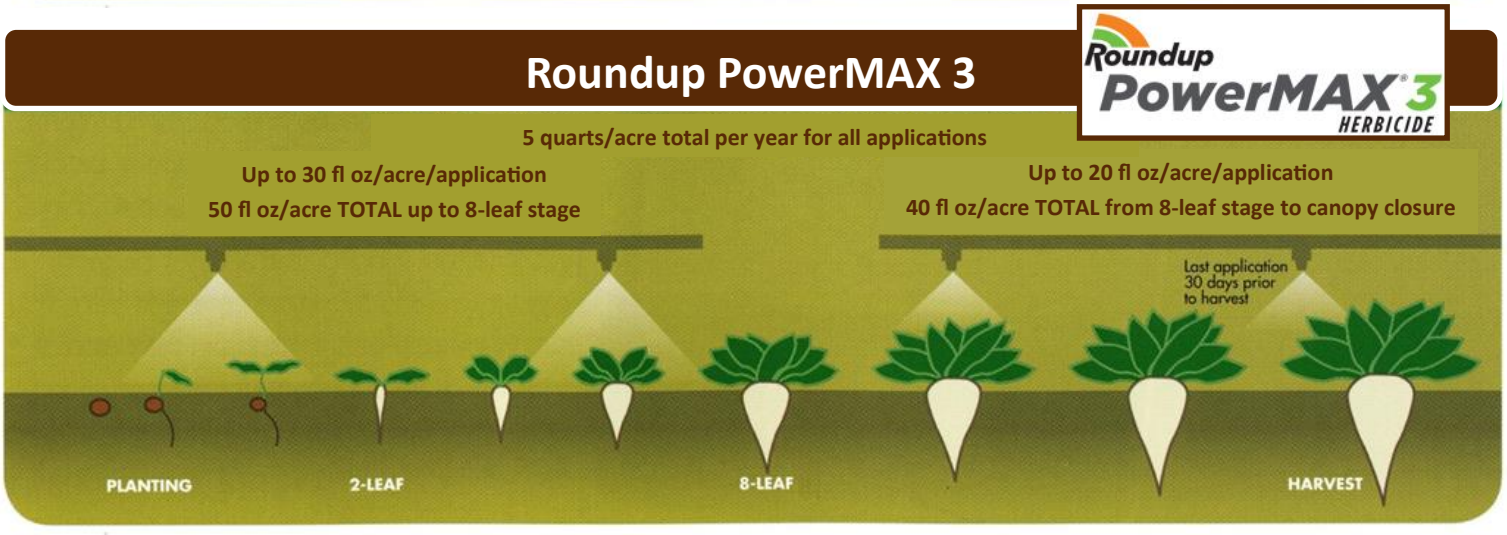
Roundup PowerMAX 3

Bayer has released a new formulation of glyphosate called Roundup PowerMAX 3. This formulation has a higher concentration of glyphosate acid equivalent-per-gallon; this means that the labeled application rates and the labeled maximum product allowed during the season have been reduced. Comparable sugarbeet use rates between PowerMAX and PowerMAX 3 are provided in the table.

Follow the label. Roundup PowerMAX and Roundup PowerMAX 3 will both be available in 2022. Make sure that the application rate used matches the correct sugarbeet stage; don't forget about maximum use amounts. Other glyphosate products will likely differ from these labels.

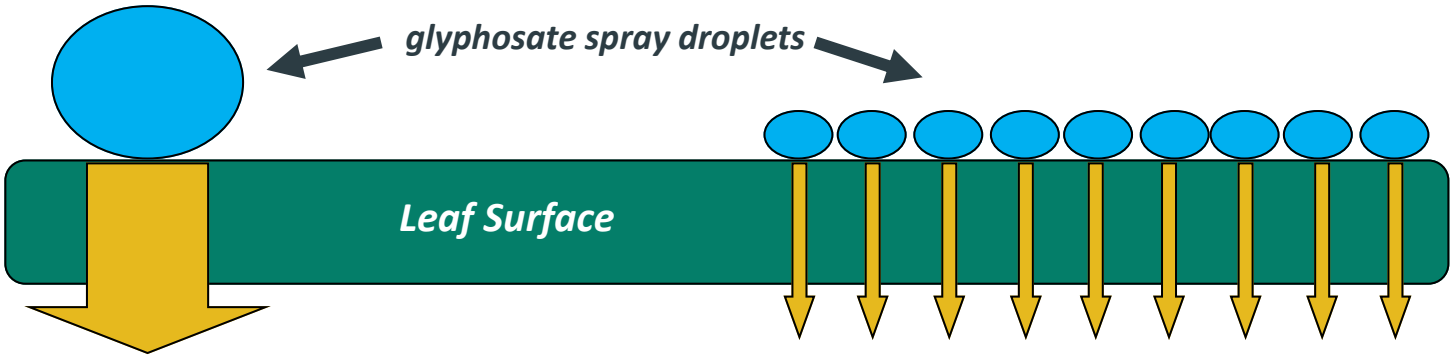
PowerMAX	PowerMAX 3
32 fl oz	30 fl oz
28 fl oz	26 fl oz
22 fl oz	20 fl oz





Getting the Most Out of Glyphosate

We've likely all heard the cliché, "If a little is good, more is better". For years we have urged you to use higher water volumes in conjunction with CLS fungicides to help achieve better coverage, increased activity, etc. However, herbicide applications are different. Dr. Rich Zollinger, retired Extension Weed Scientist from NDSU, showed multiple times that when it came to glyphosate applications, the concept is actually turned completely upside down — "LESS water is BETTER". Lower water volumes produce bigger spray droplets. This is a good thing for glyphosate applications because this practice results in increased adsorption of the herbicide into the target plant. The idea is that a bigger spray droplet will leave a "pile" deposit on the leaf surface. Dr. Zollinger explains it best with what he calls the **Pile Theory**:



Glyphosate is more phytotoxic when applied in one concentrated drop (i.e., a pile) than in nine dilute drops of equal size. This simple observation is why you should try to keep applied water volumes towards the lower end of the labeled range. With that in mind, consider nozzle configurations that deliver 10-15 gal/acre that produce medium to coarse droplet sizes at pressures between 25-40 psi. Flat fan nozzles seem to work best; avoid flood type nozzles. Keep applicator speeds to 12 mph or less.

Make Sure to Hit the Max

With glyphosate-resistant waterhemp, common ragweed, and kochia in the Minn-Dak growing area, know the maximum amount of glyphosate that can be used and make sure to use it. Reducing application rates only encourages the development of resistant weeds. A few other tips:

- Add AMS to enhance glyphosate adsorption and translocation, and to help deactivate antagonistic hard water salts
- Add NIS to improve control on hard-to-wet species such as common lambsquarters
- Apply when the humidity is high — glyphosate is highly water soluble, so its activity increases during humid conditions when the additional air moisture hydrates the plant cuticles
- Spray small weeds — target weeds that are less than 2 inches tall

The product label trumps this information at all times. Always read & follow label instructions.

Thank you to David Mettler, Research Agronomist at Southern Minnesota Beet Sugar Cooperative, for his contributions to this issue.