

Fall Fertilization of Alfalfa

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Results from an alfalfa plant analysis survey in Wisconsin in 2010 and 2011 showed sulfur (S) and potassium (K) are two nutrients about which producers should be concerned. Keeping this in mind will help guide decisions about fall fertilization after a very dry summer.

Soil testing prior to seeding alfalfa and applying recommended nutrients is standard practice. Though one word of caution is needed for 2012. Exchangeable K that is measured in a K soil test can be greatly influenced by very dry soil conditions. If soil test K levels, from samples taken in late summer or early fall 2012, are not what was expected, it may be advisable to assume the soil test is in the optimum/medium range and apply potash at rates recommended by State Cooperative Extension. If the upcoming winter and early spring's rainfall is near normal (i.e., the drought does not continue), then another soil sample can be taken in spring to guide applications for the stand next year.

Prior to seeding, it is best to work in any lime and phosphorus fertilizer that is needed for the crop. Phosphorus helps stimulate root growth and thus is important to have adequate levels at seeding. Manure can be used as a source of nutrients. If manure is not used prior to establishment, 50 lb S/ac could be applied to supply S.

For established stands of alfalfa, K applications are generally made after first and third cutting. Potassium applications may have been skipped after third cutting this year because of dry weather. If rainfall begins later in summer and there is time for alfalfa regrowth before winter, one might want to consider making a potash application after a cutting in late-August or early-September. The goal of this application will be to help improve winter hardiness.

As atmospheric deposition of S decreases, more S deficiency in alfalfa is seen; particularly in stands where it has been a couple years since manure was applied. When S is needed, a sulfate form can be applied after first or second cutting. A fall application of S may not benefit the crop and may not be cost effective if no other fertilizer applications are being made. Therefore, waiting to apply S until topdressing potash next spring would be appropriate.



Yellow areas of the field are sulfur deficient. Green areas show the response to sulfur fertilizer on a sulfur deficient alfalfa crop.