



## **New Alfalfa Seedlings Require Attention**

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It's a well documented fact that stress in the seeding year reduces future yields for the life of the alfalfa stand. This occurs because the seeding year determines the stand plant density, as well as, individual plant size and vigor. Of course we have no control over plant stresses like drought, but other stresses like: not managing a cover crop correctly, potato leaf hopper damage and autotoxicity problems can all be minimized.

Using a cover crop like oats to help establish alfalfa has been a common practice. Unfortunately, too much competition from a cover crop planted too thick or left on too long can stunt the young alfalfa seedlings. University recommendations call for cover crop seeding rates to be no higher than 1 bushel per acre with the cover crop preferably being taken off as silage. In a recent University study using Italian ryegrass (an annual) as a cover crop, yield reductions the year after the seeding year were 1.9 tons per acre at Arlington and 0.9 tons per acre in Marshfield. It would be reasonable to expect similar yield reductions when using oats as a cover crop.

In studies conducted several years ago, potato leaf hopper infestations in the seeding year reduced alfalfa plant size for the life of the plant. The smaller plants resulted in less yield in the following year, even when potato leaf hopper was not present or was controlled. Alfalfa permanently lost .25 to .05 ton per acre yield potential from the potato leaf hopper stress in the seeding year. The yield loss was greatest when a second stress like an oat cover crop also was present.

Alfalfa is autotoxic; established plants give off chemicals inhibiting alfalfa seeding germination and growth. Thus, interseeding alfalfa to thicken an established alfalfa stand is not recommended. Further, to allow the autotoxic compounds to be deactivated, when plowing down existing stands rotate to another crop for a year before reseeding alfalfa. Interestingly, we can get a good stand seeding as early as 2-4 weeks after killing the old stand, but the autotoxins will stunt the young, growing alfalfa plants resulting in reduced yield in the seeding year and 20 to 30% yield reductions in years following seeding.

The take home message appears to be clear; for top alfalfa yields, for the life of the stand, every effort must be made to reduce or eliminate seeding year stress. As a closing thought, don't forget to also evaluate basic establishment practices. Incorrect lime, fertilizer or seedbed preparation will also effect the seeding year and beyond.