

Should you apply nitrogen at this point?

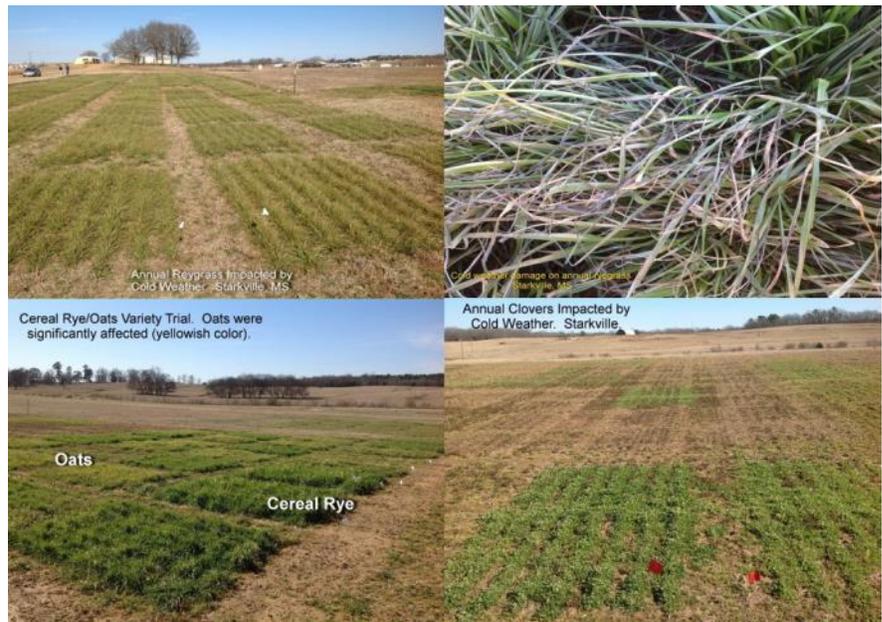


Yield responses to N fertilization are greatest if the N is applied and available at the time the crop makes its most rapid growth. When average temperatures drop below 50 °F, plant processes begin to slow down and growth is reduced. It is important to understand that under below extreme cold conditions, plants expend more energy and partition more biomass to their roots and less to their shoots (basically shoots down). This results in lower tiller number per unit area to utilize high rates of applied N.

Under the adverse cold weather conditions that Mississippi has experienced in the last couple of weeks, nitrogen applications to annual ryegrass should be delayed until daily temperatures has reach at least 50 °F for 3 to 5 days to ensure the nitrogen is used by the annual forage. Also, it is advisable to delay grazing for at least two weeks after N application in order to speed up plant recovery. This will allow for nutrient translocation and development of new roots as the weather returns to moderate, normal temperatures. Keep in mind that applying high N rates to annual ryegrass might not be beneficial because utilization might not be optimum and economic losses could occur. Small split applications might be more beneficial under this type of stressful condition.

How should grazing be managed?

Stocking rate is a critical factor to successful utilize winter annuals under cold conditions. Producers should take into consideration that stocking rate will vary more heavily due to the lower productivity of the pasture. Winter annual foliage (both ryegrass and annual clovers) may burn during severe cold spells and, therefore, tends to be lost if not grazed. Low temperatures contribute to periods of slow grass growth. If your stocking rate is too high during periods of slow (or dormant) grass growth, overgrazing will decrease the ability of the grass to recover during favorable periods and shorten the length of the grazing cycle (less days of forage availability). Under rotation, cattle should be moved to a new paddock quicker than usual to avoid overgrazing and a canopy height of 5 to 7 inches (instead of the 3 to 4 inches usually recommended) should be maintained until plants have completely recovered from severe cold temperatures. If sufficient growth was observed in the annual ryegrass and then damaged by cold, it is recommend to graze that grass to open the canopy. That will allow new tiller re-growth and also the possibility of rust incidence due to trapped moisture.



This year annual ryegrass forage production has been limited by cold temperatures. While this stress alone is capable of causing plant death, it is most commonly their interaction with defoliation stress that leads to a decline in pasture productivity and the introgression of a decline in the grazing cycle. Cool-season annual forages injured by low temperatures is more susceptible to damage by livestock trampling and this damage can be either temporary or permanent. Therefore, livestock should be kept off ryegrass until recovery has occurred and growth has resumed. Cold tends to decrease digestibility by increasing the rate at which food passes through the gut because the cold slows down microbial activity in the gut. Producers should be ready to supplement animals with hay or grain in order to decrease grazing pressure on the pasture until it can fully recover

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