Nitro: A Nondormant Alfalfa Variety for Maximum Single Year Production

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Second Place

‘Nitro’ is a nondormant alfalfa that was released in 1986 by the University of Minnesota’s Agricultural Experiment Station and the USDA’s Agricultural Research Service. Nondormant means that this alfalfa does not prepare for winter by storing carbohydrates in the roots. Thus, the variety will not consistently overwinter. Because Nitro does not store carbohydrates in the roots during the fall of the year, it can use this energy for topgrowth. This feature distinguishes Nitro from the dormant and moderately dormant varieties that are now being grown in the northern states of this country. Nitro can provide four to six weeks more topgrowth and nitrogen fixation than the traditional dormant varieties. Nitro was also selected for larger roots and increased concentration of nitrogen in these roots. These features make Nitro a better plowdown alternative than traditional dormant and semi-dormant alfalfas, since Nitro can return more nitrogen-rich leaves, stems, and roots to the soil.

Nitro is an annual alfalfa that can be used as a high quality forage crop, a fall plowdown green manure crop, or it can be used combining both of these practices. However Nitro is managed, establishment procedures that maximize forage production in the first year must be implemented. To produce maximum forage yields, Nitro should be planted as early as possible, at a depth of ¼ to ½ in. in a firm seedbed. Nitro alfalfa, as do other alfalfas, will also experience an increase in emergence when the planting unit has press wheels or rollers to ensure good soil-seed contact. Generally, establishment methods that have worked well on dormant alfalfa varieties will also work well with Nitro.

Nitro alfalfa can be established with a companion crop, soloseeded with a herbicide, or soloseeded without a herbicide. Since Nitro can only be expected to produce for one growing season, the forage should be removed before any companion crop reaches the head stage. By reducing the competition, more and higher quality alfalfa forage can be produced. When Nitro is soloseeded without a herbicide, the first cutting should be taken when the planting unit has press wheels or rollers to ensure good soil-seed contact. Generally, establishment methods that have worked well on dormant alfalfa varieties will also work well with Nitro.

As producers become more aware of Nitro’s contributions to subsequent crops, the ways alfalfa varieties could be used in a cropping system increase. One possible use for Nitro would be in major spring wheat growing areas, such as Kansas and Alberta, Canada. In these traditional cropping systems, a nondormant alfalfa could be grown during the fallow year. The alfalfa would add nitrogen to the soil, act to catch snow in the winter, reduce soil erosion if the wheat was planted in a no-till system. Nitro was developed for the northern states of this country where the cold winters would provide 100% kill by the following spring. If grown in the south, the overwintering survival rate would be lower, which would limit its use in a no-till system. However, as described for spring wheat. Because Nitro can fix more nitrogen, questions have been raised as to whether it is in a living mulch system in southern states. The overwintering survival rate during the fallow year. The alfalfa would supply fixed nitrogen to the soil, act to catch snow in the winter, reduce soil erosion if the wheat was planted in a no-till system. Nitro was developed for the northern states of this country where the cold winters would provide 100% kill by the following spring. If grown in the south, the overwintering survival rate would be lower, which would limit its use in a no-till system. However, as described for spring wheat. Because Nitro can fix more nitrogen, questions have been raised as to whether it is a better plowdown alternative than traditional dormant and semi-dormant alfalfas, since Nitro can return more nitrogen-rich leaves, stems, and roots to the soil.

A limited quantity of certified seed was available in the spring of 1987 and this supply is all that is left. For 1988 plantings, there should be a larger quantity available to producers. The Nitro certification price is approximately $2.40/lb. In the central and western United States, Nitro is the highest yielding alfalfa for single-year production of forage and nitrogen. Compared to the traditional non-dormant varieties, Nitro is more expensive at this time and the price of Nitro is a poor choice when used only as a living mulch system. When Nitro is soloseeded without a herbicide, the first cutting should be taken when the planting unit has press wheels or rollers to ensure good soil-seed contact. Generally, establishment methods that have worked well on dormant alfalfa varieties will also work well with Nitro.

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