

ROUNDUP READY ALFALFA

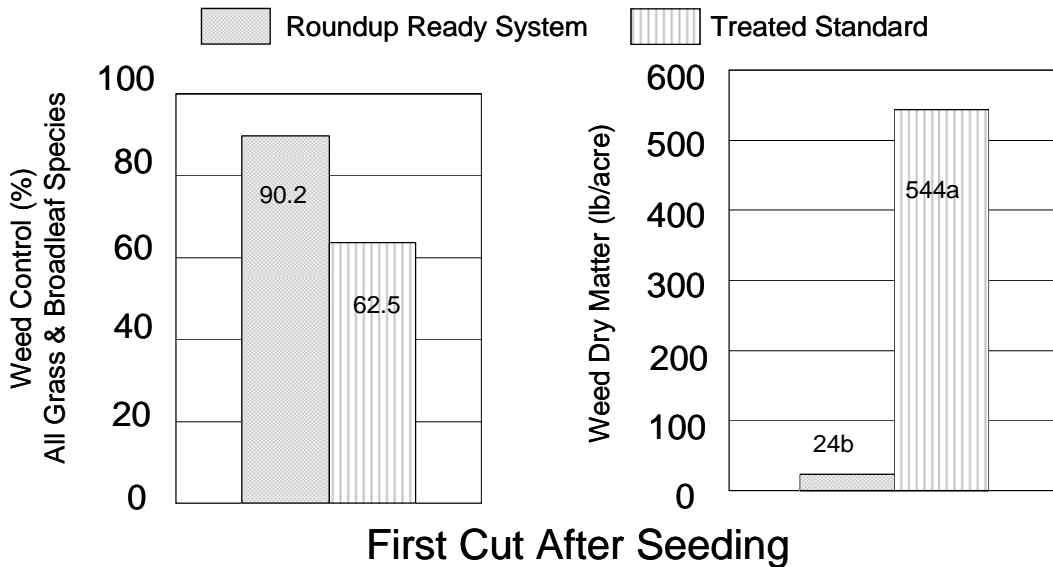
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In 1997, Monsanto and Forage Genetics International began a joint project to develop Roundup Ready alfalfa. Forage Genetics, in collaboration with Montana State University, produced the first transgenic Roundup Ready alfalfa plants in 1998, using the same gene that was used for other Roundup Ready crops. Roundup Ready alfalfa is currently being evaluated for the necessary regulatory approvals. We anticipate that Roundup Ready alfalfa will be deregulated by the USDA and commercialized sometime in 2005.

system provides unsurpassed control of broadleaf and grass weeds, as well as, suppression/control of most persistent, parasitic or poisonous weeds. The use of Roundup[®] agricultural herbicides in alfalfa will greatly increase the grower's flexibility for weed control in alfalfa by providing: a broad application window for the crop and weeds, excellent crop safety and minimal waiting before grazing or feeding. Monsanto field research trials conducted in 2003 and 2004 demonstrate that improved weed control in alfalfa can result in: higher percent purity of alfalfa hay and haylage, more alfalfa yield per acre and improved hay quality (Figures 1 and 2).

Roundup Ready alfalfa will offer growers numerous benefits in comparison to conventional alfalfa. The

Figure 1. Weed control results in Roundup Ready Alfalfa.



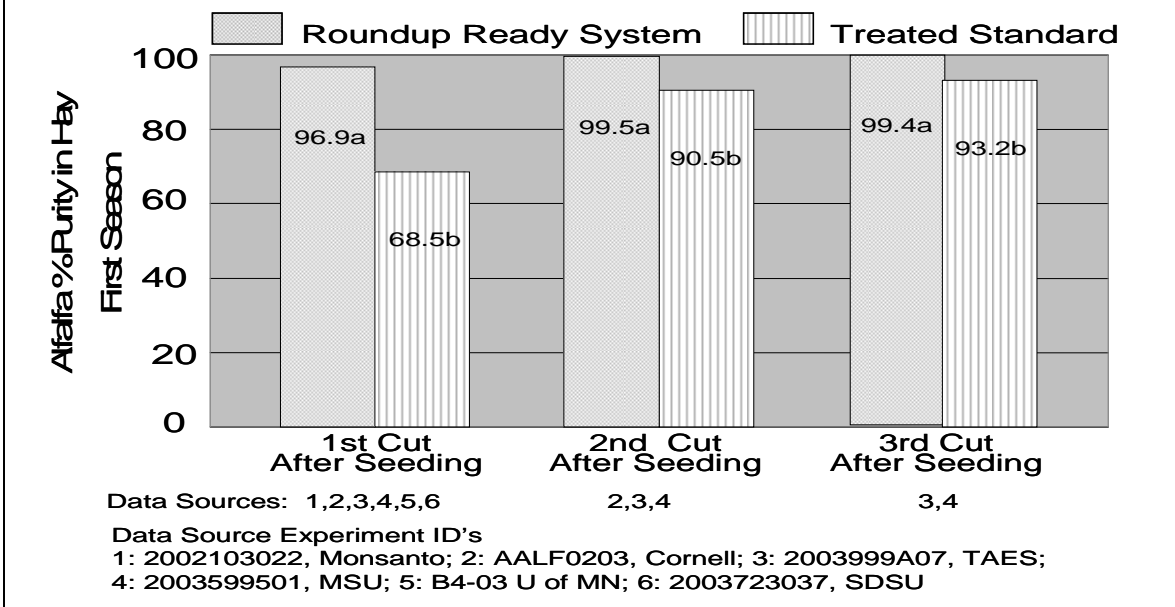
Data Sources: 1,2,3,4,6

1,2,3,4,5,6

Data Source Experiment ID's

1: 2002103022, Monsanto; 2: AALF0203, Cornell; 3: 2003999A07, TAES;
 4: 2003599501, MSU; 5: B4-03 U of MN; 6: 2003723037, SDSU

Figure 2. Cleaner hay results in greater alfalfa purity.



Monsanto and Forage Genetics will broadly license this technology to other seed companies, so that upon commercialization, Roundup Ready alfalfa will be available in multiple brands. The varieties will range from FD3 to FD8 types, with two to three varieties adapted to each alfalfa producing region of the U.S. All new Roundup Ready alfalfa varieties are required to meet high performance standards for yield and quality. In 2003

and 2004, extensive field trials were conducted to compare forage yield and quality of Roundup Ready alfalfa experimental varieties to a set of commercial check cultivars. All varieties received the same conventional herbicide treatment program. In these trials the Roundup Ready experimental varieties were competitive with commercial check cultivars for both forage yield and relative forage quality (RFQ).