

**National Center for Food and Agricultural Policy****FOR IMMEDIATE RELEASE**  
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**202-328-5044****Roundup Ready Soybean Yield Gap Closing**

Roundup Ready soybean yields are catching up to conventional varieties, according to a recent study by the National Center for Food and Agricultural Policy (NCFAP). University variety trial results for 1999 showed an average 3% difference in yields for Roundup Ready varieties relative to conventional soybean varieties, compared to a 4% difference in 1998.

Roundup Ready soybeans were genetically modified to withstand treatment with the herbicide glyphosate (Roundup) by inserting a gene from a soil bacterium, which allows for the continued production of essential amino acids that would otherwise cease after the herbicide treatment. Roundup is an effective, broad spectrum herbicide that would normally destroy a growing crop. The insertion of the soil bacterium gene allows growers to use Roundup over their crop, controlling weeds while leaving the crop unharmed. Roundup Ready soybeans have proved extremely popular with U.S. farmers since their introduction in 1996. In just 5 years, adoption reached 54% of total soybean acreage.

The analysis of 1999 variety trials is based on trials conducted in 8 states and is similar to an earlier analysis of the 1998 trials. Nearly 9400 entries were included, 4443 conventional and 4955 Roundup Ready. In five of the eight states included in the analysis, the disparity in yields between Roundup Ready and conventional varieties was smaller in the 1999 trials than in 1998, indicating the availability of the Roundup Ready trait in higher yielding varieties.

## Yield Performance of Roundup Ready Relative to Conventional Soybean Varieties

<b>State</b>	<b>1998</b>	<b>1999</b>
Illinois	103%	102%
Iowa	93%	95%
Michigan	97%	101%
Minnesota	92%	91%
Nebraska	88%	97%
Ohio	97%	89%
South Dakota	90%	94%
Wisconsin	97%	100%
<b>Average</b>	<b>96%</b>	<b>97%</b>

Critics of agricultural biotechnology distorted the results of the 1998 variety trials, asserting that the difference in yields was due to an inherent problem with the Roundup Ready varieties resulting from the process of genetic modification. However, the differences are more likely due to differences in the agronomic background of the varieties in which the Roundup Ready trait is available. The Roundup Ready trait was introduced into a single soybean variety that is appropriate to growing conditions in a limited area. In order to introduce the trait into other varieties, several years of "backcrossing" using conventional breeding is necessary to recapture the agronomic characteristics of the recipient variety. Therefore, it was expected that it would take several years for seed companies to make the Roundup Ready trait available in the highest-yielding elite varieties.

As the Roundup Ready trait is introduced into the highest yielding varieties, it is expected that the difference in yields between Roundup Ready and conventional soybean varieties will disappear, or even be overcome. However, one must be cautious in interpreting the results of variety trials as many other factors besides yield potential, such as costs and weed control efficacy, affect growers' planting decisions and, ultimately, yields.

Comparing Roundup Ready and Conventional Soybean Yields 1999, by Janet E. Carpenter, is available at [www.ncfap.org](http://www.ncfap.org). Preparation of this report was supported by the Rockefeller Foundation.