

1-11-2021

## ISU SCN-resistant Soybean Variety Trial Program results for 2020

Gregory L. Tylka

*Iowa State University*, [gtylka@iastate.edu](mailto:gtylka@iastate.edu)

Follow this and additional works at: <https://lib.dr.iastate.edu/cropnews>



Part of the [Agricultural Science Commons](#), and the [Agriculture Commons](#)

---

### Recommended Citation

Tylka, Gregory L., "ISU SCN-resistant Soybean Variety Trial Program results for 2020" (2021). *Integrated Crop Management News*. 2688.

<https://lib.dr.iastate.edu/cropnews/2688>

The Iowa State University Digital Repository provides access to Integrated Crop Management News for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current information on integrated crop management from Iowa State University Extension and Outreach, please visit <https://crops.extension.iastate.edu/>.

---

## ISU SCN-resistant Soybean Variety Trial Program results for 2020

### Abstract

Iowa State University evaluates nematode control and yield performance of soybean varieties with resistance to soybean cyst nematode (SCN) in SCN-infested fields throughout Iowa each year. The work is supported by the soybean checkoff through the Iowa Soybean Association.

### Disciplines

Agricultural Science | Agriculture

# IOWA STATE UNIVERSITY

## Extension and Outreach

Integrated Crop Management

# ISU SCN-resistant Soybean Variety Trial Program results for 2020

January 11, 2021

---

Iowa State University evaluates nematode control and yield performance of soybean varieties with resistance to soybean cyst nematode (SCN) in SCN-infested fields throughout Iowa each year. The work is supported by the soybean checkoff through the Iowa Soybean Association.

Results of the 2020 variety trial experiments were distributed as a special insert in the January 9, 2021 issue of the Iowa Farmer Today newspaper. The report also is available as ISU extension publication IPM-52, available online [here](#).

## **Varieties in the experiments**

There were 69 SCN-resistant varieties grown in replicated plots in each of nine experiments in 2020. Each experiment also had three susceptible varieties to serve as checks or control treatments. Three experiments each were conducted across northern, central, and southern Iowa (Figure 1). Different sets of varieties were included in experiments in north, central, and southern Iowa based on maturity of the varieties, but the varieties in the experiments within a region were the same.

Most of the varieties evaluated had PI 88788 SCN resistance, but there was a record-high number of varieties (16) with Peking SCN resistance in the 2020 experiments. There were eight Peking varieties in the northern Iowa experiments, seven in the central Iowa experiments, and one in the southern Iowa experiments. For the first time ever a variety with PI 89772 SCN resistance was included in the variety trials. Variety NK S23-G5X was evaluated in the six experiments conducted across northern and central Iowa.

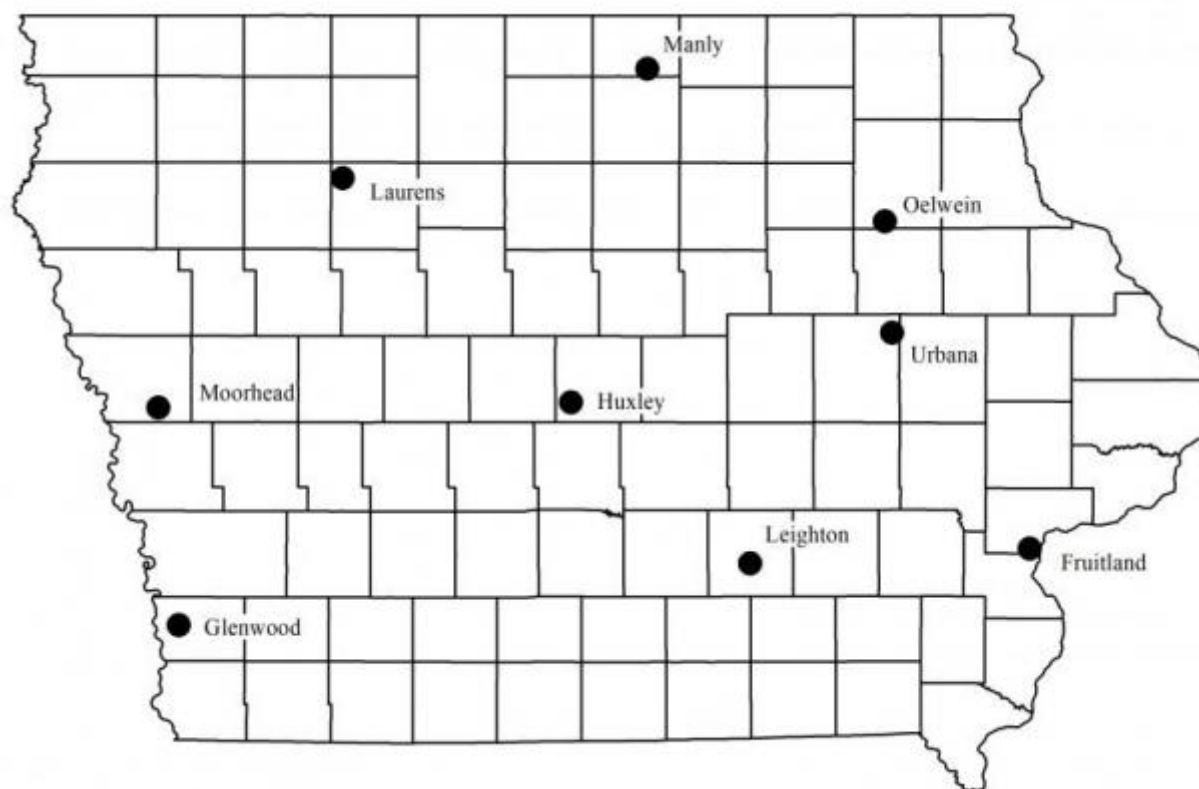


Figure 1: Location of ISU SCN-resistant Soybean Variety Trial Program experiments in 2020.

## Yields

Despite drought conditions in much of Iowa during the last growing season, overall yields in the 2020 experiments were similar to those in 2019 and other recent years as well. Also, the range of average yields of resistant varieties among locations was about the same in 2020 as in 2019. Maximum yields of individual SCN-resistant varieties ranged from 53.4 bu/a in central Iowa to 79.9 bu/a in west central Iowa in 2020.

The yields of varieties with PI 88788 resistance varied greatly, with some varieties yielding less than the susceptible check varieties with no resistance. Overall, varieties with Peking SCN resistance yielded as well as varieties with PI 88788 resistance (figure 2). Individual Peking varieties often were in the top 10% of all varieties in an experiment. Varieties with Peking SCN resistance were the top-yielding and second-highest yielding of all resistant varieties in the experiments in east central and west central Iowa, respectively. However, the yields of a few varieties with Peking SCN resistance were among the lowest in four of the experiments.

The variety with SCN resistance from PI 89772, NK S23-G5X, yielded in the top third to half of all varieties in the six experiments in which it was studied. It was the 7th-highest-

yielding variety in the experiment in north central Iowa, averaging 75.5 bu/a.

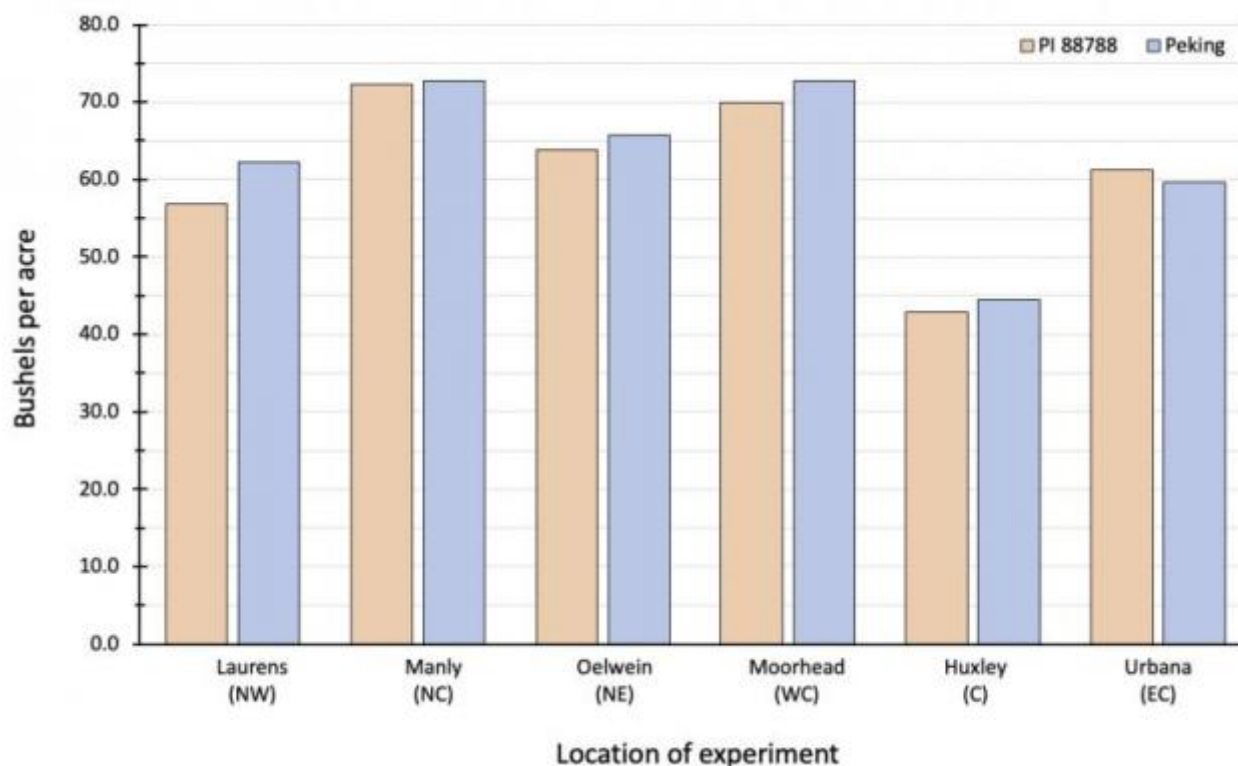


Figure 2: Average yield of varieties with PI 88788 and Peking SCN resistance in six variety trial experiments in 2020. Data for individual varieties in each experiment are available online [here](#).

## SCN control

The end-of-season SCN population densities for many varieties with PI 88788 SCN resistance were high, indicating the resistance was ineffective at controlling SCN. Several of these varieties allowed as much or more SCN reproduction as the susceptible check varieties in the experiments. In contrast, varieties with the Peking source of SCN resistance provided good to excellent nematode control, resulting in considerably lower end-of-season SCN population densities than varieties with PI 88788 SCN resistance (figure 3). Varieties with Peking resistance had the lowest SCN population densities at the end of the season in every experiment.

End-of-season SCN population densities in plots with NK S23-G5X variety containing PI 89772 SCN resistance were lower than those for some varieties with PI 88788 resistance, but not all, and were greater than for varieties with Peking resistance. Broad conclusions about the effectiveness of the PI 89772 source of resistance should not be drawn based on results from this one variety studied in six small-plot variety trial experiments in one growing season.

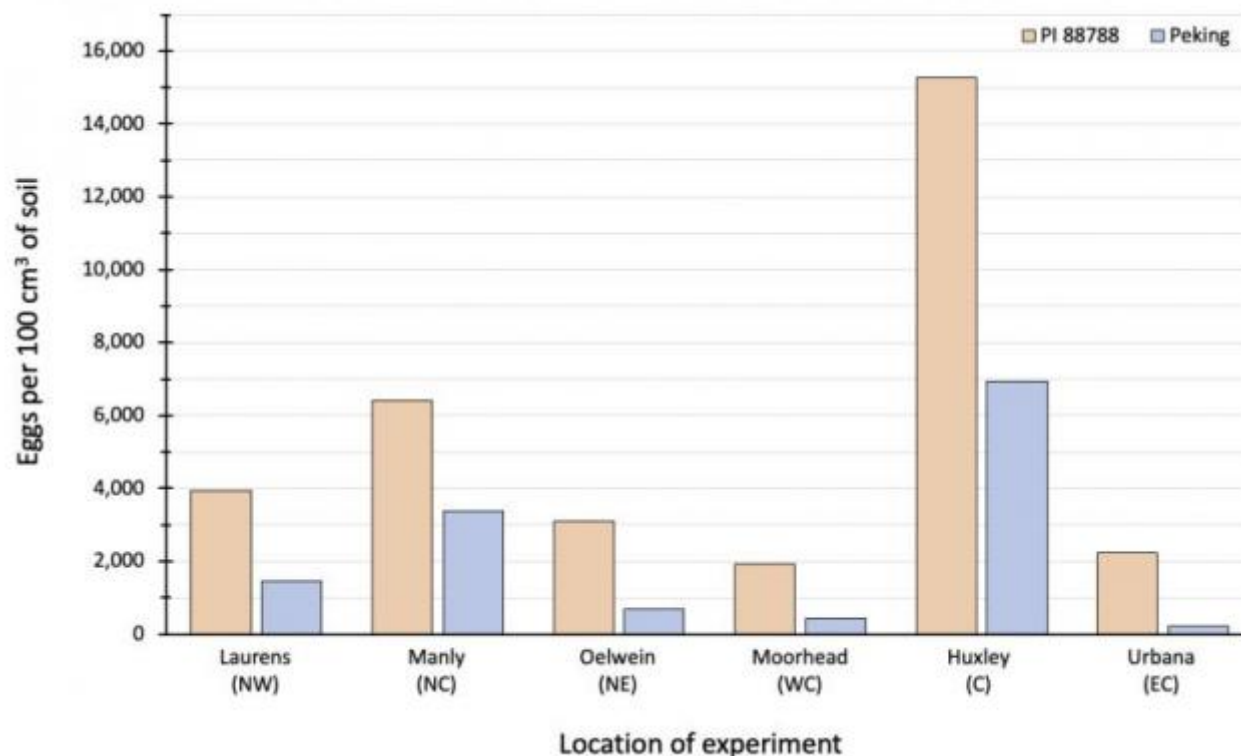


Figure 3: Average end-of-season SCN population densities for varieties with PI 88788 and Peking SCN resistance in six experiments in 2020. Data for individual varieties in each experiment are available online [here](#).

## More information about SCN

Annual reports of the results of ISU SCN-resistant Soybean Variety Trial experiments since 1997 are available for download at [www.isuscntrials.info](http://www.isuscntrials.info). Also, more information about the biology and management of SCN is available at [www.soybeancyst.info](http://www.soybeancyst.info), [soybeanresearchinfo.com](http://soybeanresearchinfo.com), and [TheSCNCoalition.com](http://TheSCNCoalition.com).

**Category:** [Plant Diseases](#)

*Links to this article are strongly encouraged, and this article may be republished without further permission if published as written and if credit is given to the author, Integrated Crop Management News, and Iowa State University Extension and Outreach. If this article is to be used in any other manner, permission from the author is required. This article was originally published on January 11, 2021. The information contained within may not be the most current and accurate depending on when it is accessed.*

**Crop:**

[Soybean](#)

**Tags:** SCN management soybean cyst nematode resistance

**Author:**

Greg Tylka Morrill Professor



Dr. Greg Tylka is a Morrill Professor in the Department of Plant Pathology and Microbiology at Iowa State University with extension and research responsibilities for management of plant-parasitic nematodes. The focus of Dr. Tylka's research program at Iowa State University is primarily the soybea...