PLANT HEALTH INITIATIVE
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Consider Pests and Diseases When Choosing Soybean Varieties

At the same time crops are being harvested and yield is being calculated, growers are making their seed buying decisions for 2004. Yield is usually given the highest priority in the seed selection process. However, growers should also consider field and environmental conditions that influence harvested yield.

Diseases and insects can unknowingly rob producers of four to eight bushels per acre. Some diseases or pests don't leave the tell-tale symptoms that they are there. The soybean cyst nematode (SCN) is the worst of the bunch. Even with a good selection of resistant varieties, SCN still costs U.S. producers millions of bushels of valuable yield. It is the most difficult pest for soybean producers to manage because SCN counts can be misleading if soil samples are not properly collected.

Be sure to know what source of SCN resistance you are buying. Researchers recommend rotating the source of resistance to prevent build-up of a resistant nematode population.

Sudden death syndrome (SDS) has become more problematic, having moved from Illinois through eastern Iowa and on into southern Minnesota. When choosing varieties for SDS tolerance, be sure to find out if the ratings are based on grower field observations or on reactions in inoculated nursery plots. Ratings originating from grower field observations are considerably less accurate.

Soybean growers can limit their yield loss from Phytophthora root rot by purchasing varieties with genetic resistance and good field tolerance. There are several Rps genes available with the most common being Rps-1k. However, an increasing number of growers throughout the Corn Belt have experienced a failure of the Rps-1k gene. There appears to be a race shift occurring with race 25 Phytophthora becoming more dominate. A very limited number of varieties are being tested that have two Rps genes for better performance in fields with race 25 Phytophthora.

Genetic resistance to viruses is not available. However, recent research indicates some varieties may have field tolerance. Ask your seed representative for any available information on field tolerance of their varieties. Viruses are most often managed by the control of the insect vectors that transmit them.

Estimates of soybean yield loss from diseases 2000–2002.

	Bushels Lost		
	Illinois	Iowa	Ohio
Charcoal rot	14,588,457	—	14,857
Phytophthora root rot	17,178,187	8,033,703	21,673,658
Pod and stem blight	4,137,797	19,099,777	2,123,440
Sclerotinia stem rot	975,040	2,577,007	—
Seedling diseases	6,501,055	11,906,520	6,596,631
Soybean cyst nematode	62,091,590	158,883,120	14,418,418
Sudden death syndrome	75,274,210	21,069,547	24,688

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Other factors to consider when selecting seed for your farm are the types of tillage and cropping systems you are using. Some varieties are less adapted to no-till and solid seeded conditions. Your seed supplier may have data on performance under high moisture/high stress conditions. University yield trials usually do not evaluate entries under these conditions.

Don't forget to choose varieties with a range in maturity to spread your disease risk. You should have at least a five to seven day spread in maturity to maximize yield potential. Shorter maturity varieties are at less risk to late-season diseases but limit yield potential. To boost soybean yields, try planting 25 percent of your acres to later maturing varieties with sufficient disease resistance.

For more information on management of soybean diseases and for the newest university research recommendations on innovative cropping practices, log on to www.planthealth.info.