



# Monsanto Donates Wheat Germplasm to OSU

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Since 1993, Oregon State University shared wheat germplasm with HybriTech Seeds International, a subsidiary of Monsanto, under a Research Agreement to facilitate the development and commercialization of hybrid wheat. HybriTech developed an extensive breeding program in the Pacific Northwest; first based in Corvallis and then Boise, ID. In September, 1999, Monsanto closed all HybriTech U.S. hybrid wheat breeding efforts, including their Boise-based program. The decision was a reflection of the highly competitive seed market and higher costs associated with producing and marketing hybrid seed.



Monsanto has now donated the HybriTech wheat germplasm being developed for the Pacific Northwest to Oregon State University. The seed stocks, released to OSU for planting in October, 2000, have no 'encumbrances'. That is, OSU has complete freedom to make selections, conduct research, publish information, and release public varieties directly from the stocks. Monsanto is donating these stocks to ensure that the germplasm and genetic advancements are not lost due to discontinuation of their hybrid wheat efforts.

The donated stocks are complete breeding program, with 2000 advanced lines, 1331 early generation populations, 24,800 headrows, and 1596 F1 hybrids (Table 1).

Table 1. Hybritech seed stocks provided to Oregon State University.

Generation	Seed amt.	#'s
F1's	seeds	676
F2's	100 gm	635
F3's	100 gm	696
F4-F5	heads	24,800
F5-F6	100 gm	1705
Hybrids	450 gm	920
Double Haploids	varied	201
Inbreds (295) and reselections*	100 gm	1960
<b>Inbred purification*</b>	<b>heads</b>	<b>1800</b>

A total of 4575 plots and 24,800 headrows were seeded for 2000-01.

These populations and lines are largely based on OSU germplasm that had been improved by HybriTech breeders through additional crossing and selection. A wide array of parent germplasm was used in the program, including lines from public breeding programs and lines from HybriTech breeding programs in the US and Europe (Table 2).

Table 2. Origin of parental stocks (478 lines) used to develop the Hybritech germplasm base.

Source	# of lines
<b>Public germplasm</b>	<b>297</b>
OSU	217
ID	45
ARS-WA	15
WSU	20
<b>Private germplasm</b>	<b>170</b>
HT-SWW	77
HT-EE	31
HT-SRW	21
HT-HW	13
Cargill-Argentina	7
Cargill-Australia	16
Dekalb	8
Other (NPGS, etc.)	11
<b>Total</b>	<b>478</b>

Approximately 36% of the parent base represents germplasm that is unique, currently unavailable, or unused in the PNW public breeding programs. With use of the Monsanto 'Genesis' chemical hybridizing agent, HybriTech breeders were able to make large numbers of crosses and hybrid combinations. The Monsanto donation will approximately double the size of the OSU winter wheat breeding program for the coming year.

OSU is the primary recipient of the germplasm, but we will manage stocks as a public resource for the Pacific Northwest. Seed stocks will be shared with public breeding programs at Washington State University, University of Idaho, and USDA-ARS. Monsanto donated the stocks with only one restriction – that seed not be provided to any commercial competitor of Monsanto. The germplasm will be available to public programs for collaborative testing in fall, 2001, after initial evaluations and seed increases are carried out at our Pendleton research site.



The Monsanto donation represents an investment of several million dollars and over seven years of research and development efforts by HybriTech breeders. Wheat growers throughout in the Pacific Northwest will directly benefit from the donation as new high-yielding public varieties are developed and released from this valuable germplasm.