

## Bin-run Wheat Seed

*Herb Ohm*

*Agronomy Department*

*Purdue Univ., West Lafayette, IN*

*Email: [hohm@purdue.edu](mailto:hohm@purdue.edu)*

It is tempting to plant wheat with “bin-run seed” to “reduce” input costs for commercial production. Use of bin-run seed is especially tempting when wheat market price is low, cost of seed wheat is high, and if one inputs other “low management” production practices, such as soil/field areas that have low productivity, limited fertilizer application and little or no fungicide/herbicide application.

There are ample field trial performance results that indicate favorable input cost returns on various good management practices for wheat production, including high quality processed seed wheat. Cost returns of high quality seed wheat, compared to use of bin-run seed, are especially favorable following a growing season in which one or another disease of wheat or unfavorable weather pattern was a significant wheat production limitation.

Disease infection, low soil fertility, moisture and heat stress, all cause varying degrees of reduced grain yield and wheat seed quality. Limited soil fertility, moisture, and heat stresses result in widely varying seed size and significantly increased percentage of small seeds, resulting in reduced seedling vigor and low emergence.

Diseases also result in increased percentage of small seeds. But certain diseases, like fusarium head blight (head scab) also cause low germination and infected seedlings. Seeds from fusarium-infected spikes can have varying degrees of infection; some infected seeds can appear fairly normal, but are poorly developed and lightweight, and have low germination. Proper seed processing can eliminate many of these diseased and lightweight seeds.

Seed treatment with chemicals helps reduce seedling diseases that negatively impact seedling vigor, and other diseases that germinate and develop along with the developing wheat plant, like loose smut. Other chemical seed treatments kill aphids that transmit Yellow Dwarf Virus when they feed on the wheat seedlings. Yellow dwarf disease is especially devastating if transmitted into emerging wheat seedlings and in early seedling stages.

Typically in Indiana, aphids move from corn and perennial grasses in the fall season into wheat fields at wheat emergence and during early wheat growth as the corn matures. Yellow dwarf infection in wheat is especially devastating and prevalent in fall seasons in which weather temperatures remain warm through November, like in fall 2006.

Aphids are re-introduced in spring, usually beginning in early April, into northern areas like Indiana on wind currents from areas to the south. These aphids then transmit the Yellow Dwarf Virus into perennial grasses and cereal grasses, like spring seeded oats and winter wheat. Spring infection of yellow dwarf is devastating in spring oats (like fall infection in winter wheat, seeded in the fall) but is not as severe in winter wheat.

Bottom line: seeding with high quality processed seed wheat, especially in combination with other good management wheat production practices is an excellent investment.

## **Related References**

- Beuerlein, Jim, Pierce Paul, Clay Sneller, and Rich Minyo. 2007. Ohio Wheat Performance Test. Ohio State Univ. & OARDC. [On-Line]. Available at <http://www.oardc.ohio-state.edu/wheattrials/default.asp?year=2007> (URL accessed 8/28/07).
- Bruening, B., C. Tutt, S. Swanson, J. Connelley, G. Olson, N. Mundell, A. Clark, and D. Van Sanford. 2007. Kentucky Small Grain Variety Performance Test. Univ. of Kentucky. [On-Line]. Available at <http://www.ca.uky.edu/agc/pubs/pr/pr551/pr551.pdf> (URL accessed 8/28/07).
- Purdue Small Grains Management Web Site. 2007. Purdue Univ. Agronomy Extension. [On-Line]. Available at <http://www.agry.purdue.edu/ext/smgrain> (URL accessed 8/28/07).
- Spears, Jan and Randy Weisz. 2004. Planting Farmer Saved Wheat Seed: Are You Really Saving Money? North Carolina State Univ. [On-Line]. Available at <http://www.smallgrains.ncsu.edu/Guide/Chapter4.html> (URL accessed 8/28/07).

---

Don't forget, this and other timely information about corn can be viewed at the Chat 'n Chew Café on the Web at <http://www.kingcorn.org/cafe>. For other information about small grains, take a look at the Purdue's Small Grain Extension page on the Web at <http://www.agry.purdue.edu/ext/smgrain>.

© 2007, Purdue University

It is the policy of the Purdue University that all persons shall have equal opportunity and access to its programs and facilities without regard to race, color, sex, religion, national origin, age, or disability. Purdue University is an Affirmative Action employer. This material may be available in alternative formats.