

# Consider these post-harvest, pre-seeding management tips

By MERYL RYGG McKENNA

Frequent summer showers and hailstorms created the perfect setting this year for volunteer winter wheat seedlings and weeds in the region. Neal Fehringer, a Certified Crop Adviser and Certified Professional Agronomist from Billings, talked about considerations for growers this fall. Fehringer's recommendations are based on 32 years of professional experience with dryland and irrigated farming, on top of his family roots.

## Weed control

The most important post-harvest management recommendation is to control volunteers and weeds. There are four main reasons to do this.

1. Interrupt disease cycles. Hail, a frequent occurrence this summer, knocked kernels out of maturing heads. Each kernel has the potential to sprout. The volunteers growing in stubble provide a green bridge for diseases to transfer to the next crop. Mites that carry the wheat streak mosaic virus can live in dying plants or volunteer seedlings and migrate from there to emerging sprouts of the new crop, taking the virus with them. To interrupt the cycle, eliminate all green plant material from a stubble field for a period of 10 days to two weeks prior to the newly seeded wheat emerging.

2. Prevent the weed seed bank from growing by controlling weeds before they go to seed.

3. Conserve moisture for the next crop. Weeds growing in grain stubble use water that could be available for next year's crop, in addition to reseeding themselves. Any seed requires moisture to germinate. Letting weeds consume that moisture, Fehringer said, is like having a hole in your gas tank before you begin a journey. "In my opinion, you never want to give away that moisture," he said.

Research at Montana State University during the 1970s and '80s showed that 5 inches of moisture is necessary to bring a wheat crop to the heading stage. In Fehringer's experience, each additional inch produces about 6 bushels of winter wheat per acre, 5 for spring wheat. In a crop year with 10 inches of moisture, wheat will use 5 inches to reach heading stage, leaving 5 inches for filling the heads. Multiply those 5 inches by 6 for an estimated winter wheat harvest of 30 bushels per acre.

The composition of soil affects its water holding capacity. Sand can hold 1 inch of moisture per foot of soil, while clay loam can hold 2 inches per foot of soil.

4. Ensure better seeding conditions. Plants such as Russian thistle and kochia grow tall and tough; drills have a hard time cutting through the plant matter to deposit the wheat seed at the proper depth of soil.

Conventional (non-organic) growers can spray weeds. However, with the discovery of glyphosate-resistant kochia, it is apparent that growers who spray must incorporate a combination of herbicides, crop rotation and/or tillage into their weed management. Resistance is triggered by farmers relying on only one herbicide year after year. Any sprayed plant that does not die will produce seeds that are also resistant. See Montana

State University's publication (<http://www.montana.edu/news/11377/glyphosate-resistant-kochia-found-in-montana>) or one from the University of Wyoming (<http://weedcontrolfreaks.com/wp-content/uploads/2013/03/WesternSugarGrowers2013.pdf>). In 2012, glyphosate-resistant kochia was confirmed in Kansas, Colorado, Nebraska, South Dakota, North Dakota and Montana, according to University of Wyoming data.

Fehringer said dicamba, 2,4-D and Gramoxone (a restricted-use herbicide) are commonly used with glyphosate. Current recommendations are available through your certified crop adviser (<http://www.certifiedcropadviser.org>), your local Extension Agent or MSU Agricultural Research Center (for example, <http://www.sarc.montana.edu/php/weeds/?rtf>).

In organic operations, tillage is recommended for post-harvest weed control. One way to till and leave the previous crop's stubble in place is to undercut the surface of the soil. The "Noble-type" blade, one such cultivator, is said to leave 90 percent of the crop residue on top of the ground.

The important thing, Fehringer said, is to leave as much stubble standing as possible to trap snow so it melts into the soil instead of blowing away.

### **Considerations for fall seeding**

1. Even in fallow ground, volunteer wheat sprouts must be controlled to keep the disease factor down. To disrupt the green bridge, plants must be dead, not just dying. Old wheat will die quicker with tillage than with spraying.
2. Don't skip the seed-treat package; it prevents seed rot and seedling diseases.
3. Ideally, growers will use certified seed – good quality, high test weight, good protein and no noxious weed seed – to add to seedling vigor, improve stand establishment and reduce weeds.
4. Remember proper seeding depth. Winter wheat should be planted 1 to 2 1/2 inches deep, but no more. Planting deeper than 2 1/2 inches will reduce emergence and tiller formation. Place seed at the recommended depth, but also make sure it's actually into moist soil. A caution for growers using single-disk drills: plant deep enough to compensate for thatch. The previous crop residue must be evenly spread out. Harrow stubble or chem fallow to eliminate residue bunching.

For growers getting a late start on fall seeding: increase the seeding rate and decrease the depth. Fehringer said wheat seeded 2 1/2 inches deep in late October will not emerge or have enough stored energy to survive and emerge next spring in a good stand. Seeding rates should be increased to compensate for fewer numbers of tillers per plant on late-seeded wheat.

"Don't cut the seeding rate trying to save money," he added. "It just doesn't pay off."

5. Select varieties adapted to your area. Some need sawfly-resistant (solid-stem) varieties, and disease packages vary for different areas.

6. Choose between conventional or Clearfield Production System varieties. Clearfield wheat varieties may be better choices if you have jointed goat grass, feral rye, and other grassy-type weeds. An herbicide is available that controls grassy weeds without harming

Clearfield wheat. For both conventional and Clearfield varieties, pre-plant and pre-emergence herbicides are available for cheatgrass infestations.

7. If stripe rust is in your area, consider planting later in the fall and use a resistant wheat variety.

Fehringer's final recommendation? Hope for good weather and timely rains.

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