

Wheat Grower & USWBSI Co-Chair Reflects Upon Scab Initiative's Origin, Progress & Challenges

By Don Lilleboe*

Tom Anderson brings a particularly valuable perspective to the campaign against Fusarium Head Blight (scab). First, he's a Minnesota wheat grower whose own farm has been seriously impacted by this disease. Second, he was instrumental in obtaining initial federal and state of Minnesota funding for scab research in the mid-1990s. And third, he has served as co-chair of the U.S. Wheat and Barley Scab Initiative (USWBSI) since the group's establishment in the latter '90s.

If you think all that qualifies Anderson as a prominent voice in the national effort to publicize and resolve the problems associated with Fusarium Head Blight (FHB), you're right. And despite dealing with serious personal health issues this past year, he remains as committed as ever to finding and implementing solutions to this disease's detrimental impact upon the U.S. wheat and barley industries.

The Barnesville, Minn., farmer traces his involvement with scab back to 1993. That was the year this disease first reared its ominous head across many Upper Midwest grain fields — including Anderson's. He had forward contracted a significant volume of his anticipated wheat crop; but after scab cut yields, he harvested barely enough to cover his September contract obligations. After discounts for light test weight and other market factors, he ended up netting about \$2.00 a bushel.

At the time, Anderson was a member of the advisory Small Grains Research and Communication Committee for the Minnesota Wheat Research and Promotion Council. During the winter/spring of 1993/94, he and other producers successfully lobbied the Minnesota Legislature for disaster aid for scab research.

Such work eventually led to Anderson testifying in Washington, D.C., in July of 1997 before the House ag subcommittee that was looking at reauthorization of the research title for the '97 farm bill. His technical support person that day was Rick Ward, a Michigan State University wheat breeder who eventually would become Anderson's USWBSI co-chair.

Even more fortuitous for the future of FHB research, however, was what happened later that same day. Anderson and Ward had arranged to meet, following their House subcommittee testimony, with representatives of USDA's Cooperative State Research, Education and Extension Service (CSREES) at Beltsville, Md., regarding continued funding for scab research. One of their CSREES contacts suggested they also visit with the Agricultural Research Service — hinting, Anderson remembers, “there was a chance we could get in on their baseline funding so we wouldn't need to lobby each year [for research funds].

“When he recommended ARS, I said to Rick that I'd met a lady named Judy St. John the prior year through some sugarbeet research projects I was involved in,” Anderson continues. Though they didn't have an appointment, he suggested to Ward that they stop by St. John's Beltsville office to see if they could chat briefly with her.

“We walked into [St. John's] receiving area, the secretary called her out, she recognized me, gave me a hug and called me by my first name,” Anderson recalls. “Thirty minutes later we had procured \$500,000 [in emergency funds] to start the scab initiative.”

Anderson says a pivotal development in the USWBSI story occurred in late 1997 during a University of Minnesota-hosted meeting of the North Central Research Working Group (NCR-184). Its sessions focused on Fusarium Head Blight, “and there were side meetings in the afternoons and evenings, talking about how we could access more federal money for scab research,” he recalls. Since ARS researchers obviously could not lobby for funds, individuals from the production agriculture sector were needed to “carry the torch.” Anderson and others stepped forward.

“That's where, in my mind, the U.S. Wheat and Barley Scab Initiative was born,” says this Minnesota wheat grower.

Since then, approximately \$35 million in federal dollars have been allocated for research on Fusarium Head Blight. The Initiative now encompasses just over 80 principal investigators located at more than two dozen institutions, including land grant universities, USDA-ARS unit sites and the International Maize and Wheat Improvement Center (CIMMYT).

The growth of the Initiative over the past decade — in terms of both funding and number of researchers — is a direct reflection of the expansion and severity of the

disease itself. It is no longer an “Upper Midwest phenomenon,” having since produced serious outbreaks in areas like Michigan, Kentucky and even the southeastern United States. The Initiative’s constituency and focal areas also reflect the fact that millers, maltsters, brewers and grain exporters feel scab’s sting in the form of crop quality and food safety issues. Of particular concern to those groups are unacceptable levels of DON (vomitoxin).

“The focus of the Initiative is shifting to trying to deal with DON more effectively,” Anderson explains. He says future research projects funded by USWBSI are likely to be more multi-disciplinary, *i.e.*, wherein scientists will work directly with those in related disciplines, as compared to working independently on a specific issue. “It has to be an integrated approach,” he emphasizes.

Anderson and other producers hope that approach will hasten the development of more-effective scab management tools and strategies. He, more than most farmers, understands that scab research — particularly given the multi-gene nature of the disease — is a long-term proposition. But he also empathizes with the impatience of farmers who suffered economically from the disease last year or whose fields may be infected this year.

Case in point is his own west central Minnesota locale, where a number of farmers have stopped raising wheat or barley until they feel the scab problem has been adequately resolved. Anderson is not ready to follow suit; but he understands that sort of rationale “when you’re focused on year-to-year survival.” In his own case, “I go to town with a truckload of wheat and come back with 6 to 8% dockage — and then there’s a discount of 40 cents a bushel for DON,” he exemplifies. “That’s hard to take — especially when I’ve had my heart and soul in the Initiative.

“But I’m still there. I’m not giving up.”

Anderson believes it’s essential for wheat and barley producers in scab-affected areas to recognize that small grain production is no longer a matter of plant, spray once for weeds and harvest. “You have to get out and walk your fields — or hire someone to do it for you,” he stresses. “And then respect what you see” and act upon it.

Fungicide application is his primary message. There are credible scab forecasting models available to growers, he points out, along with other resources to help manage

this disease. A DON prediction model is now being refined as well. Research also has shed valuable new light on fungicide application technology for scab management.

But it still comes back to the individual grower “pulling the trigger at the right time,” Anderson emphasizes. “I think the window on control — and this is the biggest key for the grower — for *Fusarium* in the field is no more than three or four days,” he ventures. “If you don’t hit that window with the fungicide, you may as well not put it on.”

Growers also need to be very cognizant of their own production environment and crop rotations, Anderson adds. Conducive moisture and temperature conditions during critical times of the growing season are obvious “red flags,” he notes. But growers — himself included — don’t always keep in mind how other crops serve as inoculum reservoirs.

“Last year, I didn’t remember that I had a lot of corn residue around the field where I had planted wheat [on old sunflower ground],” Anderson illustrates. “I had two or three fields of corn around me, and that inoculum was able to move into the wheat field. That set me up for more infection than if I’d had only one corn field or no corn at all within a couple miles of the wheat field.

“So you have to be looking at more than what the [prediction] model shows; you need to also look at your own environment, the rotations around you, and so forth.”

Despite the obvious challenges that still remain, Tom Anderson remains optimistic about the future of scab management and the overall vitality of wheat and barley production in those regions where the disease exists. The existence and track record of the U.S. Wheat and Barley Scab Initiative is a major reason why. “I think the Initiative has been a marvelous model of getting people focused and moving in one direction,” he remarks. “It’s really gratifying to see that many people working on one common issue — and being effective.

“We’ve made good progress,” Anderson concludes. “It could always be better, of course; but I’m optimistic that within the next few years we’ll have varieties that will do much better in the field” in terms of both agronomic performance and resistance to DON.

“We will get a handle on scab. We will beat this thing.”

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