Fostering Partnerships for Confronting the Dual Threat of Black Dot in Potatoes Across the US

Julie Pasche, North Dakota State University
Milt Carter, CSS Farms
Ken Frost, Oregon State University
Matt Maughan, CSS Farms
Jeff Miller, Miller Research

Black dot, caused by *Colletotrichum coccodes*, affects vines (Figure 1), roots, stolons, and tubers (Figure2). The 'Black Dot Initiative' was formed in the fall of 2023 by growers who expressed concerns about the ability to produce and store quality potatoes for the fresh market due to black dot tuber blemish. These growers recruited a group of researchers to develop solutions for managing black dot. Since its inception, more researchers and growers have engaged in the Black Dot Initiative, and cooperative research has been initiated. Included below are some examples of our progress in reaching the goals of the Black Dot Initiative as a public-private partnership, including results from small-plot research and grower on-farm trials.

Overall objective of the Black Dot Initiative: To form a strong and cohesive team of potato researchers (pathologists, extension professionals, breeders, and others), growers, and industry stakeholders to develop a comprehensive research program to address immediate and long-term solutions for both vine and tuber phases of black dot and effectively disseminate research findings and management recommendations to growers and stakeholders.

To date, the Black Dot Initiative has engaged 17 growers, agronomists, and stakeholders from 12 states, working alongside 14 researchers from 9 states (Figure 3). **Please contact us if you want more information or would like to get involved in the Black Dot Initiative.**

Examples of cooperative and on-farm research:

- A Specialty Crop Research Initiative (SCRI) planning grant was submitted in late 2025. A stakeholder advisory board has been identified, and an SCRI SREP project is in preparation by a team of potato scientists.
- Funding was received from the Northwest Potato Research Consortium (Miller, N. Olsen (U of ID), and C. Mattupalli (WSU)) and the North Dakota Department of Agriculture Specialty Crop Block Program (Pasche and A. Gevens (U of WI)) for parallel trials at 5 sites in 4 states (ND, ID, WA, WI) (Figures 4, 5, and 6).
- Grower-led, on-farm research has been conducted at several sites across the US (Table 1).
- Additional black dot research not presented here is being conducted by researchers and growers engaged in the Black Dot Initiative.

Table 1. A summary of black dot tuber blemish trials conducted by CSS Farms at 22 sites in 2024 and 2025.

Trial Type Mainly yellow and red varieties	*C. coccodes* in soil	Yield / tuber population	Visual tuber blemish	*C. coccodes* quantity in tubers / stolons
Strike (Chloropicrin) rate trials	NS	NS	*	NS
Strike (Chloropicrin) vs Vapam	*	na	Varied	Varied
In-Furrow Fungicide, Blocker	NS	NS	*	*** tubers**
Chemigated Fungicide	*	na	*	*** stolons**
Strike (Chloropicrin) + Mustard	NS	NS	Varied	NS
Double Mustard Cover Crop	na	NS	na	na
Seed Source Trials	na	*	Incomplete	NS
Seed Source Trials	na	*	**5 Reps ***	*** yellow cultivar**
RidEz	NS	na	*	NS
Quadris 3x	NS	na	Possible diff	NS
Chemigated Minuet	NS	NS	Possible diff	NS
Strike Max Rate	NS	na	Varied	*** stolons**
Blocker In-Furrow	NS	na	NS	NS
Velum Rise, Bexfond	NS	na	na	na
Velum Rise, Kpam, etc…	na	NS	na	na

NS = no significant difference; * indicates significant difference; na = not available.

Figure 1. Potato early (left), mid (center), and late (right) season stem lesions characteristic of the vine phase of black dot caused by *Colletotrichum coccodes.* Infection occurs early in the season. Stem tissue becomes progressively necrotic, and microsclerotia develop as the season progresses, resulting in premature plant death (photo credits Daniel Gill).

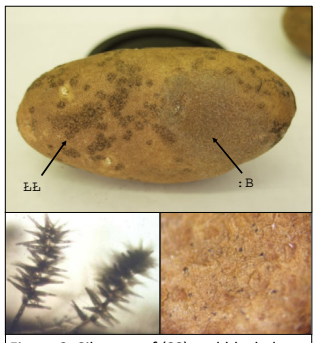

Figure 2. Silver scurf (SS) and black dot (BD) on the same tuber (top). Microscopic examination reveals the characteristic conidiophores and conidia of *Helminthosporium solani* (lower left) and microsclerotia of *C. coccodes* (lower right) on the tuber surface after incubation at room temperature in high humidity for 3 weeks (photo credits P. Hamm).

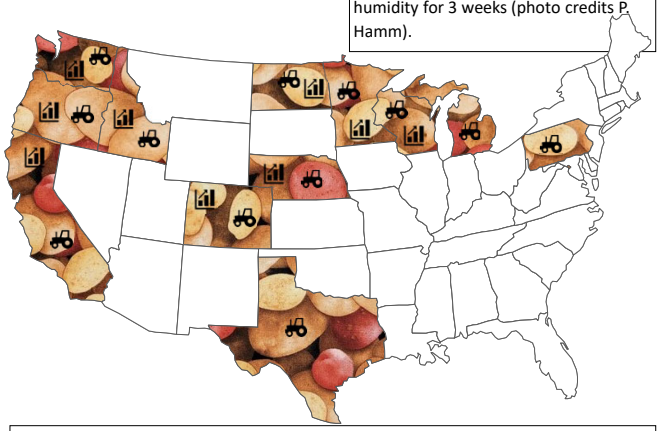

Figure 3. Illustration of locations (states) of growers, stakeholders, and researchers engaged in the Black Dot Initiative. Icons are arbitrarily placed inside each state.

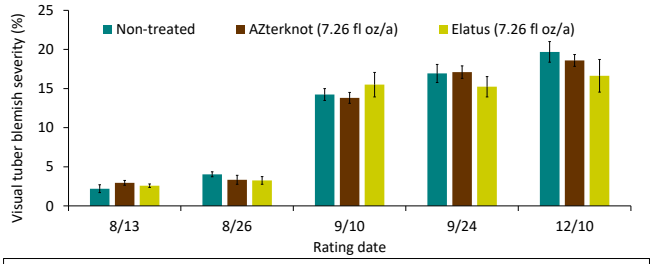

Figure 4. Severity of tuber blemish on a yellow cultivar grown in North Dakota, and not-treated, or treated in-furrow at planting with AZterknot or Elatus. Within evaluation dates, there was no significant difference among treatments. The trial was harvested on Oct 24. (Pasche)

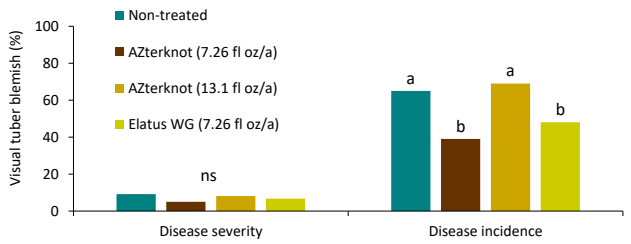

Figure 6. Incidence and severity of tuber blemish on the yellow cultivar Columba grown in Wisconsin, and not-treated, or treated in-furrow at planting with AZterknot or Elatus. Disease severity did not differ across treatments; a significant difference in disease incidence was observed. (Gevens)

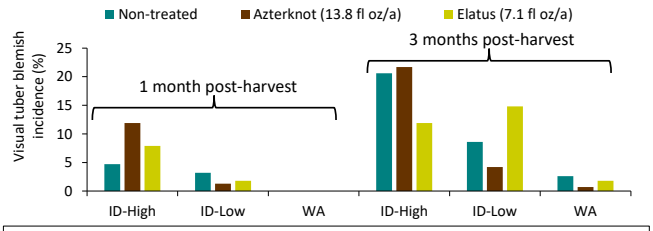

Figure 5. Incidence of tuber blemish on the yellow cultivar Gala grown at three sites in Idaho (low and high soil infestation) and Washington (field soil with undetectable *C. coccodes*), and not-treated, or treated in-furrow at planting with AZterknot or Elatus. Within evaluation date and trial site, there was no significant difference among treatments. (Miller, Olsen, and Mattupalli)