

Kentucky Bluegrass for Non-burn Seed Production

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Objective 1

Identify Kentucky bluegrass germplasm that has good turfgrass quality while producing sustained seed yield under non-burn seed production

Objective 2

Evaluate effectiveness of seed yield component selection to enhance non-burn seed production while maintaining turf quality

Germplasm Source



**Initially, more than 225
accessions were tested**



- 45 accessions evaluated in seed production and turfgrass trials
- 10 selection made for seed yield under bale residue removal and good turfgrass quality

Origin of Selections

PI 368241	Palmer, Alaska
PI 349188	Haines, Alaska
PI 371775	Juneau, Alaska
PI 371768	Hope, Alaska
PI 539057	Siberia
PI 539059	Siberia
PI 230132	Iran
PI 574523	(‘Belturf’)
‘Midnight’	Oregon, Pure Seed Testing
‘Kenblue’	Univ. Kentucky

Selection for Seed Yield Components



Selection was for plant with highest:

- 1) Panicles per area
 - 2) Seeds per panicle
 - 3) Seed weight
 - 4) Seed yield per plant
- + Base population

Seed Increase of 50 Selections at Central Ferry, WA



Turfgrass Trial; Pullman, WA

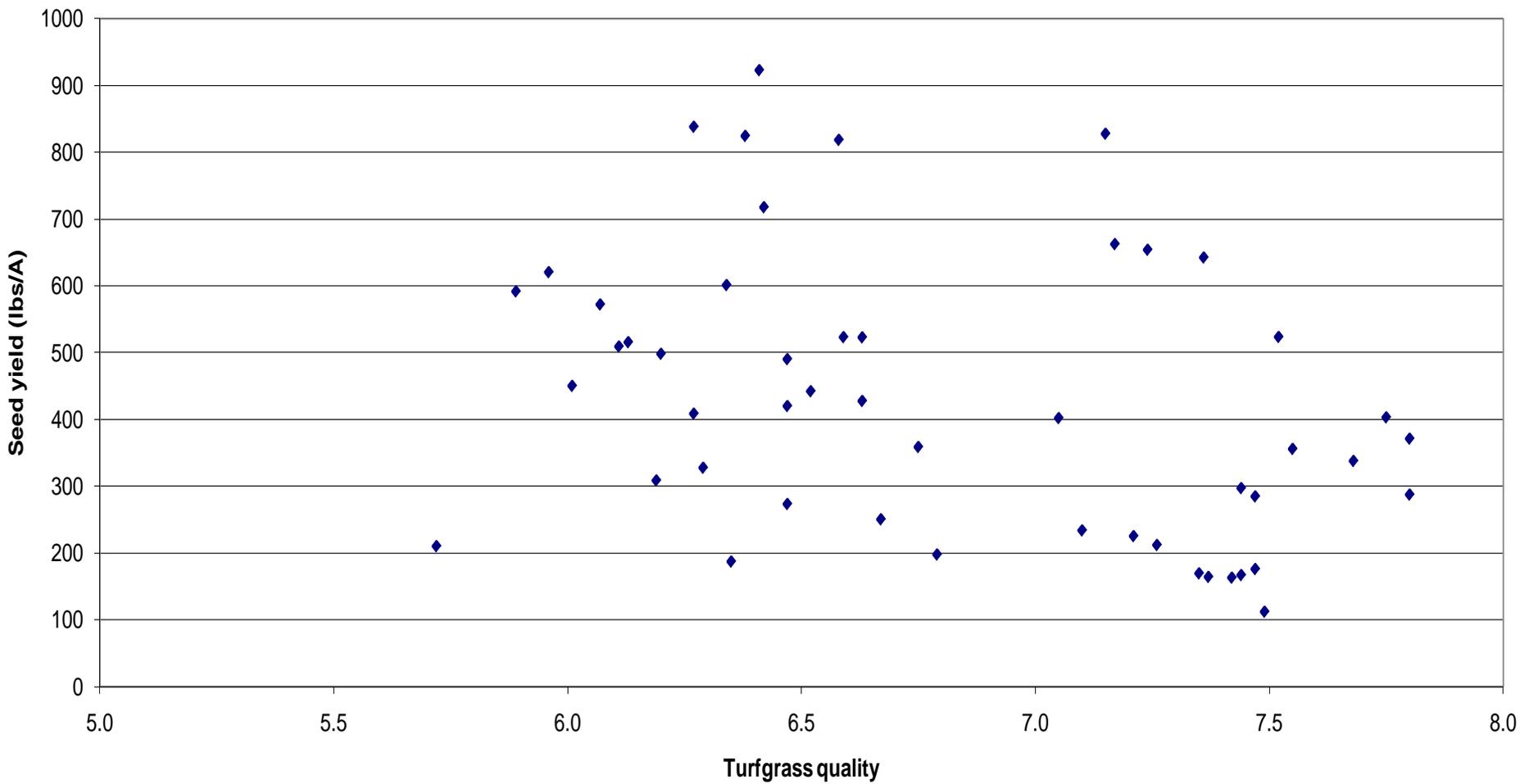
- 50 entries planted in a randomized complete-block design with 3 replications; rated monthly
- **Quality**



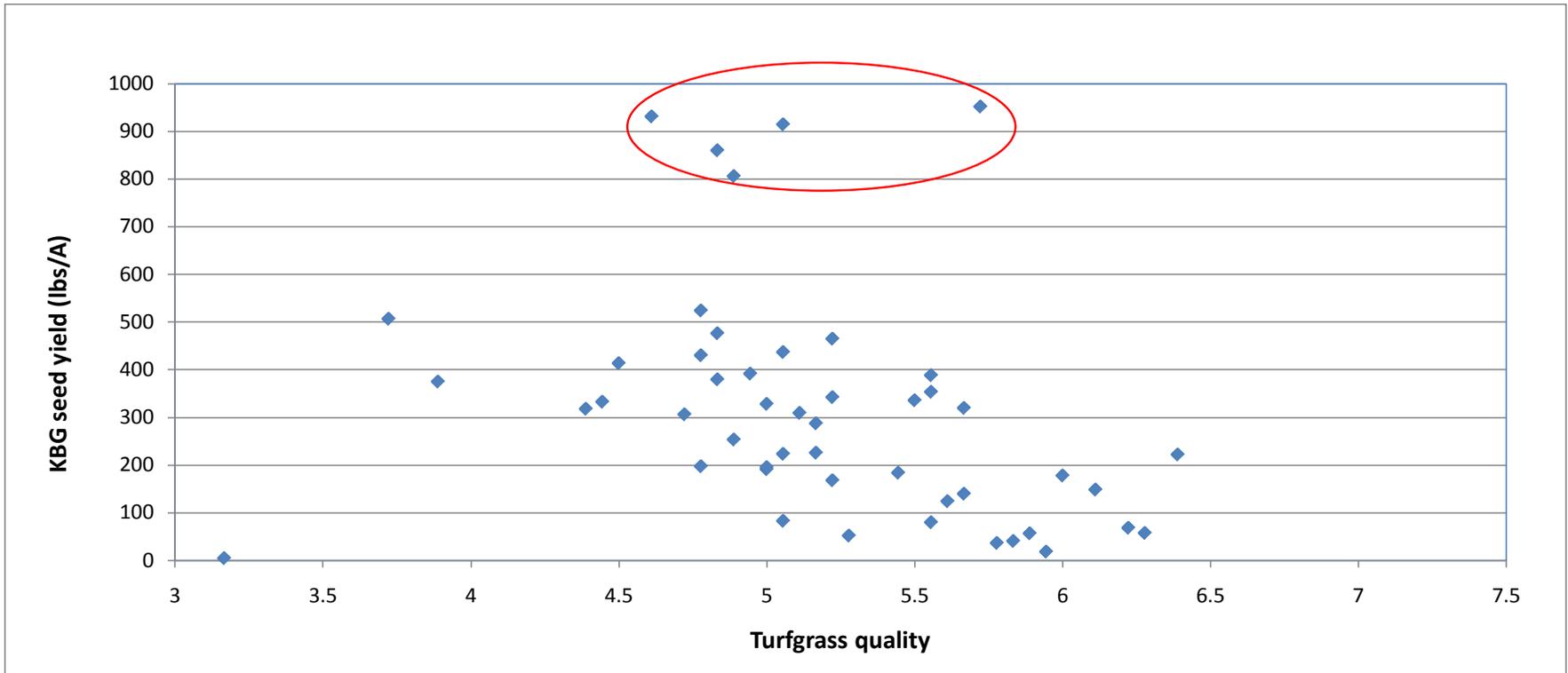
Seed Production (Irrigated and Non-irrigated); Pullman, WA

- 50 entries planted in a randomized complete-block design with 3 replications
- **Seed yield**

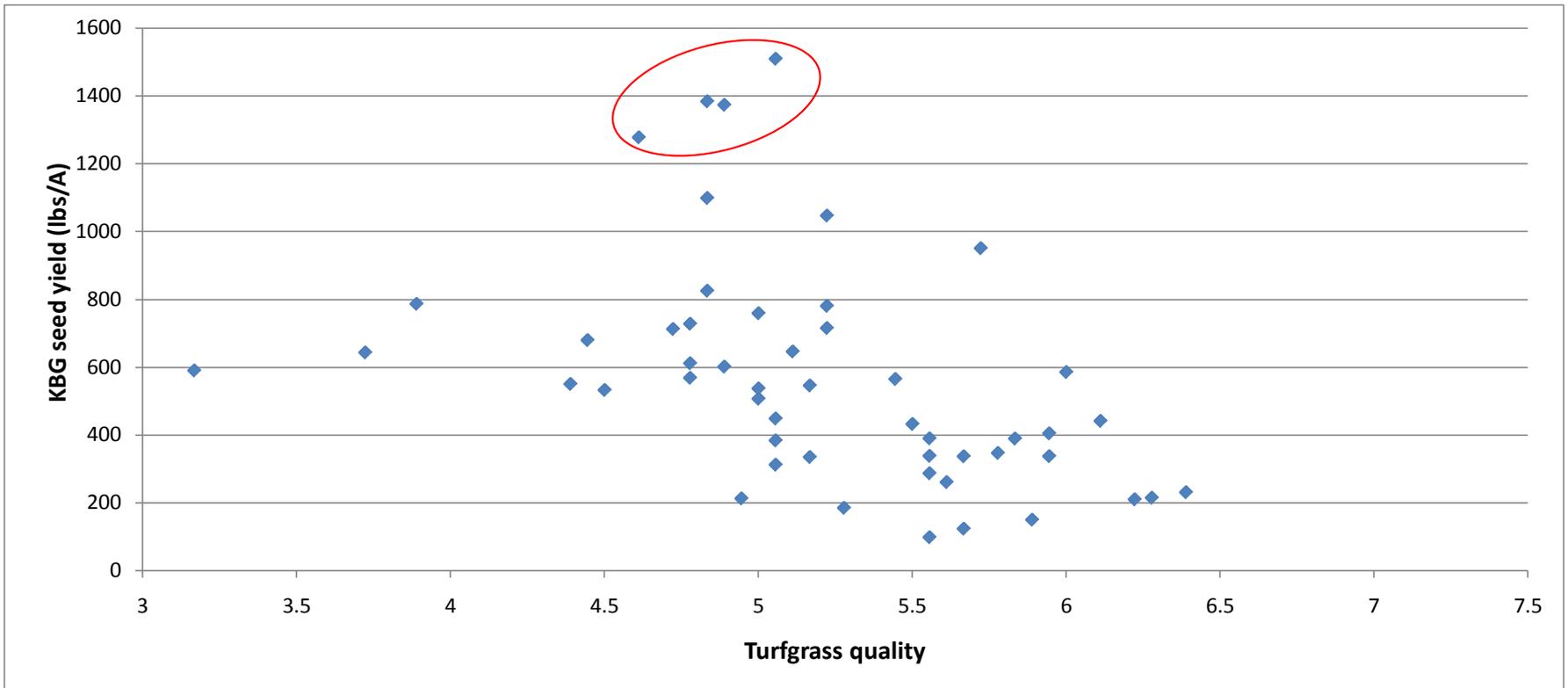




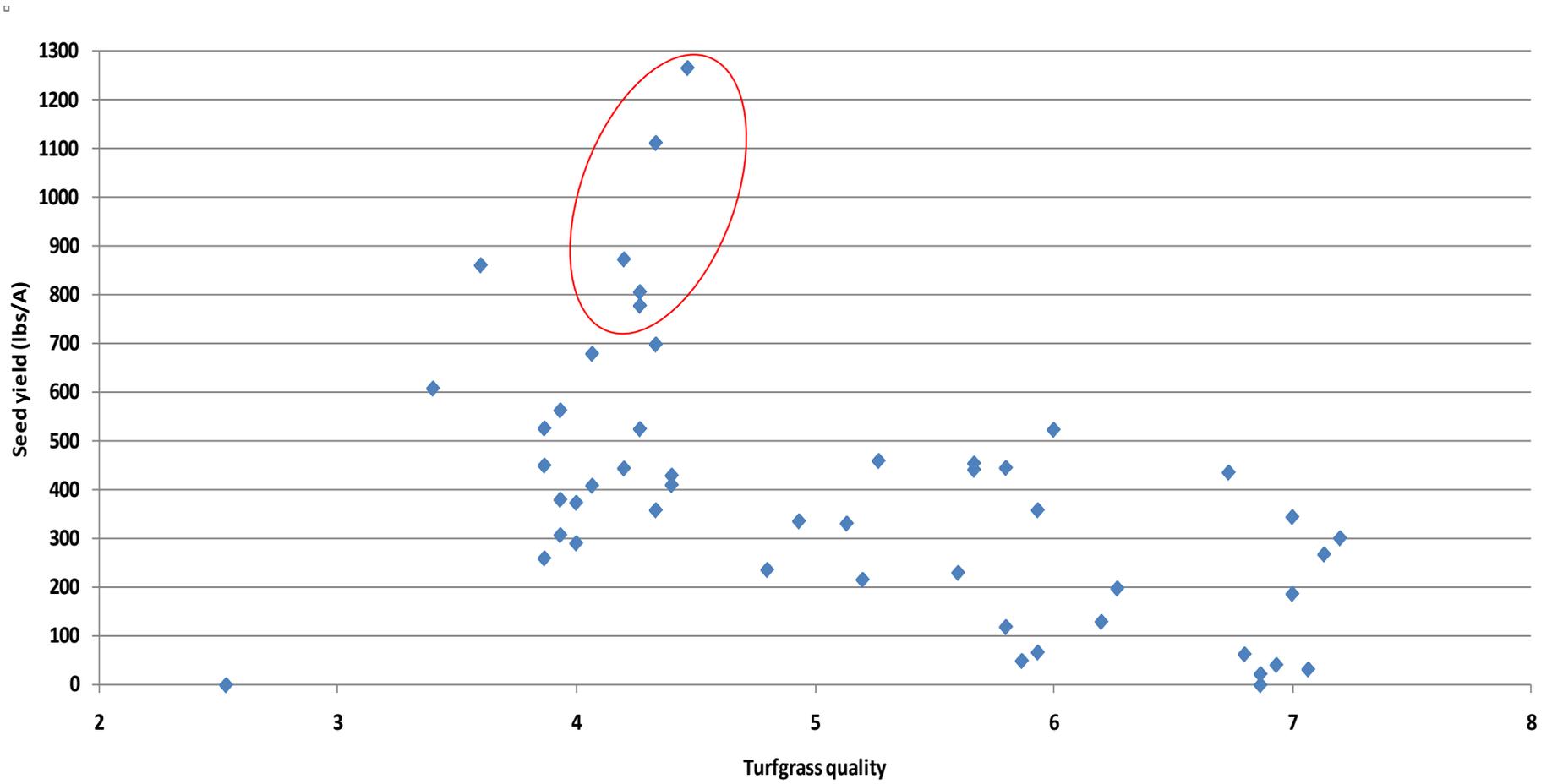
Seed yield (2008) vs. turf quality (2007-2008). Dashed circle is PI368241 and one Kenblue. Solid red circle is PI371775.



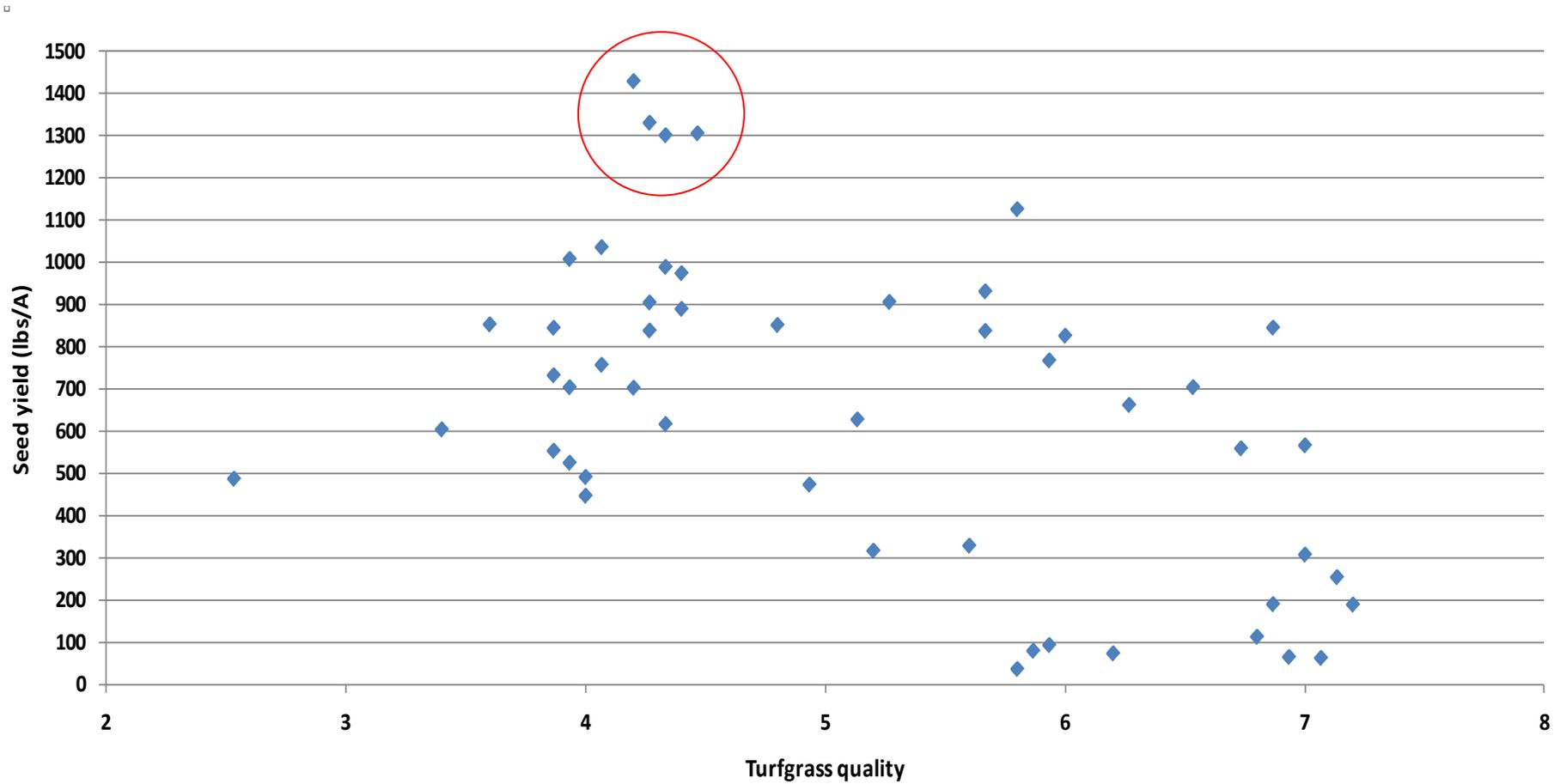
**Non-irrigated seed yield (2009) vs. turf quality (2009).
Circle is PI368241 and one Kenblue.**



Irrigated seed yield (2009) vs. turf quality (2009). Circle is PI368241.



Non-irrigated seed yield (2010) vs. turf quality (2010). Circle is PI368241 and one selection of ‘Kenblue’.



Irrigated seed yield (2010) vs. turf quality (2010). Circle is PI368241.

Conclusions (2008-2010 Project)

- **Several selections showed promise as high yielding turf-type bluegrass for non-burn seed production**
 - **PI368241**
 - **Kenblue selection seed/head for non-irrigated**

2011 – 2014

- **Continue to evaluate seed production under no-burn management in diverse environments (dryland and irrigated) for 4th (2011) harvest.**
- **Continue to test selections for turf quality at several locations (Pullman, WA; Auburn, AL; Puyallup, WA).**
- **Begin seed increase of promising selections for on-farm testing.**



Spring 2011 plant for seed increase:

PI368241 seed/head (irr.); head/area (non-irr.)

Kenblue seed/head (non-irr.)

Midnight seed wt. (irr. or non-irr.)

PI371768 head/area (irr.)



Kentucky Bluegrass Hydromulch

Washington State University

University of Washington



WSU Turfgrass and Agronomy Research Center

6/15/2010



Hydrostraw

Cook 4: $\text{NH}_4\text{OH}/\text{KOH}$ (60 min. cook time)

**Cook 1:
5% NaOH/5% KOH**

7/21/2010



CHECK

7/21/2010

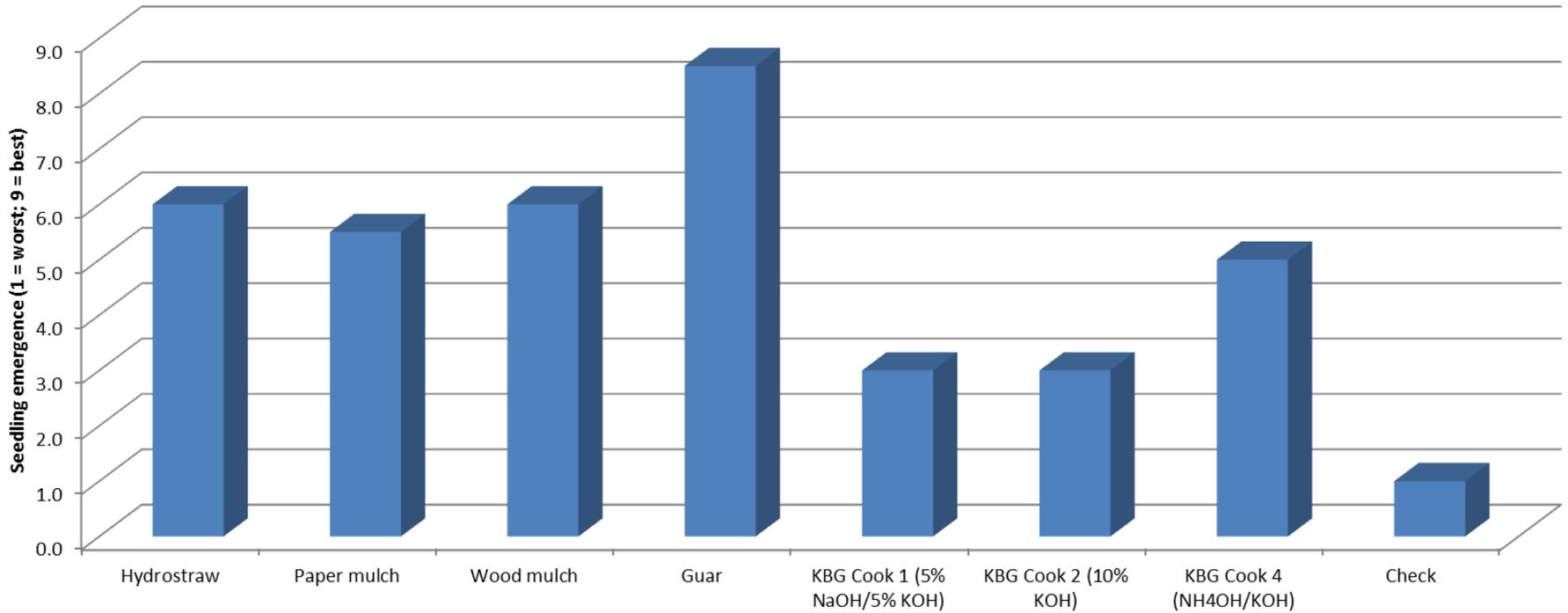
Cook 4: $\text{NH}_4\text{OH}/\text{KOH}$ (60 min. cook time)

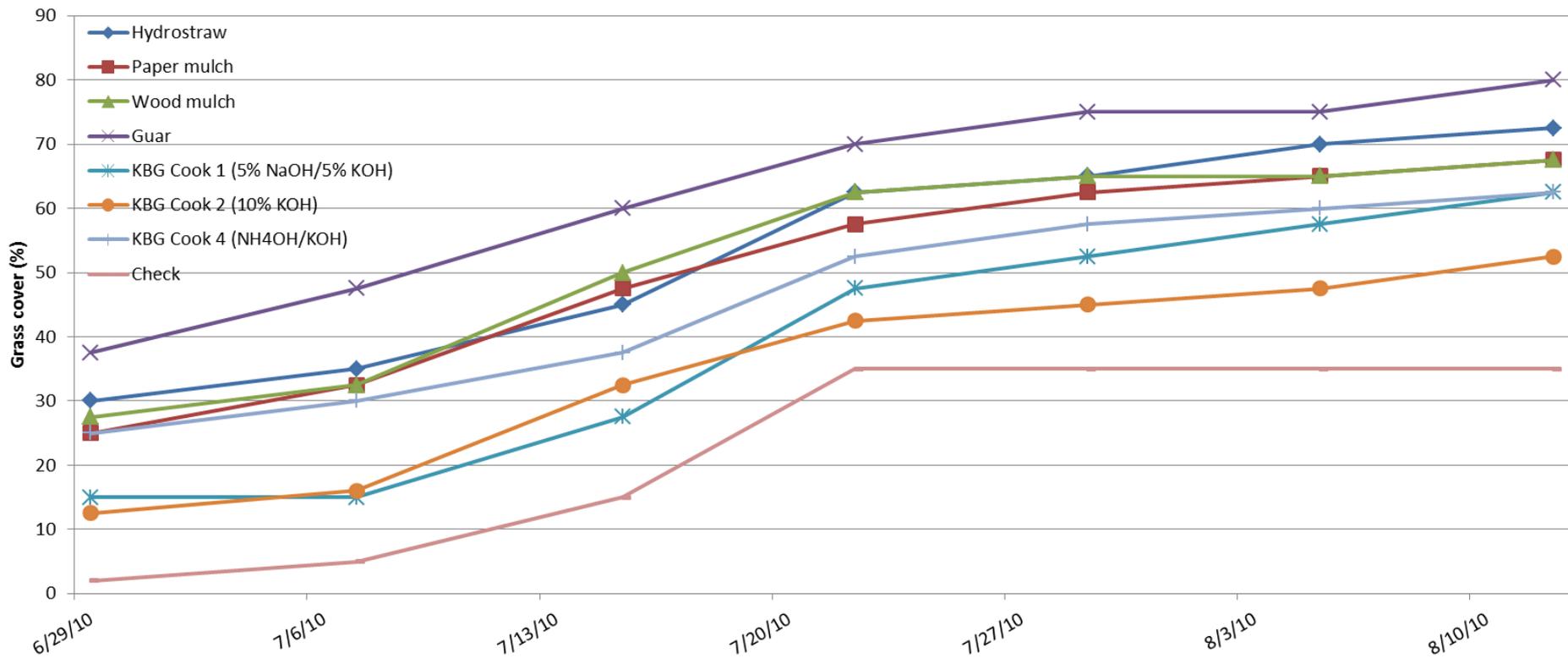
7/21/2010



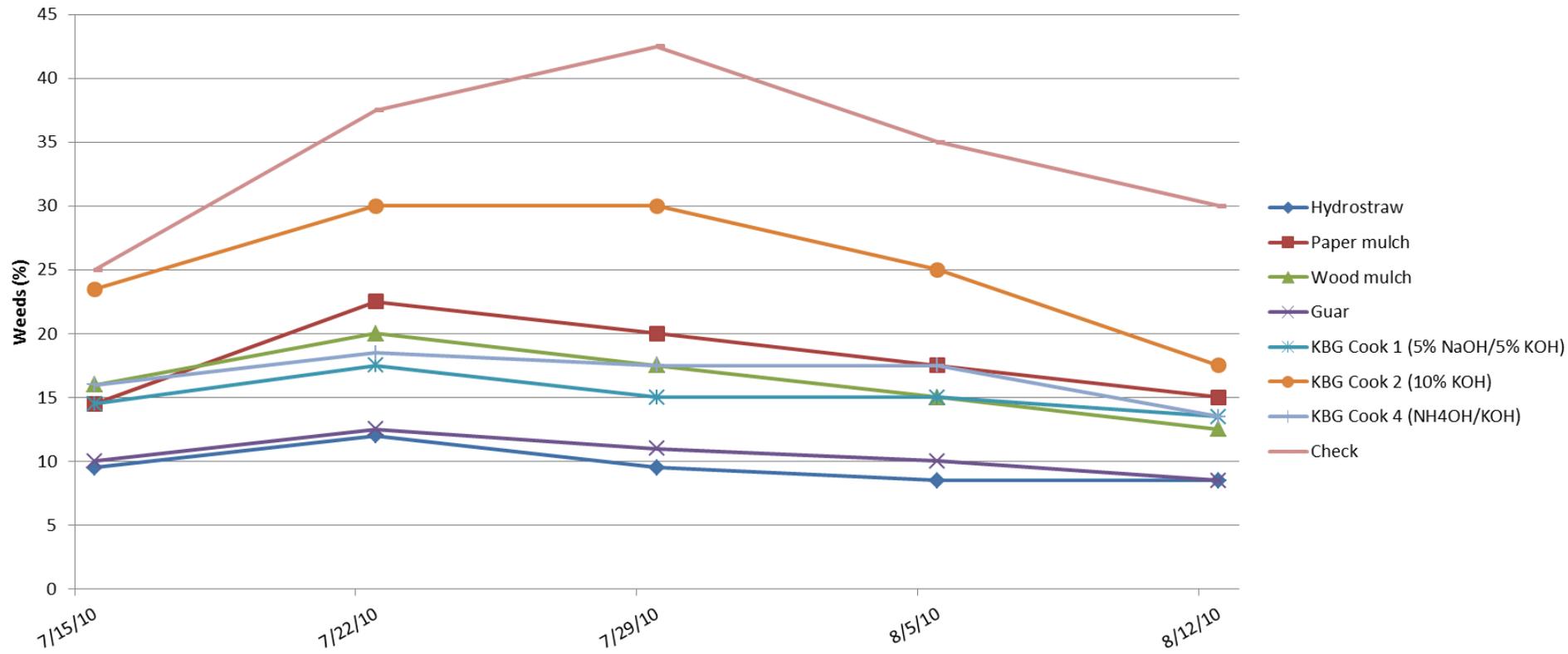
Hydrostraw with Guar

Seedling emergence 6/25/10

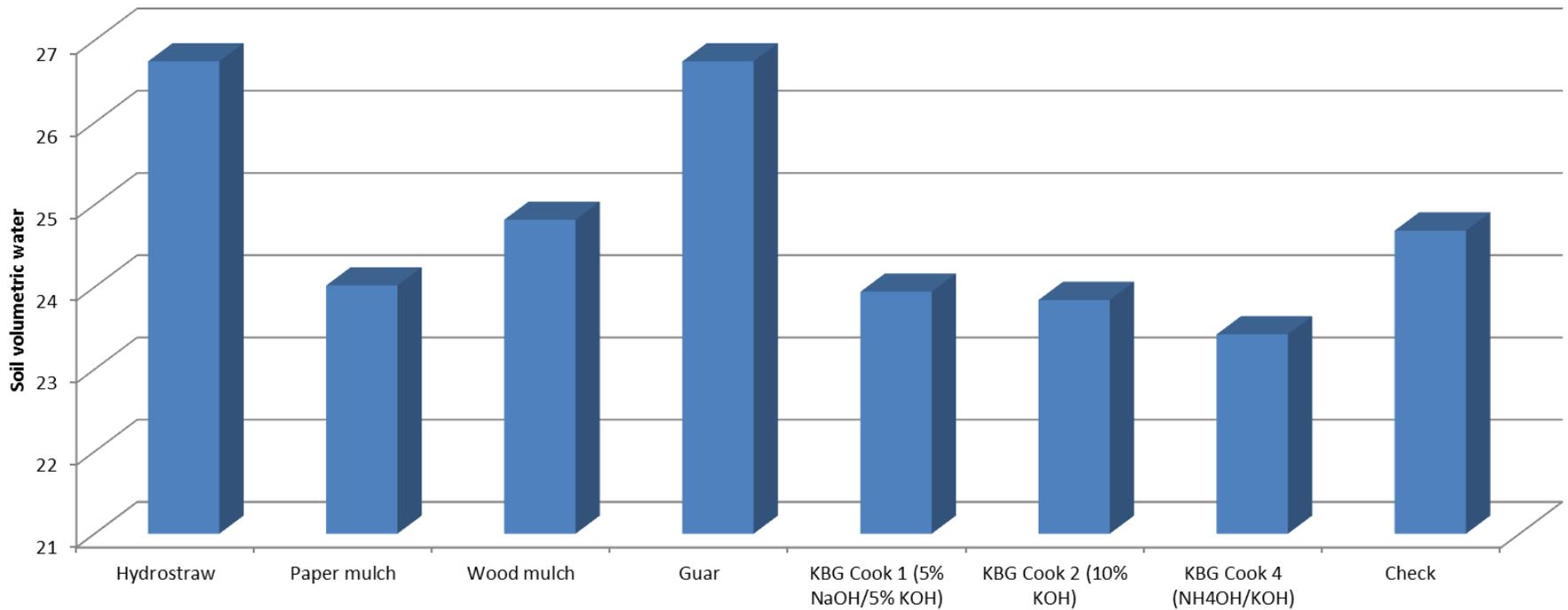




Percent Broadleaf and Grass Weeds in Turfgrass Stand



Soil volumetric water (6/25/10)



Justification

