



2022 Fusarium Wilt Field Day

Fusarium wilt of lettuce, caused by the fungal pathogen *Fusarium oxysporum* f.sp. *lactucae*, is severely impacting productivity and thus, the competitiveness of the Arizona lettuce industry. Since 2015, the Yuma Center of Excellence for Desert Agriculture (YCEDA) has managed annual trials evaluating commercial and pre-commercial lettuce cultivars for resistance to *Fusarium* wilt. YCEDA is funded by the Arizona Specialty Crop Block Grant Program to conduct Fusarium wilt of lettuce field trials through the 2023-2024 season, additional funding will be applied for to continue these trials if the industry finds this work valuable.

In 2022, 29 iceberg varieties and 17 romaine cultivars were planted. Please see the field map to guide you through the trial. You are welcome to cut lettuce from the first 10 feet at the south end of the trials.

The heat and humidity near planting resulted in uneven germination. The cooler weather since planting means the disease progression has been slow. The cultivars were evaluated to provide data for the field day, but there will be a second evaluation in December to allow more time for disease development. Final results will be presented at the Southwest Ag Summit and will be available online at desertagsolutions.org on the Fusarium project page. You can use the QR code to easily access this website.

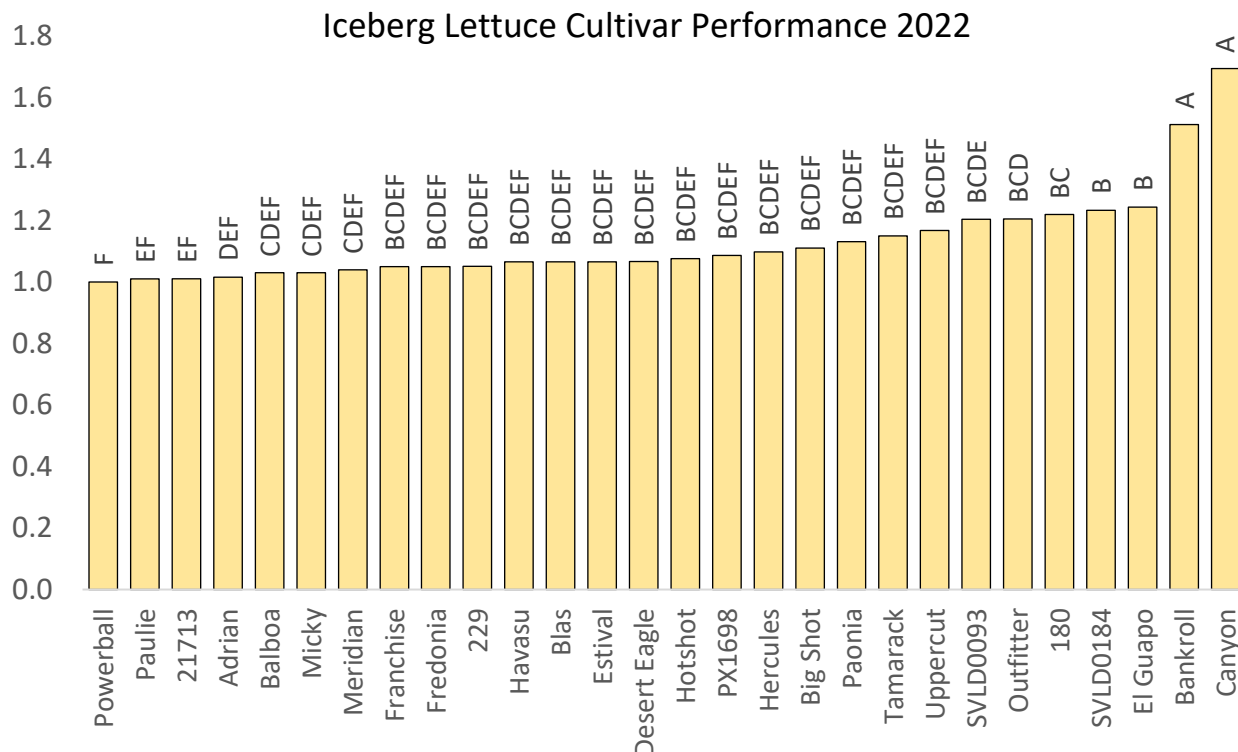


Iceberg Trial Results:

Wet date: 9/15

Evaluation date: 11/28-11/29

1-4 Disease index scale: 1 = No Disease, 4 = Dead or nearly dead



Cultivars with the same letter are not significantly different ($P \leq 0.05$, Tukey's HSD)

YCEDA is evaluating more than commercial cultivars, here is what we are also working on:

Biosolarization

Biosolarization is a method for controlling soil-residing pathogens. A carbon source is incorporated into the soil and the soil is made anaerobic, generally by adding water and plastic mulch. The anaerobic microbes consume the carbon and produce volatile fatty acids that suppress the disease-causing organisms. In the 2022 trial, date paste is being used as a carbon source and both flooding and plastic mulch are being tested for creating the anaerobic environment. Results will be presented at the Southwest Ag Summit.

Breeding lines from public programs

We work with public breeding programs to independently evaluate breeding lines to speed up the development of new cultivars.

Pre-commercial cultivars from private breeding programs

We work with private breeding programs to independently evaluate pre-commercial cultivars to speed up the release of new resistant or tolerant cultivars. YCEDA collaborates with Robert Masson on this objective. If you are a breeder interested in participating in our 2023 trial, contact Robert (masson@arizona.edu).

Fusarium wilt resistant breeding lines of different lettuce types with molecular markers

Richard Michelmore from UC Davis has developed lines that are available for breeders. The trial is available for viewing and more information is available at the registration table.

Please feel free to ask questions about these trials and some are available for viewing.

Contact Stephanie Slinski with questions: sslinski@arizona.edu, 928-782-5891