



Evaluating Asparagus for Future Climatic Needs

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Paul Fenton, Fenton's Produce



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Climate Related Challenges with Asparagus

- Very responsive to soil temperatures after winter
- Range of climatic adaptations
- Easily damaged by frost - causes big losses, damages young plants
- Grows ridiculously fast when warm – causes loss, can't pick that fast
- Warm late winters can force out of the ground far too early
 - More frost & lost yield
 - Significantly increases risk of herbicide injury
- Northward march of southern diseases
 - Northern varieties have no tolerances
 - Southern varieties - can they put away enough root reserves to be productive?
- The Jersey Series is done and folks' plantings are aging out. What do you plant for a 10-15 year crop?

Guard 1	Row 1	Row 2	Row 3	Row 4	Row 5	Row 6	Row 7	Row 8	Row 9	Row 10	Guard 2
Remainder of grower's field											
25' long Rep IV	Rear 5 foot buffer between plots and grower's field (ornamentals)										GUARD 2
	IV - 401 - F Spartacus	IV -402- H Grande	IV- 403-G Jersey Knight	IV - 404 - B Equinox	IV - 405 - C Eclipse	IV -406- I Walker Deluxe	IV - 407 - E Erasmus	IV - 408 - J Atlas	IV - 409 - A Millennium	IV-410- D Purple Passion	
	5 foot buffer between plots in a row consisting of ornamentals										
	III-301-G Jersey Knight	III-302- D Purple Passion	III - 303 - J Atlas	III - 304 - F Spartacus	III - 305 - B Equinox	III -306- H Grande	III - 307 - A Millennium	III -308- I Walker Deluxe	III - 309 - C Eclipse	III - 310 - E Erasmus	
	5 foot buffer between plots in a row consisting of ornamentals										
	II -201- I Walker Deluxe	II - 202 - C Eclipse	II - 203 - H Grande	II - 204 - E Erasmus	II - 205 - A Millennium	II - 206 - J Atlas	II - 207 - F Spartacus	II- 208- D Purple Passion	II -209- G Jersey Knight	II - 210 - B Equinox	
	5 foot buffer between plots in a row consisting of ornamentals										
	I - 101 - A Millennium	I - 102 - B Equinox	I - 103 - C Eclipse	I - 104 - D Purple Passion	I - 105 - E Erasmus	I - 106 - F Spartacus	I - 107 - G Jersey Knight	I - 108 - H Grande	I - 109 - I Walker Deluxe	I - 110 - J Atlas	
	Front 5 foot buffer between plots and grower's field (ornamentals)										
	Front of grower's field										

Trial dimensions = 125' L x 72' W = 2/10 A

Each bed is 6 foot on center. 12 beds total. 1 guard row on each side to create canopy & disease conditions, 10 trt beds.

The Seedlings – 2 year old crowns 2023

Guelph Equinox
Sarah Caldwell
Sage – trial mascot



Bejo Erasmus



Bejo Spartacus



Walker Grande



Walker Atlas



Guelph
Millenium



The Crowns – 3 year crowns in 2023

Guelph
Eclipse



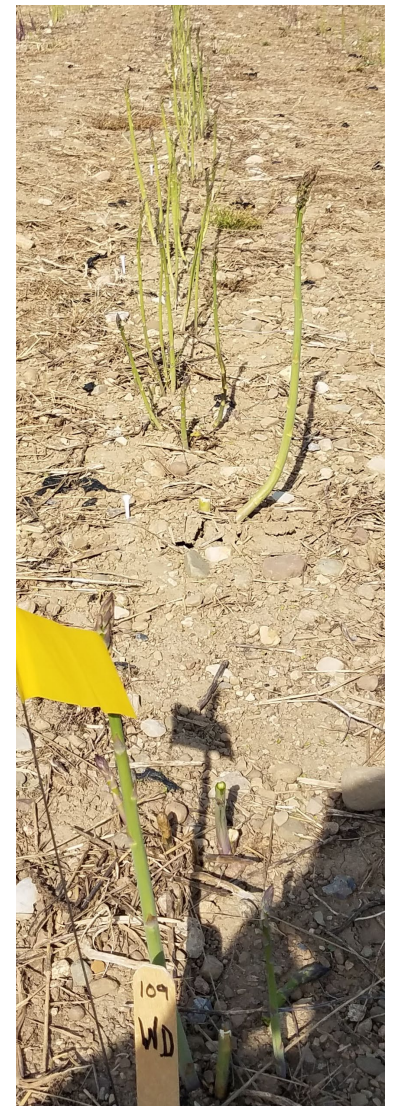
Purple
Passion



Jersey
Knight



Walker
Deluxe



Variety	Seed setting?	Traits
Guelph Millennium	male hybrid	Industry standard in Ontario & Michigan. Tolerates silt-loam soil.
Guelph Equinox	male hybrid	Brand new little brother!
Guelph Eclipse	male hybrid	Paul selected this cv, is being used in industry as a Millenium alternative
Purple Passion	Heavy seed on females	Fusarium tolerance, rust susceptible. Purple.
Erasmus	male hybrid	Intermediate area cultivar. Prone to lodging. Purple.
Spartacus	male hybrid	Cold area cultivar meant for our climate. Strong disease tolerances. Variety for early harvest niche. Millenium competitor
Jersey Knight		representative of old variety , common in what aging plantings
Grande		High rust, fusarium, blight tolerant. Tol to other foliar disease. Warm - hot weather cultivar. Can be used for white asparagus.
Walker Deluxe	98% male	High rust tolerance, fusarium & other foliar tolerances. Last of Rutgers program.
Atlas	Heavy seed on females	fusarium, rust, blight, cercospora tolerant. Can be used for white asparagus. Warm-hot climate variety

May 5, 2023

First Cutting

No Millenium

a good thing, that's frost avoidance at work

Seedlings all up

Seedling crowns sit more shallowly than varieties planted as 1-yr crowns. Soil warms faster and forces them up sooner



Walker is one of the first crown varieties up. Too early this year, got hit.



Warmer climate adaptation

The warmest adapted varieties – Atlas (CR) and Grande (CL) – struggle. Up to soon, the first spears get damaged and weakens plants. They might not be going to bed on time, either. No rust.

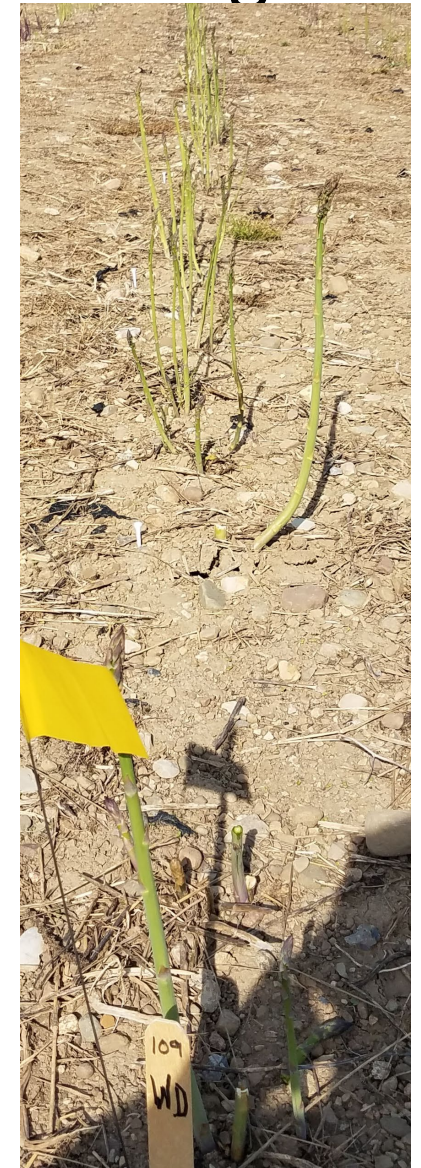


Erasmus is doing quite nicely. Ferns are tippy.





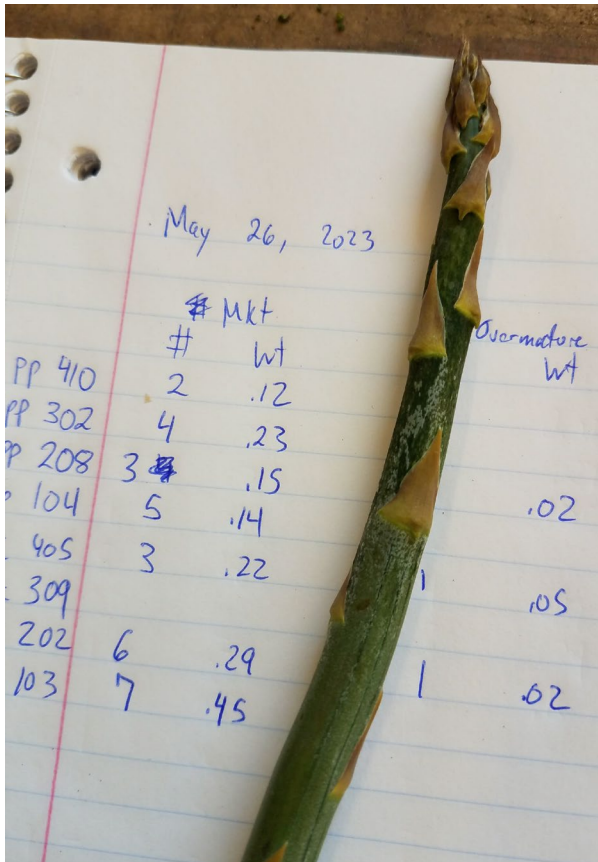
The best northern green?
Not sure yet, but all “new”
cv.s better than J.Knight.



Susceptibilities: Rust

Millenium, Eclipse, and Jersey Knight most susceptible. J. Knight crowns introduced it to the trial. Untreated in 2022, high inoculum load for 2023

Light frost damage



May 23 – Rust appears



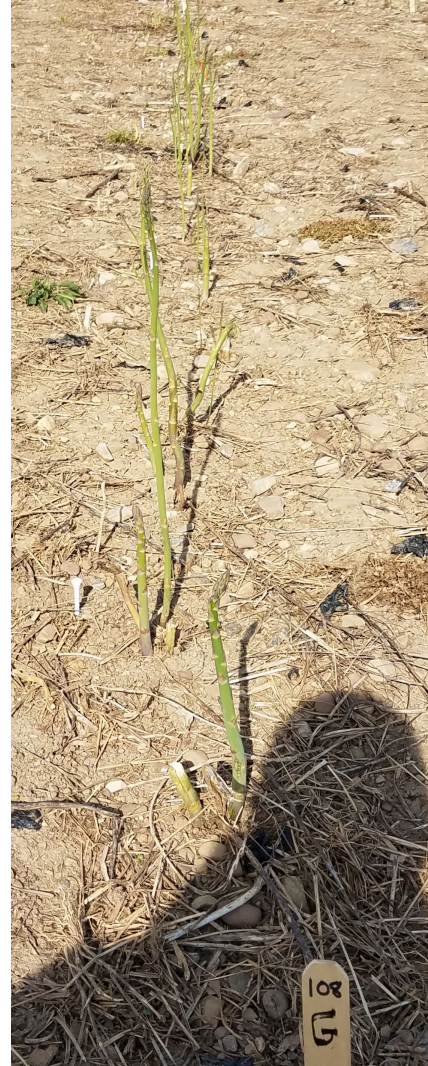
June 6 – New lesions Eclipse



Old lesions Millenium



Colored Asparagus Purple and White





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