

Grower Thoughts on Evaluating Varieties for Pest and Disease Management

- UC and other breeding programs have a good catalog of disease resistance ratings
- Arthropod pest “tolerance” is present in some varieties and should be included in evals
- Physical plant characteristics can also lend themselves to pest and disease resistance

Cultivar comparisons

| <u>Cultivar</u> | <u>Macroph.</u> | <u>Fusarium</u> |
|-----------------|-----------------|-----------------|
| Chandler | resistant | susceptible |
| Seascape | resistant | susceptible |
| Monterey | susceptible | resistant |
| San Andreas | susceptible | resistant |
| Ventana | susceptible | resistant |

* Resistant ≠ Immune

Disease resistance scores for Albion compared with Monterey, San Andreas, and Portola in 2005-2007

| Cultivar | <i>Phytophthora</i> Resistance Score(5=best) | <i>Verticillium</i> Resistance Score(5=best) | <i>Colletotrichum</i> Resistance Score(5=best) |
|---------------------|--|--|--|
| Albion | 4.3 | 3.8 | 3.4 |
| Monterey (CN222) | 3.2 | 3.4 | 2.4 |
| San Andreas (CN223) | 3.8 | 3.8 | 2.9 |
| Portola (CN224) | 4.4 | 3.3 | 2.7 |

UC Strawberry Variety Disease Ratings Comparisons

Varietal resistance/tolerance to Macrophomina
(Center Row of advanced variety selection plot)



BGI 6-3024 exhibits strong tolerance to Lygus damage

Cull rate due to extreme Lygus pressure only +/- 15%
compared to highly susceptible variety at 80-85% cull rate

Fruit deformity due Lygus bug damage



Deformity due to poor pollination, genetic, environmental, and other factors



BGI 6-3024 exhibits reduced bronzing due to thrips and/or environmental factors

<https://bugsforbugs.com.au/>



Less plant vigor makes good spray coverage easy, but less than optimal plant canopy can suppress mite bio-control

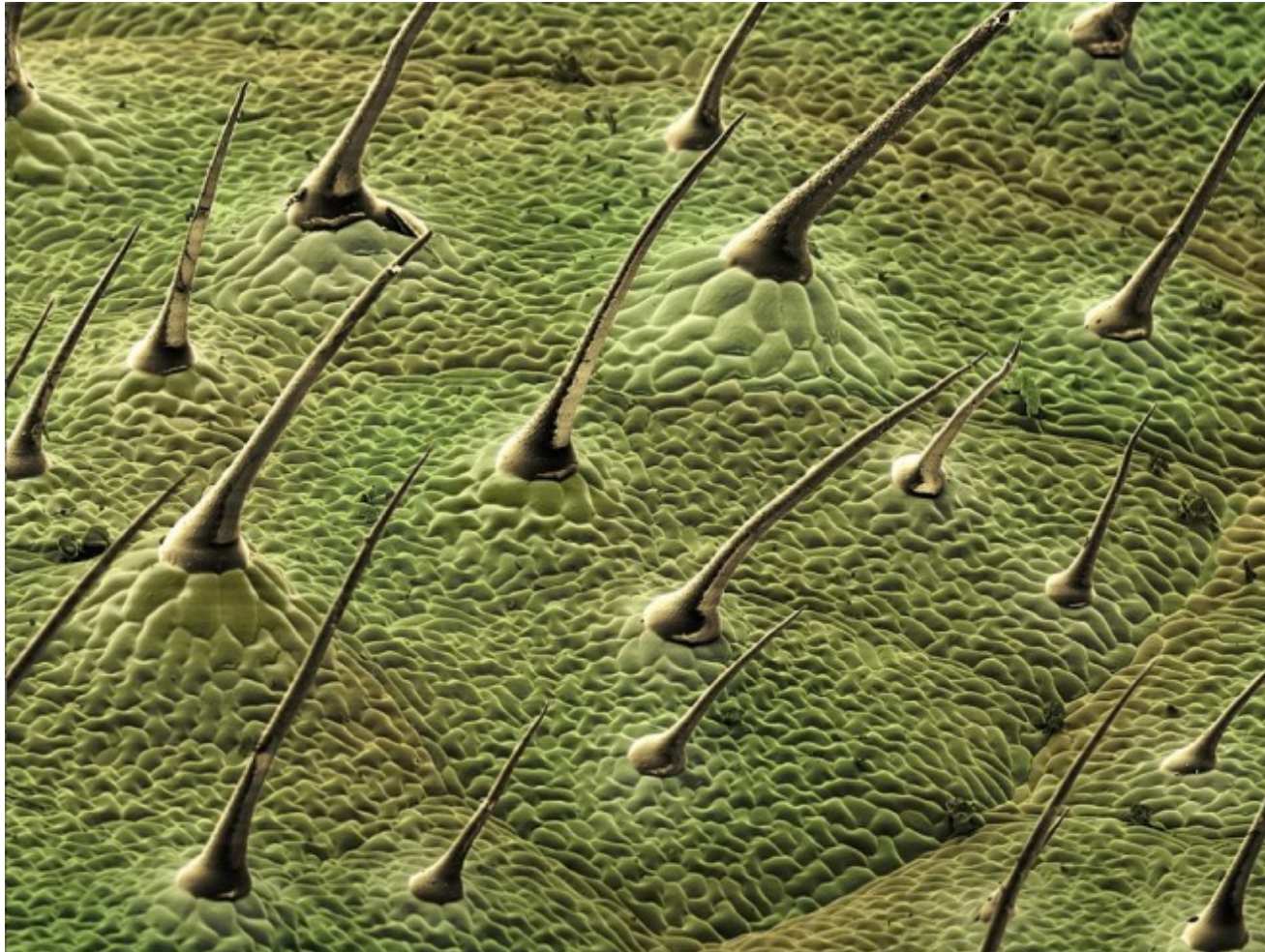
Dense foliage favors mite predators, but can also favor diseases and be hard to harvest



Optimal plant size in March. Plenty of room to grow.



Extensive leaf hairs can trap excess dust and also impede biological mite control agents like *P. Persimilis*



<https://images.fineartamerica.com>

Final Question

- Beneficial genetic traits have always been key to successful strawberry farming, and
- Disease pressure, particularly soil borne, is increasing as predicted after banning M-B
- Is it time to re-evaluate the strawberry industry's reluctance to embrace genetic engineering for disease management?