

Seagriculture USA
Ketchikan, AK
Griffin Hill

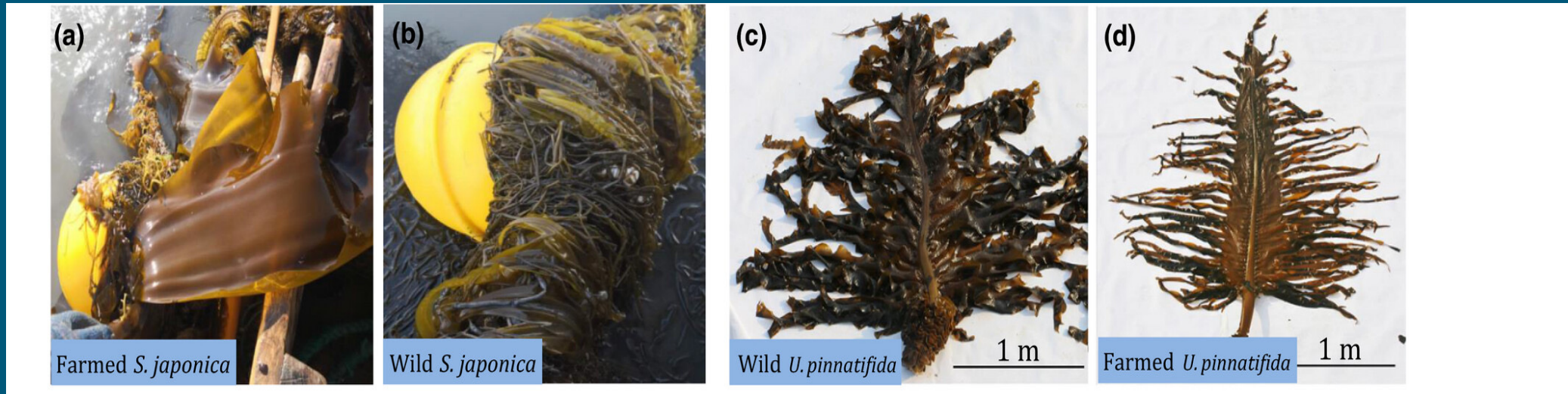
*Improving the farm while
protecting the wild: using
genetics to preserve kelp
biodiversity*



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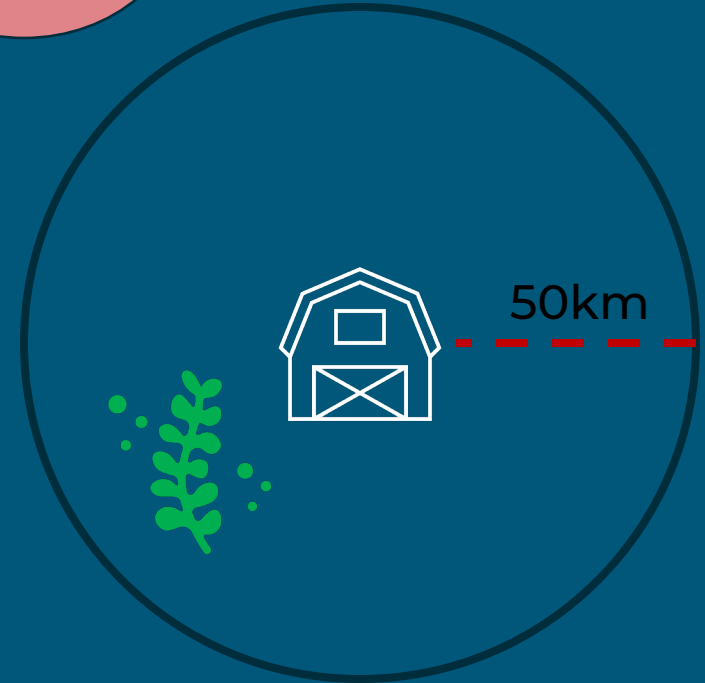
Improving the farm

- Selecting the right strain for the job
- Optimizing for the desired product
- Size, color, taste, temperature tolerance, disease resistance



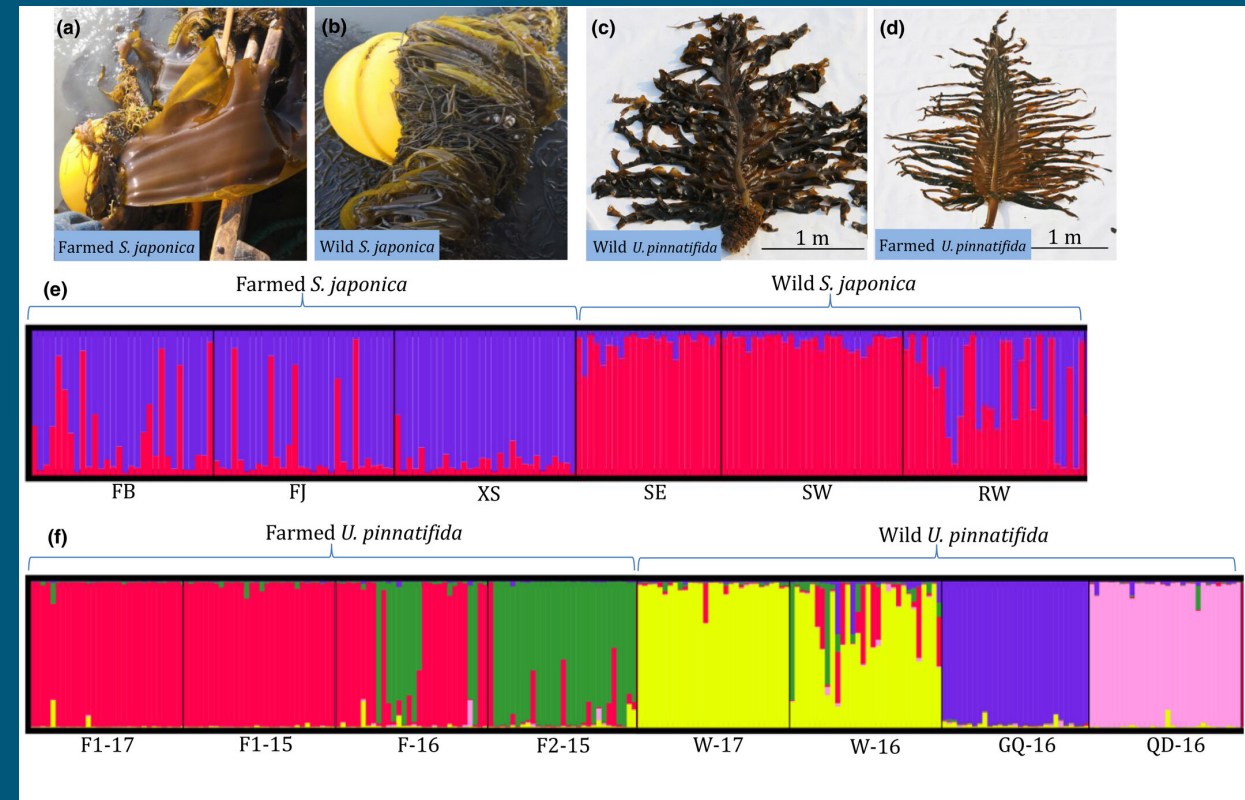
Protecting the wild

- Genetic diversity = resilience
- Distance = differentiation
- «50-50 rule» in Alaska and beyond



Where the genetics come in

- Identifying differences both observable and not
- Correlating differences in characteristics to driving parameters and forces of selection



Adapted from Hu et al. 2021





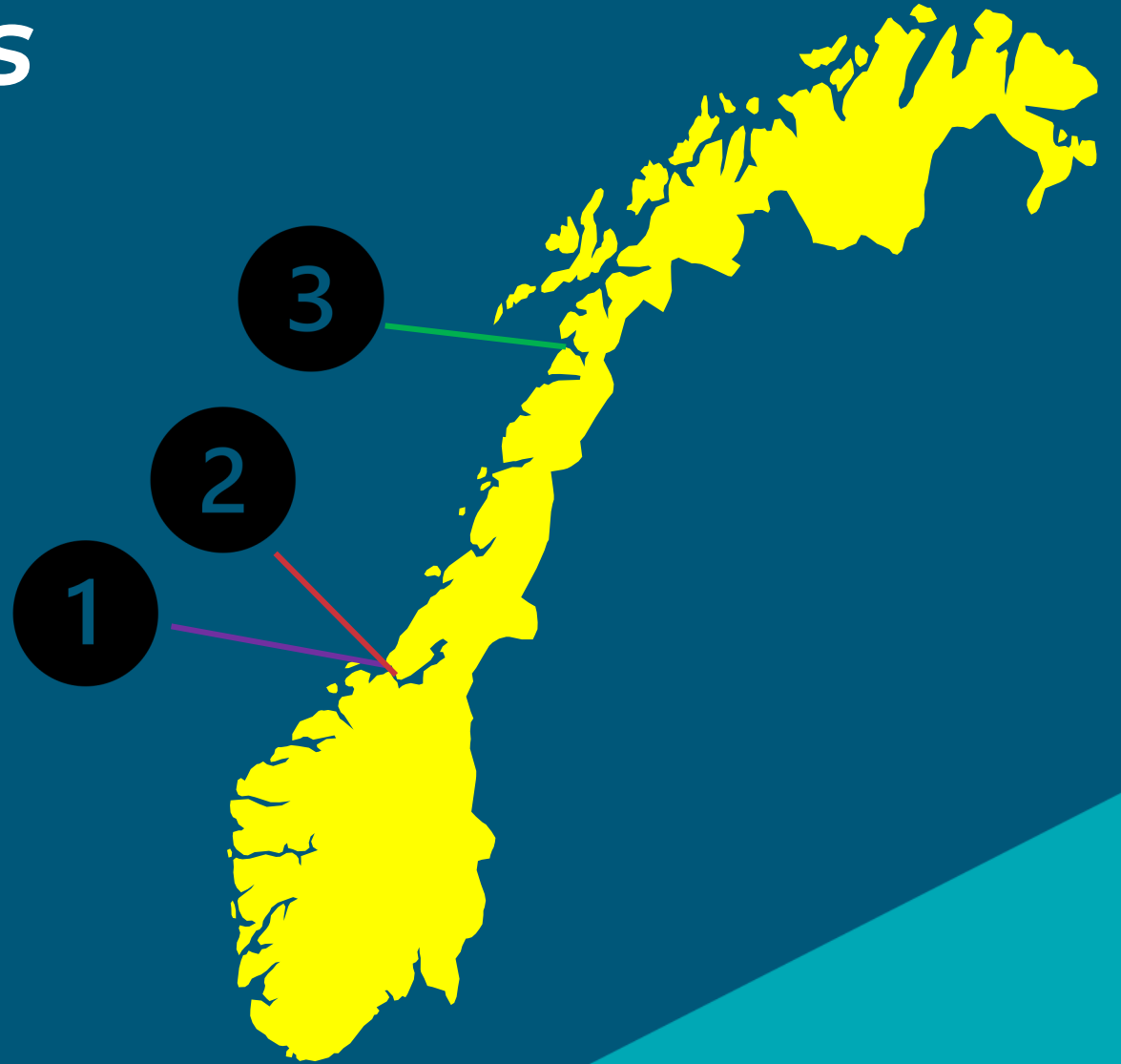
Preliminary results

- Compared *Saccharina latissima* from a range of environments at different distances from one another



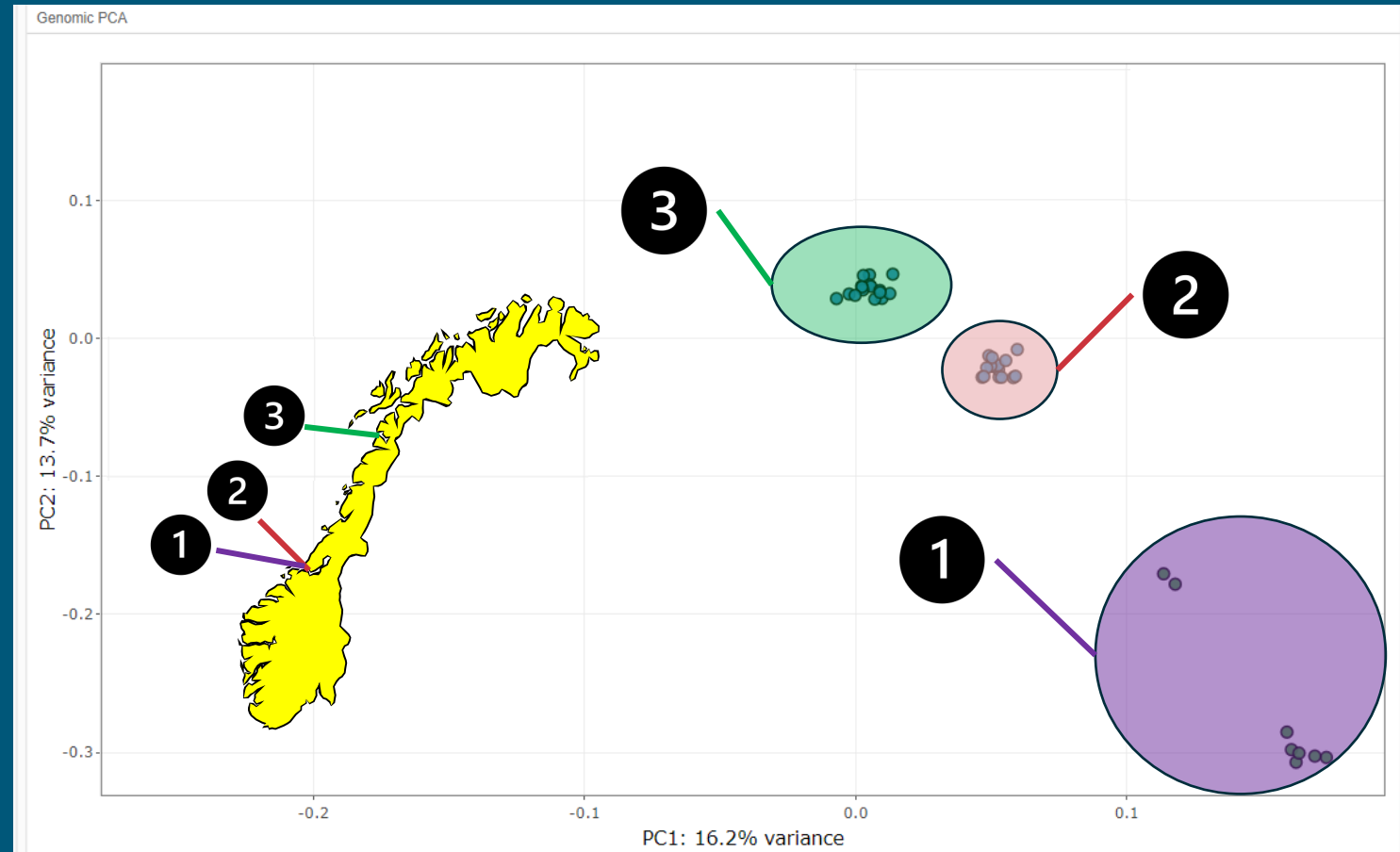
Preliminary results

- Compared kelp from a range of environments at different distances from one another
- Included kelp from a variety of cultivation approaches

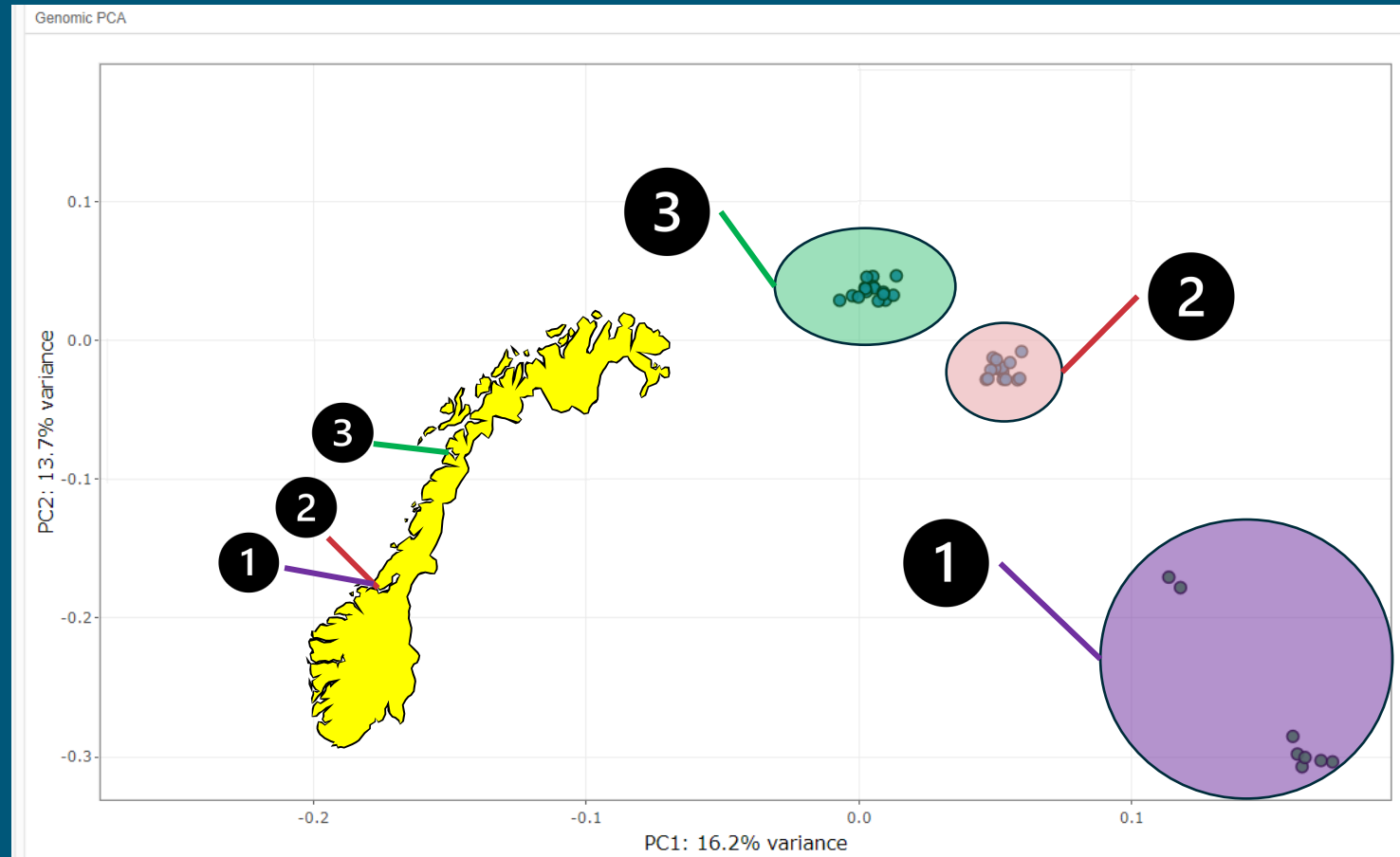


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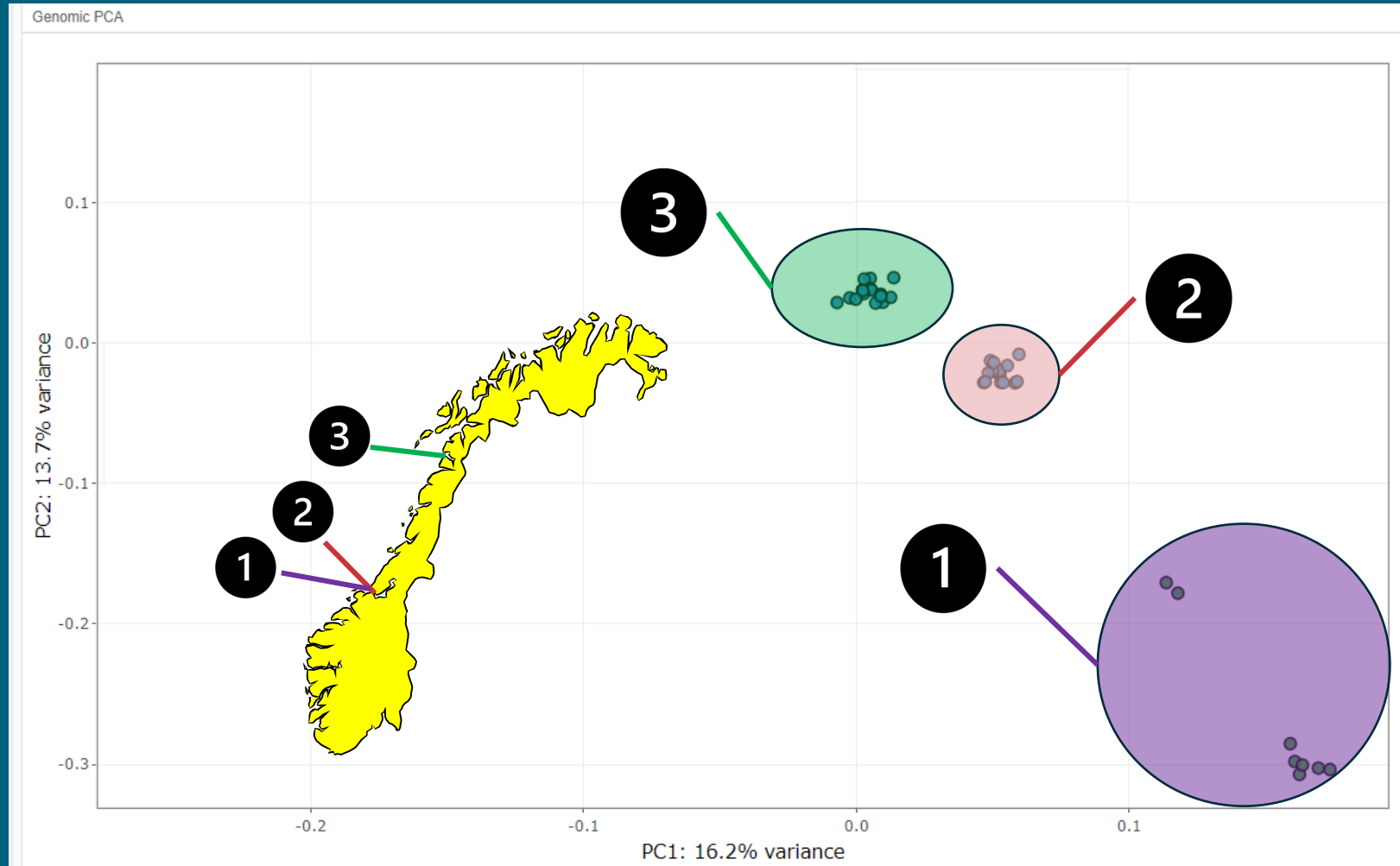


Preliminary results



Genetic similarity not driven primarily by geographic separation

Take home message



Environment and cultivation method can play as big a role as distance in driving genetic differences

Questions?



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