Morgan Academy

The James Hutton Institute

Are all daffodils the same?

Results and analysis

The daffodil project uses DNA sequencing to show how different daffodil varieties are related to each other. As DNA is copied, changes (mutations) occur at random. Figure 1a shows a region where daffodil sequences have few changes. Figure 1b is a region where mutations are unlikely to have negative effects and so they accumulate. The changes *N. tazetta* and "Martinette" are related to each other but distinct from the other daffodils.

Figure 1a

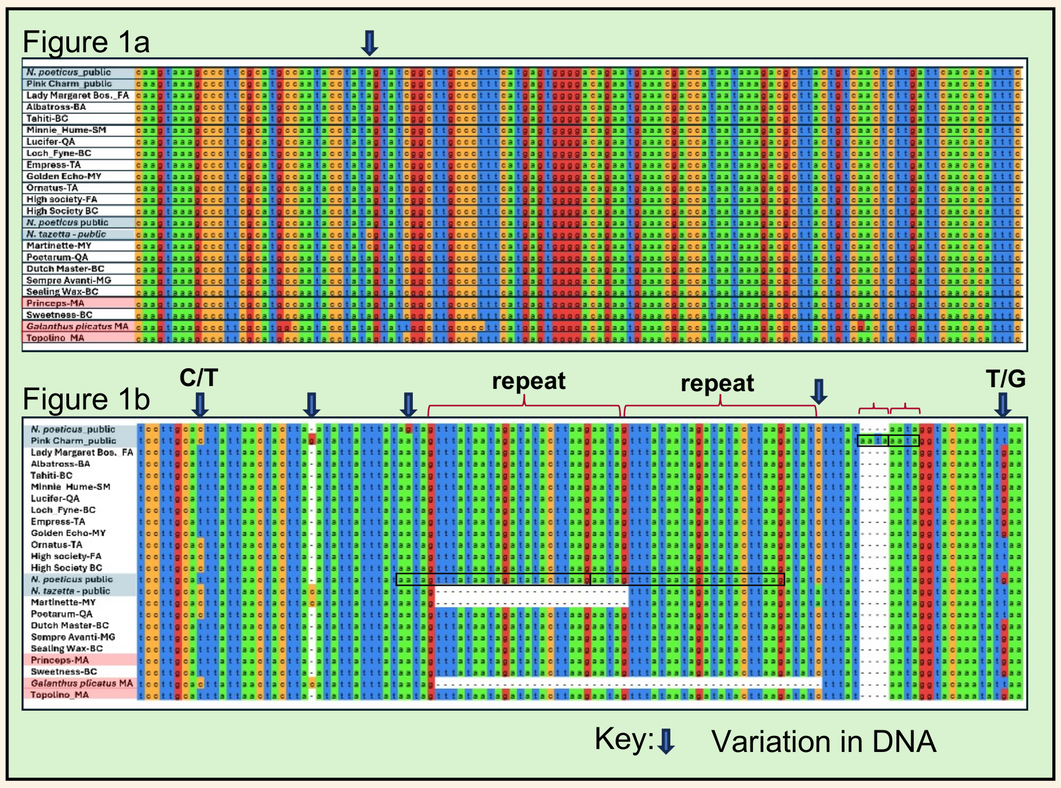
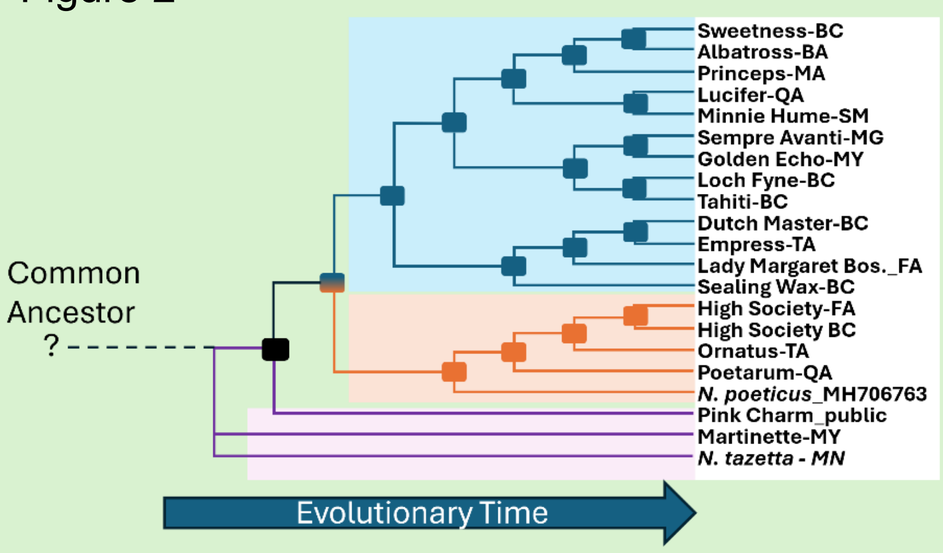


Figure 2



By comparing the differences in sequences, we can generate a type of "family tree" of our heritage daffodils (Figure 2). On our tree, "Princeps" which was sequenced at Morgan academy, is closely related to "Sweetness" and "Albatross" however, it is less related to these daffodils than they are to each other. On the bigger scale our tree shows that the heritage daffodils can be grouped into two distinct families (shown in blue and orange).

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