# Appendix

Figure A1: Map of Trial Locations

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Location

* Clayton
* Kinston
* Oxford
* Reidsville
* Rocky Mount
* Rural Hall
* Whiteville

●

●

Figure A2: Histogram of Appearances in Official Variety Trials (OVT) by Variety

200

150

100

Count

50

0

0 10 20 30 40 50

Years in Official Variety Trials

Figure A3: Posterior Predictive Checks

Observed Yields Replicate Yields

1000 2000 3000 4000

Yield (lbs./ac.)

* + 1. Yield Model

Observed Ratios Replicate Ratios

−1 0 1 2 3

log(Sugars/Alkaloids)

* + 1. Quality Model

Note: Replicates are drawn using the same data used to fit the models.

Figure A4: Trace Plots of Selected Yield Model Parameters

0.00020

0.00015

0.00010

0.00005

0.00000

b\_Intercept

15000

10000

5000

b\_Intercept

2500 5000 7500 10000 12500 0 500 1000 1500 2000 2500

b\_prec

5

4

3

2

1

0

−0.2 0.0 0.2

0.2

0.0

−0.2

b\_prec

0 500 1000 1500 2000 2500

Chain

0.4

0.3

0.2

0.1

0.0

b\_low

−6 −4 −2

b\_low 1

−2

−4 2

−6 3

0 500 1000 1500 2000 2500

4

1.0

0.5

0.0

b\_med

2.0 2.5 3.0 3.5 4.0

4.0

3.5

3.0

2.5

2.0

b\_med

0 500 1000 1500 2000 2500

0.20

0.15

0.10

0.05

0.00

b\_high

0 5 10

b\_high

10

5

0

−5

0 500 1000 1500 2000 2500

Table A1: Measured Contribution of Genetics to Change in Quality

|  |  |  |  |
| --- | --- | --- | --- |
| Period | Genetics | Technology | Relative Contribution |
| AGC |  |  |  |
| 1963-1981 | 0.02 | -0.31 | 6.06% |
| 1981-2000 | -0.02 | 0.32 | 5.88% |
| 2000-2017 | 0.01 | 0.07 | 12.5% |
| MGC |  |  |  |
| 1963-1981 | 0.03 | -0.31 | 8.82% |
| 1981-2000 | -0.03 | 0.32 | 8.57% |
| 2000-2017 | 0.04 | 0.07 | 36.36% |

Note: Columns 1 and 2 denote sugars/alkaloids ratio changes in average genetic contribution or maximum genetic contribution between varieties introduced at the beginning and end of the time periods. Column 3 measures relative contribution of genetics as percentage of change due to genetics and technology.