



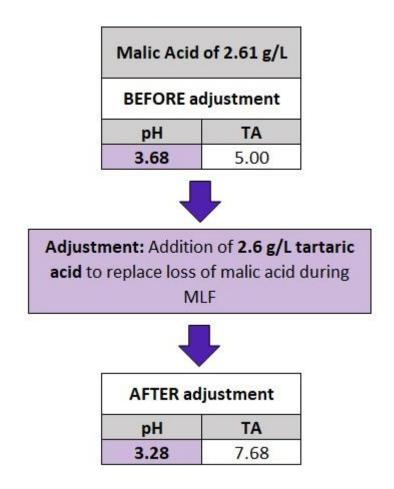
**Minimum, maximum and average** values per cultivar and region according to their balling values:

| Cultivar           | Region  |           | Balling  | pН                  | TA           | Malic        | NOPA       | NH4         | YAN        | Glucose  | Fructose        | Potassiun          |
|--------------------|---|-----------|--|---------------------|--------------|--------------|------------|-------------|------------|--|-----------------|--------------------|
| Julia              | Kegion  | Max       | 25.07  | 3.82                | 4.46         | 1.69         | 90         | 49          | 139        | 130.69   | 129.56          | 2275.78            |
| Cabernet Sauvignon | Franschhoek   | Min       | 22.22  | 3.67                | 4.68         | 2.09         | 119        | 75          | 194        | 99.43  | 101.65          | 1866.07            |
|                    |   | Avg       | 23.94  | 3.71                | 4.76         | 1.81         | 88         | 51          | 138        | 119.67   | 120.85          | 2112.92            |
|                    |   | 192020100 | 2200000  | A-20202             | 704-00- co   |              |            | 11.22.22.20 | 2220       | 22222  | 22222           |                    |
|                    | Paarl   | Max       | 28.14  | 3.83                | 5.98         | 1.77         | 114        | 57          | 171        | 133.21   | 134.24          | 2830.66            |
|                    |   | Min       | 22.20  | 3.75                | 5.83         | 2.15         | 95         | 53<br>69    | 148<br>192 | 112.02   | 104.06          | 2591.27            |
|                    |   | Avg       | 24./5  | 3.83                | 5.50         | 2.28         | 123        | 05          | 132        | 121.09   | 118.77          | 2467.66            |
|                    | Stellenbosch  | Max       | 25.67  | 3.71                | 5.19         | 2.99         | 82         | 40          | 122        | 118.06   | 124.38          | 2096.88            |
|                    |   | Min       | 22.00  | 3.52                | 6.37         | 2.61         | 84         | 50          | 134        | 113.5  | 107.89          | 2120.47            |
|                    |   | Avg       | 23.52  | 3.68                | 5.45         | 2.14         | 105        | 56          | 162        | 115.75   | 114.19          | 2033.17            |
|                    |   | Max       | 26.76  | 4.33                | 4.24         | 2.11         | 113        | 74          | 187        | 135.00   | 142.73          | 3285.29            |
|                    | Wellington  | Min       | 22.33  | 4.05                | 4.29         | 2.12         | 133        | 70          | 203        | 107.31   | 112.41          | 2623.23            |
|                    |   | Avg       | 24.12  | 4.09                | 4.45         | 2.01         | 114        | 73          | 187        | 116.31   | 123.86          | 2829.99            |
| Cabernet Franc     | Franschhoek   | May       | 27.18  | 3.91                | 3.05         | 1.47         | 55         | 6           | 61         | 141.24   | 151.44          | 1961.7             |
|                    |   | Max       | 23.26  | 3.76                | 4.01         | 1.68         | 148        | 74          | 222        | 102.23   | 124.68          | 1656.34            |
|                    |   | Avg       | 25.16  | 3.86                | 4.00         | 1.62         | 101        | 31          | 132        | 124.64   | 135.05          | 2089.87            |
|                    |   |           |  |                     |              |              |            |             |            |  |                 |                    |
|                    |   | Max       | 26.02  | 3.92                | 4.22         | 1.79         | 143        | 41          | 184        | 127.94   | 139.31          | 2294.23            |
|                    | Stellenbosch  | Min       | 22.22  | 3.53                | 6.25         | 2.72         | 124        | 73          | 197        | 106.21   | 105.68          | 2048.35            |
|                    |   | Avg       | 23.92  | 3.73                | 4.39         | 1.50         | 119        | 45          | 164        | 115.35   | 123.57          | 1789.24            |
| Cinsaut            | Paarl   | Max       | 26.58  | 3.82                | 4.79         | 1.79         | 229        | 111         | 340        | 131.60   | 146.06          | 1937.93            |
|                    |   | Min       | 22.82  | 3.88                | 4.15         | 2.08         | 202        | 79          | 281        | 105.78   | 104.66          | 2341.02            |
|                    |   | Avg       | 25.41  | 3.71                | 4.95         | 1.83         | 203        | 106         | 309        | 124.22   | 133.34          | 1867.59            |
| Malbec             | · ·   | Max       | 25.70  | 3.38                | 7.12         | 2.44         | 118        | 42          | 160        | 125.64   | 139.28          | 1181.39            |
|                    | Stellenbosch  | Min       | 22.04  | 3.58                | 4.90         | 2.22         | 116        | 74          | 190        | 114.29   | 112.09          | 1505.29            |
|                    |   | Avg       | 23.36  | 3.59                | 4.97         | 2.06         | 117        | 60          | 177        | 117.54   | 119.81          | 1602.60            |
| Merlot             |   | May       | 26.12  | 2.72                | 165          | 1.07         | 121        | 73          | 204        | 127.20   | 141 44          | 2110.02            |
|                    | Stellenbosch  | Max       | 26.13<br>22.07   | 3.72<br>3.56        | 4.65<br>5.96 | 1.07         | 131<br>128 | 65          | 193        | 137.30<br>108.21                               | 141.44<br>110.3 | 2110.93<br>1970.54 |
|                    | Stelleliboscii  | Avg       | 23.61  | 3.69                | 4.72         | 1.38         | 112        | 52          | 164        | 117.64   | 118.60          | 1962.81            |
| Petit<br>Verdot    |   |           |  |                     |              |              |            |             |            |  |                 |                    |
|                    |   | Max       | 24.33  | 3.80                | 4.87         | 2.09         | 127        | 22          | 149        | 122.37   | 127.89          | 2584.77            |
|                    | Stellenbosch  | Min       | 22.70  | 3.66<br>3.55        | 5.40         | 2.24         | 224<br>141 | 43<br>54    | 267<br>195 | 121.83<br>123.52                               | 101.11          | 1934.61<br>1729.17 |
|                    |   | М         | 20.00  | 5.55                | 0.02         | 2.00         |            |             | 130        | 125.52   | 110:03          | 1,23,1,            |
| Pinot<br>Noir      |   | Max       | 23.87  | 3.36                | 5.23         | 1.93         | 164        | 59          | 223        | 118.01   | 131.36          | 848.09             |
|                    | Elgin   | Min       | 22.26  | 3.38                | 6.15         | 2.87         | 140        | 47          | 187        | 115.71   | 119.34          | 1254.97            |
|                    |   | Avg       | 22.95  | 3.45                | 6.20         | 2.69         | 193        | 67          | 259        | 112.68   | 118.08          | 1280.46            |
| Shiraz             | Elgin   | Max       | 24.43  | 3.43                | 6.63         | 1.99         | 90         | 27          | 117        | 130.47   | 127.39          | 1875.42            |
|                    |   | Min       | 22.02  | 3.79                | 5.08         | 2.18         | 158        | 44          | 202        | 118.41   | 104.29          | 2693.14            |
|                    |   | Avg       | 23.55  | 3.52                | 5.98         | 1.96         | 114        | 39          | 153        | 122.08   | 117.68          | 1875.45            |
|                    | Franschhoek   | May       | 2/1 00   | /I 10               | 2 0/1        | 2.42         | 220        | 50          | 200        | 127.05   | 121 7           | 2622.26            |
|                    |   | Max       | 24.98  | 4.18<br>3.67        | 3.94<br>4.85 | 2.43<br>1.77 | 230<br>144 | 50<br>31    | 280<br>175 | 127.85<br>108.46                               | 131.7<br>101.72 | 2623.36<br>2323.14 |
|                    |   | Avg       | 23.88  | 3.85                | 4.74         | 2.18         | 173        | 46          | 219        | 120.21   | 114.90          | 2351.65            |
|                    |   | STEEL WAS | Sent to Sent t | 2 Mary Mary Control | Januarus -   | 24002000     | Mark Artis | 08/25/20    | 2000       | N-20041-00-00-00-00-00-00-00-00-00-00-00-00-00 | 20000000        |                    |
|                    | Paarl   | Max       | 25.03  | 3.56                | 5.88         | 1.21         | 90         | 40          | 130        | 132.53   | 128.1           | 2069.35            |
|                    |   | Min       | 23.01  | 3.71                | 4.25         | 1.08         | 162        | 55          | 217        | 115.3  | 117.29          | 2154.62            |
|                    |   | Avg       | 23.49  | 3.72                | 4.69         | 1.55         | 146        | 47          | 193        | 121.27   | 117.14          | 2209.90            |
|                    |   | Max       | 25.80  | 4.01                | 5.06         | 3.14         | 169        | 44          | 213        | 131.52   | 118.69          | 2769.67            |
|                    | Stellenbosch  | Min       | 22.06  | 3.89                | 4.32         | 1.61         | 168        | 45          | 213        | 106.34   | 111.61          | 2574.45            |
|                    |   | Avg       | 23.43  | 3.70                | 4.86         | 2.00         | 148        | 45          | 193        | 120.09   | 115.28          | 1968.31            |
|                    |   | Max       | 25.01  | 3.35                | 5.44         | 1.29         | 86         | 36          | 122        | 141.64   | 126.67          | 1265.77            |
|                    | Swartland   | Min       | 22.42  | 3.79                | 3.84         | 2.00         | 105        | 22          | 127        | 104.10   | 105.87          | 1985.97            |
|                    | F-100 - 100 | Avg       | 23.82  | 3.79                | 4.53         | 2.05         | 135        | 36          | 171        | 122.40   | 119.29          | 1955.48            |

## The effect of acid adjustments on juice: pH

As expected, the acid levels are decreasing during the ripening process, but overall the **malic acid** levels are still quite high.

In the example below, acid adjustments were made according to the malic acid levels:



Take care to make the necessary acid adjustments on your juice!



## Happy harvesting!

Log your samples online: <a href="https://client.vinlab.com/">https://client.vinlab.com/</a>

Regards,

The Vinlab Team