





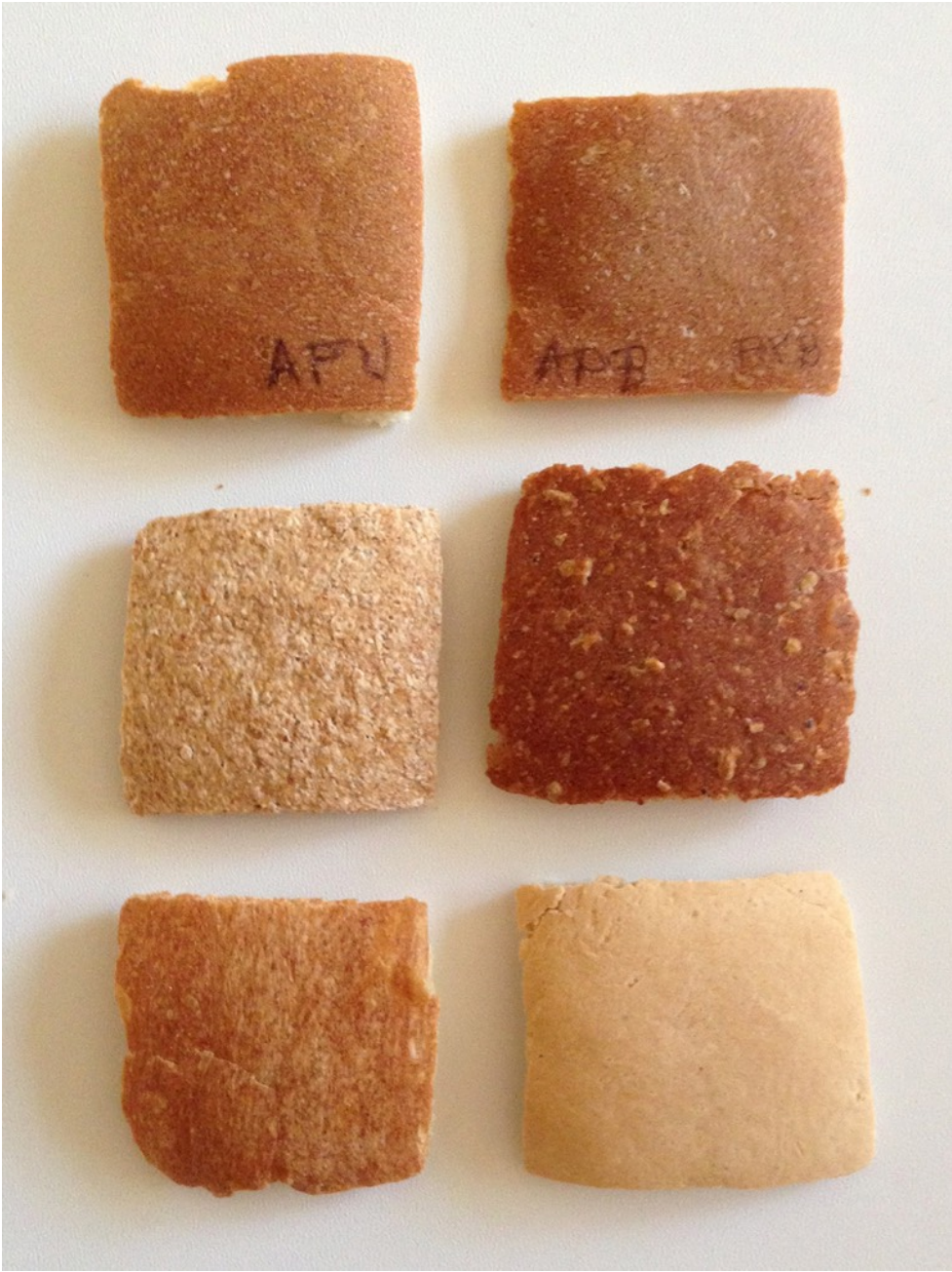


# Appendix B

| Flour Type                | Weight g | Percent | Bleached AP   | Unbleached AP   | Heritage Whole Wheat  | Bread Whole Wheat   | Bread White   | Cake/Pastry   |
|---------------------------|----------|---------|---|---|---|---|---|---|
| Flour Details             | 450      | 100     | Robin Hood Bleached All Purpose   | Robin Hood Unbleached All Purpose   | Upper Canada Village Red Fife Whole Wheat   | Robin Hood Bread Whole Wheat  | Robin Hood Bread White  | Robin Hood Cake/Pastry  |
| Yeast - Instant g gram    | 5        | 1       | 5   | 5   |   |   |   | 5   |
| Yeast - Fresh g           | 15       | 3       |   |   | 15  | 15  | 15  |   |
| Water g                   | 275      | 61      | 275   | 275   | 275   | 275   | 275   | 275   |
| Water Temp °C             | 35       |         | 35  | 35  | 35  | 35  | 35  | 35  |
| Sugar g                   | 30       | 7       | 30  | 30  | 30  | 30  | 30  | 30  |
| Salt g                    | 8        | 2       | 8   | 8   | 8   | 8   | 8   | 8   |
| Date                      |          |         | Oct 17, 2016  | Oct 19, 2016  | Oct 23, 2016  | Oct 24, 2016  | Oct 25, 2016  | Oct 25, 2016  |
| Kitchen Temp °C           |          |         | 21  | 21  | 21  | 21  | 21  | 21  |
| Cover Ferment/Proof       |          |         | Towel/Towel   | Towel/Towel   | Cling/Cling   | Cling/Cling   | Cling/Cling   | Cling/Towel   |
| Ferment, Proof, Bake Pans |          |         | Cookie sheet  | Cake pan  | Bowl, bowl, cake pan  | Bowl, bowl, cake pan  | Bowl, bowl, cake pan  | Bowl, cake pan, cake pan  |
| Kneading Time min         |          |         | 10  | 7   | 10+3  | 10+2  | 10+2  | 7+1   |
| Baking Time min           |          |         | 20+5+5  | 30+5  | 30+5  | 35  | 30  | 30+5  |
| Internal Loaf Temp °C     |          |         | 93.3  | 93  | 92.7  | 96.3  | 95.3  | 88.6  |
| Crust Colour              |          |         | Light brown   | Slightly darker than bleached   | Light gray beige  | Brown. Pieces of bran dot the crust.  | Light Brown. Thin. Lighter than all purpose.  | Off white   |
| Crumb Colour              |          |         | Off white   | Slightly darker than bleached   | Brown   | Darker than both AP but lighter than heritage.  | Same as all purpose unbleached  | Off white   |
| Bread Flavour             |          |         | Store bought like   | Store bought like   | Too dense   | Yummy.  | More chew. Nice holes. Yummy  | Dry. Doughy. Doesn't tear right for bread.  |
| Notes                     |          |         |   | Side burst on lower side. Bottom crust crunchy. Crust not crunchy.                    | Not well risen. Bumpy crust   | Could do with a bit more water for a bit more rise, but very nice. Sifting the flour to remove bran flakes might help rise. Crust wrinkled when loaf cooled. Makes great toast. | Clingy dough. Very soft. Crust wrinkled a small amount when loaf cooled. Not as much as commercial whole wheat. | Fermentation had very little rise. Hard to knead as dough just tore when you tried to stretch it. Little gluten. Large side tears in loaf. Crumb had cake-like characteristics. |
| Bag                       |          |         |  |  |  |    |                            |    |

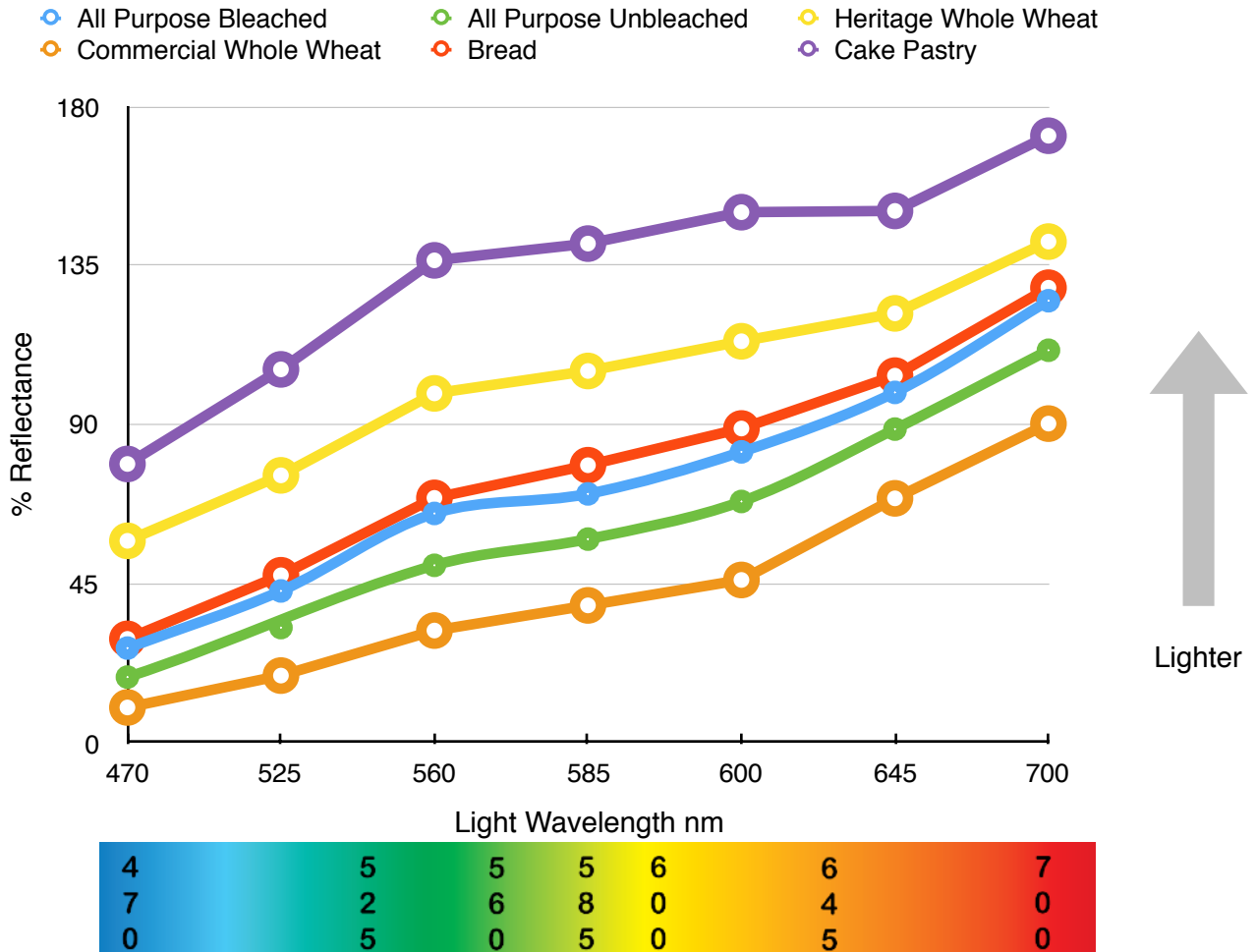
Crusts

|                        |                        |
|------------------------|------------------------|
| All Purpose Unbleached | All Purpose Bleached   |
| Heritage Whole Wheat   | Commercial Whole Grain |
| Bread White            | Cake/Pastry            |



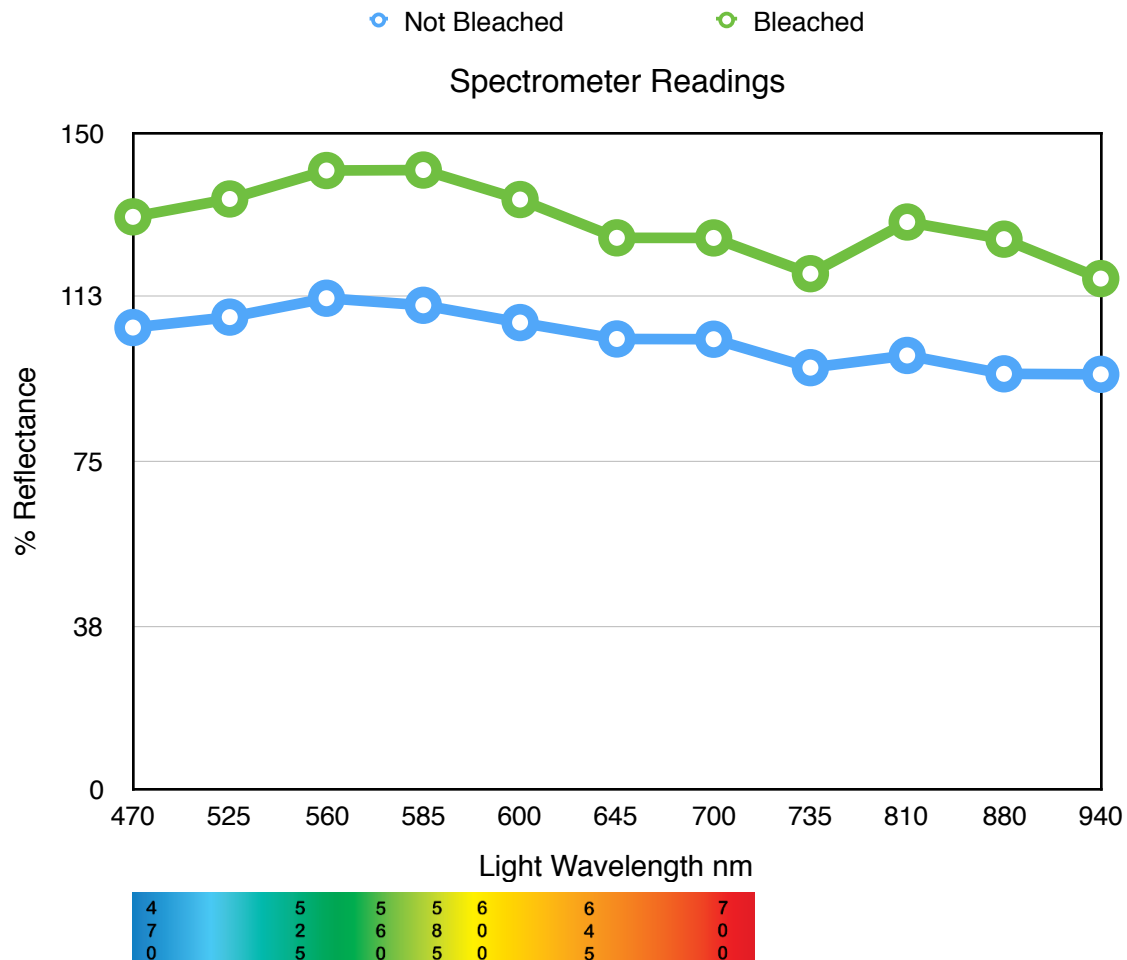
Crust Colour Reflectance

|          | Wavelength (nm) | All Purpose Bleached | All Purpose Unbleached | Heritage Whole Wheat | Commercial Whole Wheat | Bread | Cake Pastry |
|----------|-----------------|----------------------|------------------------|----------------------|------------------------|-------|-------------|
| Blue     | 470             | 27                   | 18                     | 57                   | 10                     | 29    | 79          |
| Cyan     | 525             | 43                   | 32                     | 76                   | 19                     | 47    | 106         |
| Green    | 560             | 65                   | 50                     | 99                   | 32                     | 69    | 136         |
| Yellow   | 585             | 70                   | 58                     | 105                  | 39                     | 78    | 141         |
| Orange   | 600             | 82                   | 68                     | 113                  | 46                     | 89    | 150         |
| Red      | 645             | 99                   | 89                     | 121                  | 69                     | 104   | 150         |
| Deep Red | 700             | 125                  | 111                    | 142                  | 90                     | 129   | 172         |



### Bleached vs Unbleached raw Flour

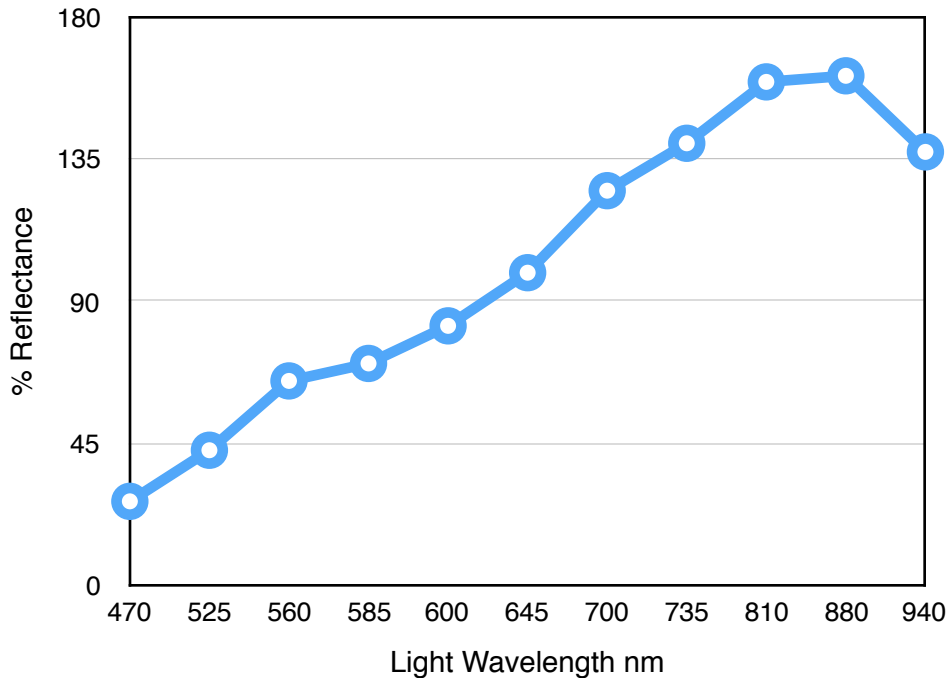
| Dark Voltage (mV) | 29  | White | Not Bleached | Bleached | Not Bleached | Bleached |
|-------------------|-----|-------|--------------|----------|--------------|----------|
| Blue              | 470 | 413   | 434          | 531      | 105          | 131      |
| Cyan              | 525 | 526   | 565          | 699      | 108          | 135      |
| Green             | 560 | 506   | 564          | 703      | 112          | 141      |
| Yellow            | 585 | 541   | 595          | 753      | 111          | 141      |
| Orange            | 600 | 574   | 610          | 763      | 107          | 135      |
| Red               | 645 | 588   | 604          | 733      | 103          | 126      |
| Deep Red          | 700 | 600   | 616          | 748      | 103          | 126      |
| Infrared 1        | 735 | 626   | 604          | 732      | 96           | 118      |
| Infrared 2        | 810 | 584   | 579          | 748      | 99           | 130      |
| Infrared 3        | 880 | 618   | 588          | 769      | 95           | 126      |
| Infrared 4        | 940 | 624   | 593          | 723      | 95           | 117      |



## Spectrometer Reflectance Results

| Flour: All Purpose Bleached |                 |             | Date: Oct 18, 2016 |          |          |         |
|-----------------------------|-----------------|-------------|--------------------|----------|----------|---------|
| Dark Voltage (mV)           | 29              |             | Voltage (mV)       |          |          |         |
| Colour                      | Wavelength (nm) | Reflectance | White Paper        | Sample 1 | Sample 2 | Average |
| Blue                        | 470             | 27          | 413                | 124      | 139      | 131.5   |
| Cyan                        | 525             | 43          | 526                | 235      | 249      | 242     |
| Green                       | 560             | 65          | 506                | 329      | 347      | 338     |
| Yellow                      | 585             | 70          | 541                | 380      | 398      | 389     |
| Orange                      | 600             | 82          | 574                | 465      | 489      | 477     |
| Red                         | 645             | 99          | 588                | 570      | 595      | 582.5   |
| Deep Red                    | 700             | 125         | 600                | 727      | 758      | 742.5   |
| Infrared 1                  | 735             | 140         | 626                | 851      | 878      | 864.5   |
| Infrared 2                  | 810             | 159         | 584                | 883      | 944      | 913.5   |
| Infrared 3                  | 880             | 161         | 618                | 951      | 1007     | 979     |
| Infrared 4                  | 940             | 137         | 624                | 821      | 870      | 845.5   |

### Spectrometer Readings

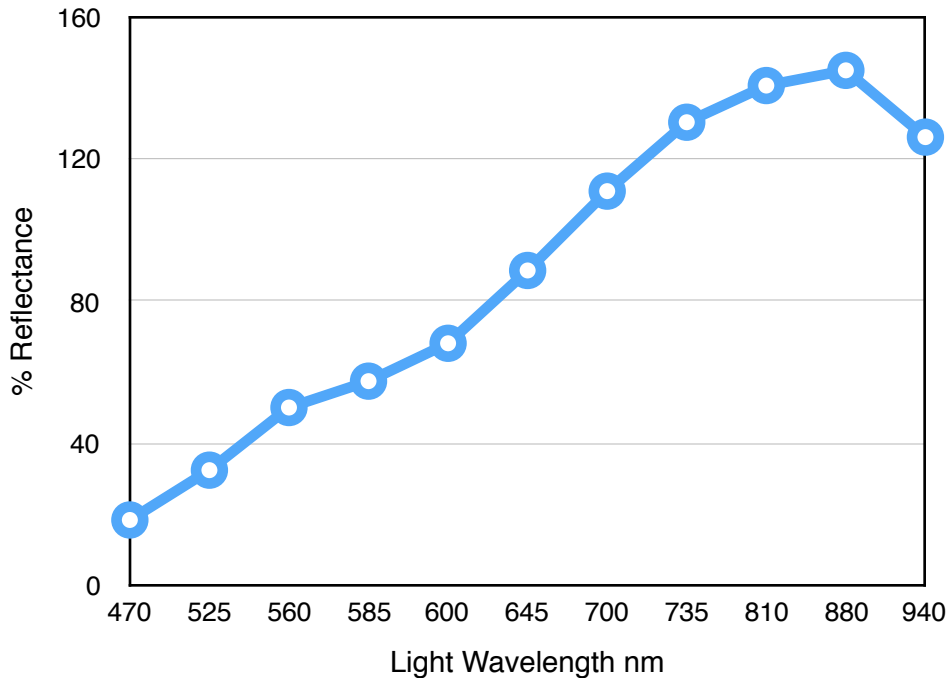


All Purpose Bleached Flour

## Spectrometer Reflectance Results

| Flour: All Purpose Unbleached |                 |             | Date: Oct 19, 2016 |          |          |         |
|-------------------------------|-----------------|-------------|--------------------|----------|----------|---------|
| Dark Voltage (mV)             | 29              |             | Voltage (mV)       |          |          |         |
| Colour                        | Wavelength (nm) | Reflectance | White Paper        | Sample 1 | Sample 2 | Average |
| Blue                          | 470             | 18          | 413                | 102      | 98       | 100     |
| Cyan                          | 525             | 32          | 526                | 192      | 189      | 190.5   |
| Green                         | 560             | 50          | 506                | 271      | 265      | 268     |
| Yellow                        | 585             | 58          | 541                | 326      | 321      | 323.5   |
| Orange                        | 600             | 68          | 574                | 408      | 393      | 400.5   |
| Red                           | 645             | 89          | 588                | 531      | 518      | 524.5   |
| Deep Red                      | 700             | 111         | 600                | 670      | 655      | 662.5   |
| Infrared 1                    | 735             | 130         | 626                | 816      | 798      | 807     |
| Infrared 2                    | 810             | 141         | 584                | 824      | 795      | 809.5   |
| Infrared 3                    | 880             | 145         | 618                | 900      | 865      | 882.5   |
| Infrared 4                    | 940             | 126         | 624                | 789      | 770      | 779.5   |

### Spectrometer Readings

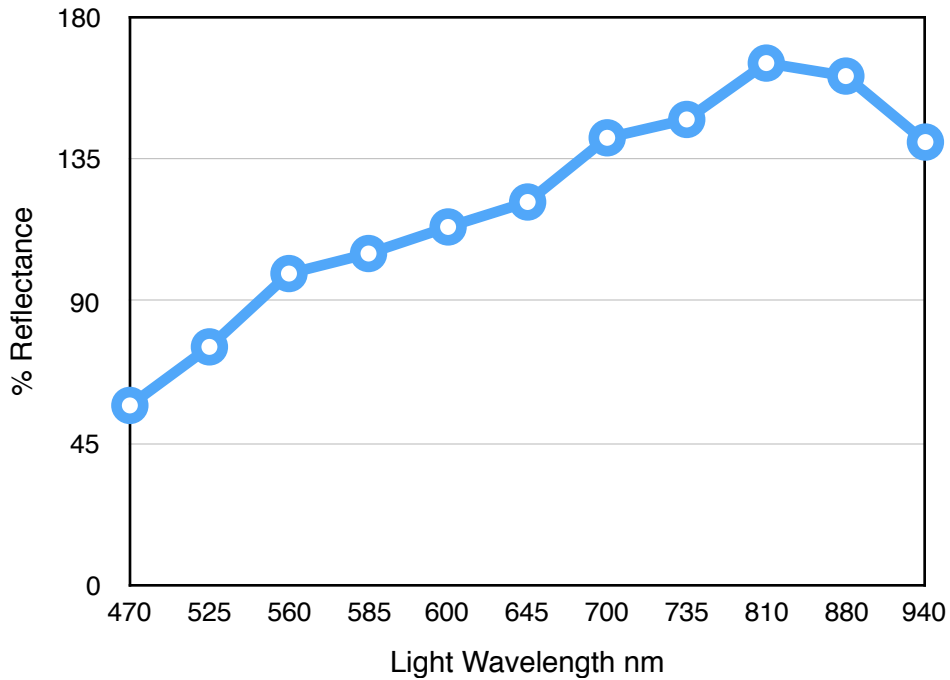


All Purpose Unbleached Flour

## Spectrometer Reflectance Results

| Flour: Heritage Whole Wheat |                 |             | Date: Oct 23, 2016 |          |          |         |
|-----------------------------|-----------------|-------------|--------------------|----------|----------|---------|
| Dark Voltage (mV)           | 29              |             | Voltage (mV)       |          |          |         |
| Colour                      | Wavelength (nm) | Reflectance | White Paper        | Sample 1 | Sample 2 | Average |
| Blue                        | 470             | 57          | 413                | 254      | 242      | 248     |
| Cyan                        | 525             | 76          | 526                | 409      | 400      | 404.5   |
| Green                       | 560             | 99          | 506                | 503      | 497      | 500     |
| Yellow                      | 585             | 105         | 541                | 575      | 559      | 567     |
| Orange                      | 600             | 113         | 574                | 654      | 641      | 647.5   |
| Red                         | 645             | 121         | 588                | 710      | 705      | 707.5   |
| Deep Red                    | 700             | 142         | 600                | 841      | 835      | 838     |
| Infrared 1                  | 735             | 147         | 626                | 911      | 908      | 909.5   |
| Infrared 2                  | 810             | 165         | 584                | 996      | 897      | 946.5   |
| Infrared 3                  | 880             | 161         | 618                | 997      | 960      | 978.5   |
| Infrared 4                  | 940             | 140         | 624                | 876      | 852      | 864     |

### Spectrometer Readings

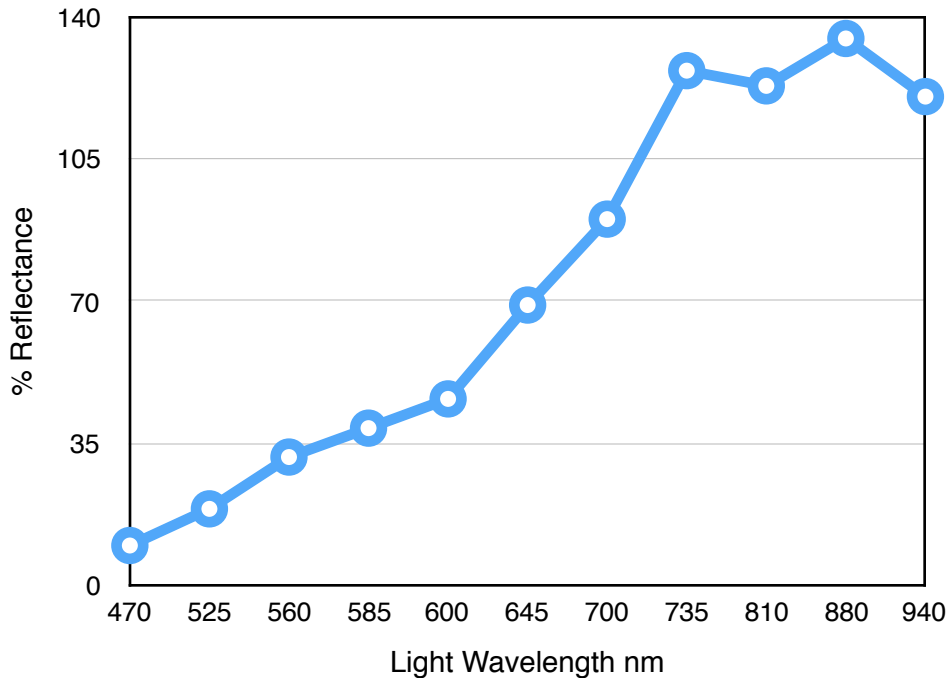


Heritage Whole Wheat Flour

## Spectrometer Reflectance Results

| Flour: Commercial Whole Wheat |                 |             | Date: Oct 24, 2016 |          |          |         |
|-------------------------------|-----------------|-------------|--------------------|----------|----------|---------|
| Dark Voltage (mV)             | 29              |             | Voltage (mV)       |          |          |         |
| Colour                        | Wavelength (nm) | Reflectance | White Paper        | Sample 1 | Sample 2 | Average |
| Blue                          | 470             | 10          | 413                | 70       | 64       | 67      |
| Cyan                          | 525             | 19          | 526                | 125      | 121      | 123     |
| Green                         | 560             | 32          | 506                | 184      | 176      | 180     |
| Yellow                        | 585             | 39          | 541                | 231      | 224      | 227.5   |
| Orange                        | 600             | 46          | 574                | 280      | 279      | 279.5   |
| Red                           | 645             | 69          | 588                | 418      | 412      | 415     |
| Deep Red                      | 700             | 90          | 600                | 546      | 542      | 544     |
| Infrared 1                    | 735             | 127         | 626                | 798      | 773      | 785.5   |
| Infrared 2                    | 810             | 123         | 584                | 722      | 701      | 711.5   |
| Infrared 3                    | 880             | 135         | 618                | 842      | 802      | 822     |
| Infrared 4                    | 940             | 120         | 624                | 757      | 733      | 745     |

### Spectrometer Readings



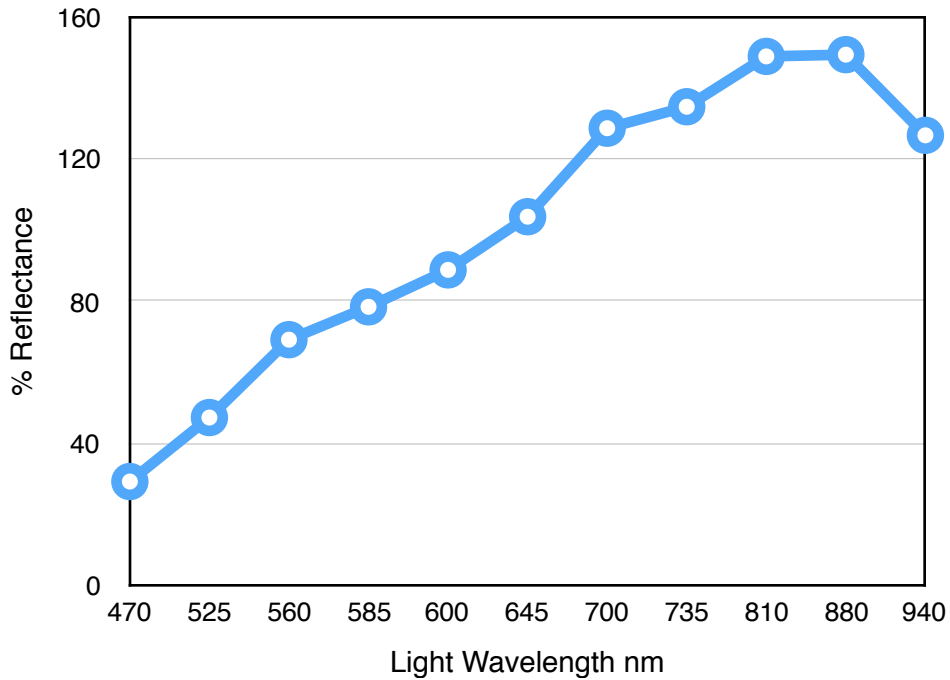
Commercial Whole Wheat Flour



## Spectrometer Reflectance Results

| Flour: Bread Flour |                 | Date: Oct 25, 2016 |              |          |          |         |
|--------------------|-----------------|--------------------|--------------|----------|----------|---------|
| Dark Voltage (mV)  | 29              |                    | Voltage (mV) |          |          |         |
| Colour             | Wavelength (nm) | Reflectance        | White Paper  | Sample 1 | Sample 2 | Average |
| Blue               | 470             | 29                 | 413          | 135      | 148      | 141.5   |
| Cyan               | 525             | 47                 | 526          | 251      | 277      | 264     |
| Green              | 560             | 69                 | 506          | 343      | 375      | 359     |
| Yellow             | 585             | 78                 | 541          | 426      | 435      | 430.5   |
| Orange             | 600             | 89                 | 574          | 518      | 508      | 513     |
| Red                | 645             | 104                | 588          | 624      | 594      | 609     |
| Deep Red           | 700             | 129                | 600          | 774      | 753      | 763.5   |
| Infrared 1         | 735             | 135                | 626          | 846      | 820      | 833     |
| Infrared 2         | 810             | 149                | 584          | 859      | 851      | 855     |
| Infrared 3         | 880             | 149                | 618          | 906      | 911      | 908.5   |
| Infrared 4         | 940             | 127                | 624          | 768      | 797      | 782.5   |

### Spectrometer Readings

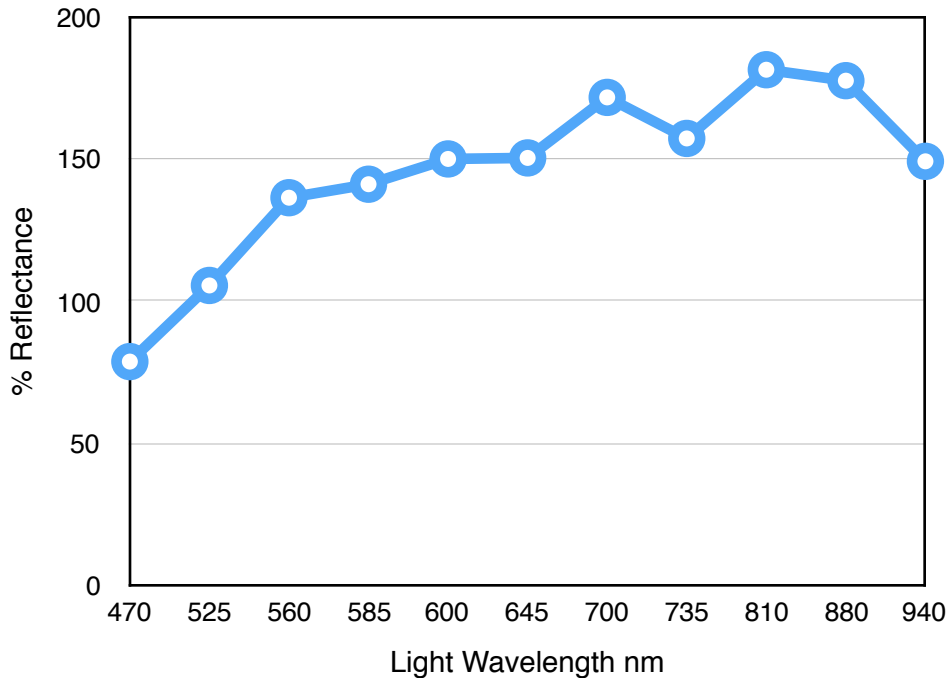


Commercial Whole Wheat Flour

## Spectrometer Reflectance Results

| Flour: <b>Cake Pastry Flour</b> |                 |             | Date: <b>Oct 25, 2016</b> |          |          |         |
|---------------------------------|-----------------|-------------|---------------------------|----------|----------|---------|
| Dark Voltage (mV)               | <b>29</b>       |             | Voltage (mV)              |          |          |         |
| Colour                          | Wavelength (nm) | Reflectance | White Paper               | Sample 1 | Sample 2 | Average |
| Blue                            | 470             | 79          | 413                       | 330      | 333      | 331.5   |
| Cyan                            | 525             | 106         | 526                       | 551      | 556      | 553.5   |
| Green                           | 560             | 136         | 506                       | 682      | 677      | 679.5   |
| Yellow                          | 585             | 141         | 541                       | 756      | 747      | 751.5   |
| Orange                          | 600             | 150         | 574                       | 848      | 845      | 846.5   |
| Red                             | 645             | 150         | 588                       | 870      | 869      | 869.5   |
| Deep Red                        | 700             | 172         | 600                       | 1009     | 1009     | 1009    |
| Infrared 1                      | 735             | 157         | 626                       | 963      | 972      | 967.5   |
| Infrared 2                      | 810             | 181         | 584                       | 1025     | 1046     | 1035.5  |
| Infrared 3                      | 880             | 178         | 618                       | 1066     | 1083     | 1074.5  |
| Infrared 4                      | 940             | 149         | 624                       | 909      | 924      | 916.5   |

### Spectrometer Readings



Commercial Whole Wheat Flour