PCA Report: Day-by-Day Analysis Red Apple

# Explained Variance Percentages

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Day | PC1 | PC2 | PC3 | PC4 | PC5 |
| Day 1 | 89.93% | 7.99% | 1.34% | 0.56% | 0.09% |
| Day 2 | 90.88% | 5.54% | 1.97% | 1.14% | 0.41% |
| Day 3 | 76.54% | 14.55% | 4.93% | 2.39% | 1.37% |
| Day 4 | 92.55% | 3.87% | 1.95% | 1.44% | 0.15% |
| Day 5 | 84.95% | 8.22% | 4.89% | 1.38% | 0.33% |
| Day 6 | 81.62% | 12.92% | 3.74% | 1.13% | 0.32% |

# Top 10 Wavelengths for Each Principal Component

## Day 1:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 416 | 0.0226 |
| 417 | 0.0226 |
| 418 | 0.0226 |
| 419 | 0.0226 |
| 415 | 0.0226 |
| 412 | 0.0226 |
| 411 | 0.0226 |
| 1732 | 0.0226 |
| 1731 | 0.0226 |
| 1729 | 0.0226 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 572 | 0.0451 |
| 571 | 0.0451 |
| 570 | 0.0451 |
| 569 | 0.0450 |
| 573 | 0.0450 |
| 568 | 0.0449 |
| 574 | 0.0449 |
| 575 | 0.0448 |
| 567 | 0.0448 |
| 576 | 0.0447 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 620 | 0.1131 |
| 619 | 0.1129 |
| 618 | 0.1127 |
| 617 | 0.1127 |
| 616 | 0.1126 |
| 621 | 0.1125 |
| 615 | 0.1124 |
| 614 | 0.1123 |
| 613 | 0.1118 |
| 612 | 0.1114 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2507 | 0.1200 |
| 2506 | 0.0945 |
| 2467 | 0.0792 |
| 2468 | 0.0739 |
| 2485 | 0.0709 |
| 2484 | 0.0697 |
| 2473 | 0.0694 |
| 2489 | 0.0686 |
| 2486 | 0.0681 |
| 2469 | 0.0678 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2498 | 0.0966 |
| 2499 | 0.0778 |
| 624 | -0.0710 |
| 623 | -0.0708 |
| 625 | -0.0700 |
| 622 | -0.0695 |
| 621 | -0.0674 |
| 616 | -0.0674 |
| 617 | -0.0674 |
| 619 | -0.0673 |

## Day 2:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1712 | 0.0224 |
| 1708 | 0.0224 |
| 1711 | 0.0224 |
| 1707 | 0.0224 |
| 1709 | 0.0224 |
| 1719 | 0.0224 |
| 1721 | 0.0224 |
| 1710 | 0.0224 |
| 1714 | 0.0224 |
| 1717 | 0.0224 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 581 | 0.0657 |
| 580 | 0.0656 |
| 582 | 0.0656 |
| 579 | 0.0655 |
| 588 | 0.0655 |
| 584 | 0.0655 |
| 583 | 0.0655 |
| 589 | 0.0655 |
| 590 | 0.0655 |
| 587 | 0.0654 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 587 | 0.0748 |
| 588 | 0.0745 |
| 586 | 0.0745 |
| 589 | 0.0743 |
| 590 | 0.0742 |
| 585 | 0.0741 |
| 583 | 0.0739 |
| 582 | 0.0736 |
| 591 | 0.0736 |
| 592 | 0.0734 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 643 | 0.0942 |
| 644 | 0.0941 |
| 645 | 0.0937 |
| 621 | 0.0936 |
| 642 | 0.0935 |
| 646 | 0.0932 |
| 620 | 0.0929 |
| 622 | 0.0927 |
| 641 | 0.0926 |
| 647 | 0.0923 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 429 | 0.0692 |
| 428 | 0.0680 |
| 430 | 0.0677 |
| 407 | 0.0677 |
| 594 | -0.0676 |
| 595 | -0.0675 |
| 592 | -0.0674 |
| 593 | -0.0674 |
| 408 | 0.0672 |
| 596 | -0.0671 |

## Day 3:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1720 | 0.0242 |
| 1718 | 0.0242 |
| 1719 | 0.0242 |
| 1721 | 0.0242 |
| 1711 | 0.0242 |
| 1709 | 0.0242 |
| 1710 | 0.0242 |
| 1716 | 0.0242 |
| 1712 | 0.0242 |
| 1708 | 0.0242 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 598 | 0.0515 |
| 599 | 0.0515 |
| 597 | 0.0515 |
| 600 | 0.0515 |
| 601 | 0.0514 |
| 596 | 0.0514 |
| 602 | 0.0514 |
| 603 | 0.0513 |
| 595 | 0.0513 |
| 604 | 0.0512 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1907 | 0.0571 |
| 1906 | 0.0566 |
| 1908 | 0.0562 |
| 1905 | 0.0561 |
| 1904 | 0.0554 |
| 1909 | 0.0552 |
| 1903 | 0.0546 |
| 1910 | 0.0539 |
| 1902 | 0.0538 |
| 1911 | 0.0522 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 552 | 0.0792 |
| 553 | 0.0791 |
| 557 | 0.0789 |
| 554 | 0.0789 |
| 556 | 0.0788 |
| 551 | 0.0787 |
| 555 | 0.0787 |
| 550 | 0.0786 |
| 549 | 0.0784 |
| 548 | 0.0783 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 607 | 0.0652 |
| 608 | 0.0652 |
| 606 | 0.0652 |
| 605 | 0.0652 |
| 609 | 0.0651 |
| 604 | 0.0650 |
| 610 | 0.0650 |
| 611 | 0.0650 |
| 603 | 0.0649 |
| 612 | 0.0648 |

## Day 4:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1468 | 0.0223 |
| 1466 | 0.0223 |
| 1467 | 0.0223 |
| 1469 | 0.0223 |
| 1465 | 0.0223 |
| 1458 | 0.0223 |
| 1464 | 0.0223 |
| 1470 | 0.0223 |
| 1459 | 0.0223 |
| 1471 | 0.0223 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 653 | 0.0688 |
| 652 | 0.0686 |
| 654 | 0.0682 |
| 651 | 0.0678 |
| 655 | 0.0673 |
| 650 | 0.0670 |
| 656 | 0.0664 |
| 649 | 0.0659 |
| 657 | 0.0656 |
| 658 | 0.0649 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 686 | 0.0666 |
| 685 | 0.0666 |
| 684 | 0.0663 |
| 687 | 0.0663 |
| 683 | 0.0658 |
| 688 | 0.0657 |
| 682 | 0.0651 |
| 689 | 0.0645 |
| 681 | 0.0644 |
| 680 | 0.0639 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 683 | 0.0638 |
| 684 | 0.0637 |
| 682 | 0.0637 |
| 577 | -0.0636 |
| 576 | -0.0635 |
| 578 | -0.0635 |
| 685 | 0.0635 |
| 574 | -0.0635 |
| 575 | -0.0635 |
| 579 | -0.0634 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 348 | 0.0908 |
| 349 | 0.0881 |
| 347 | 0.0878 |
| 357 | 0.0850 |
| 346 | 0.0847 |
| 350 | 0.0725 |
| 356 | 0.0716 |
| 353 | 0.0702 |
| 354 | 0.0695 |
| 355 | 0.0685 |

## Day 5:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1162 | 0.0230 |
| 1161 | 0.0230 |
| 1163 | 0.0230 |
| 1160 | 0.0230 |
| 1159 | 0.0230 |
| 1164 | 0.0230 |
| 1165 | 0.0230 |
| 1166 | 0.0230 |
| 1168 | 0.0230 |
| 1158 | 0.0230 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1905 | 0.0538 |
| 1906 | 0.0538 |
| 1907 | 0.0536 |
| 1904 | 0.0535 |
| 1908 | 0.0535 |
| 1909 | 0.0533 |
| 1910 | 0.0532 |
| 1911 | 0.0530 |
| 1912 | 0.0529 |
| 1903 | 0.0527 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 583 | 0.0757 |
| 582 | 0.0757 |
| 584 | 0.0757 |
| 585 | 0.0757 |
| 581 | 0.0757 |
| 586 | 0.0756 |
| 580 | 0.0756 |
| 587 | 0.0756 |
| 579 | 0.0755 |
| 588 | 0.0755 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 677 | 0.0507 |
| 678 | 0.0507 |
| 679 | 0.0504 |
| 676 | 0.0504 |
| 675 | 0.0502 |
| 680 | 0.0500 |
| 674 | 0.0499 |
| 673 | 0.0494 |
| 407 | 0.0493 |
| 406 | 0.0491 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2507 | 0.0709 |
| 2506 | 0.0705 |
| 982 | 0.0694 |
| 2505 | 0.0683 |
| 983 | 0.0676 |
| 984 | 0.0658 |
| 985 | 0.0641 |
| 1073 | 0.0618 |
| 1072 | 0.0618 |
| 1075 | 0.0618 |

## Day 6:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 545 | 0.0237 |
| 547 | 0.0237 |
| 548 | 0.0237 |
| 544 | 0.0237 |
| 546 | 0.0237 |
| 549 | 0.0237 |
| 550 | 0.0237 |
| 551 | 0.0237 |
| 543 | 0.0237 |
| 552 | 0.0237 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 979 | 0.0419 |
| 978 | 0.0416 |
| 977 | 0.0416 |
| 976 | 0.0416 |
| 974 | 0.0414 |
| 975 | 0.0413 |
| 973 | 0.0413 |
| 971 | 0.0412 |
| 972 | 0.0412 |
| 969 | 0.0412 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 653 | 0.0555 |
| 654 | 0.0543 |
| 774 | 0.0526 |
| 772 | 0.0525 |
| 773 | 0.0525 |
| 771 | 0.0525 |
| 782 | 0.0525 |
| 775 | 0.0524 |
| 770 | 0.0524 |
| 652 | 0.0524 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2507 | 0.0634 |
| 2483 | 0.0520 |
| 2506 | 0.0510 |
| 2482 | 0.0468 |
| 632 | -0.0456 |
| 631 | -0.0450 |
| 633 | -0.0445 |
| 630 | -0.0437 |
| 634 | -0.0427 |
| 2465 | 0.0419 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 629 | 0.0840 |
| 628 | 0.0830 |
| 630 | 0.0826 |
| 627 | 0.0802 |
| 631 | 0.0782 |
| 626 | 0.0760 |
| 2415 | 0.0723 |
| 625 | 0.0711 |
| 632 | 0.0709 |
| 970 | -0.0663 |