We will start this week talking about Project 1.  Most of you have submitted your data.  For those who have not, you need to do so soon [this assignment is very late]

I have attached my report on my cheese data that I had shared earlier. [The data is in the report but I don't want you to do the same]

Note that the data is summarized in an attempt to inform you about the differences in cheese, good and bad [NOT THE TOP 50 CHEESES] and how chemistry may affect the notion of a good cheese.

You do not need to use box plots.  That's what I did.  You can use bar charts, histograms, pie charts as appropriate for your data.  Do NOT use stem-leaf or dot plots

Key words is summary!  I don't want 50 bars on a bar chart or histogram.  This is not about regurgitating the individual data points but to provide an understanding of what the data may show.  What questions it may answer.  Yes, maybe you see an individual outlier, the best of the best [or the worst of the worst], but other than that, is the groupings that are important.

Analysis of Cheese

People’s preference for cheese varies widely. Cheese may be hard or soft, mild or sharp, sources from cows or goats (or other mammals). Can one’s perception on the taste of cheese relate to the chemistry of the cheeses? In this study, samplers rated each cheese on a scale of 0 to 60. At the same time, the level of lactic acid, acetic acid was measured and the level of hydrogen sulfide was group as high or low.

In Table 1, the average taste rating is given along with the chemical analysis. [Normally you don’t include the raw data].

To compare levels of lactic and acetic acid in the cheese, subjects were divided into 4 roughly equal groups. The low group rate the cheese from 0 to 13, the second group had ratings from 13 to 20, the third group had ratings from 20 to 35, and the high group had ratings from 35 to 60. There was a wide overlap in these rating which suggests some variation based on personal preference.

Chart 1 shows the acetic acid by group. In Group 1 (Lowest rating group), there was a wide range of acetic acid levels with a median level of 5.3. In groups 2 through 4, there was a narrower range of levels with median levels that increase as the taste rating increased. The data suggests that higher acetic acid level would lead to higher taste ratings; however, other factors appear to influence a lower rating for the cheese.

Chart 2 shows a clear relationship between lactic acid and taste ratings. As the level of lactic acid increases, the general trend was a higher taste rating. Again, the ratings also overlap by a moderate degree.

Finally, in Chart 3, the taste rating were group by the high and low levels of H2S (hydrogen sulfide). Cheeses with higher H2S level generally had higher taste ratings compared with the low H2S group.

While there appears to be a broad range of taste rating, better tasting cheese have higher levels of acetic acid, lactic acid, and hydrogen sulfide.

TABLE !: Sampler Rating and Chemical Analysis of Cheese

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Taste | Acetic | H2S | Lactic |
| 1 | 12.30 | 4.543 | Low | 0.86 |
| 2 | 20.90 | 5.159 | Low | 1.53 |
| 3 | 39.00 | 5.366 | Low | 1.57 |
| 4 | 47.90 | 5.759 | High | 1.81 |
| 5 | 5.60 | 4.663 | Low | 0.99 |
| 6 | 25.90 | 5.697 | High | 1.09 |
| 7 | 37.30 | 5.892 | High | 1.29 |
| 8 | 21.90 | 6.078 | High | 1.78 |
| 9 | 18.10 | 4.898 | Low | 1.29 |
| 10 | 21.00 | 5.242 | Low | 1.58 |
| 11 | 34.90 | 5.74 | High | 1.68 |
| 12 | 57.20 | 6.446 | High | 1.9 |
| 13 | 0.70 | 4.477 | Low | 1.06 |
| 14 | 25.90 | 5.236 | Low | 1.3 |
| 15 | 54.90 | 6.151 | High | 1.52 |
| 16 | 40.90 | 6.365 | High | 1.74 |
| 17 | 15.90 | 4.787 | Low | 1.16 |
| 18 | 6.40 | 5.412 | Low | 1.49 |
| 19 | 18.00 | 5.247 | High | 1.63 |
| 20 | 38.90 | 5.438 | High | 1.99 |
| 21 | 14.00 | 4.564 | Low | 1.15 |
| 22 | 15.20 | 5.298 | Low | 1.33 |
| 23 | 32.00 | 5.455 | High | 1.44 |
| 24 | 56.70 | 5.855 | High | 2.01 |
| 25 | 16.80 | 5.366 | Low | 1.31 |
| 26 | 11.60 | 6.043 | Low | 1.46 |
| 27 | 26.50 | 6.458 | High | 1.72 |
| 28 | 0.70 | 5.328 | Low | 1.25 |
| 29 | 13.40 | 5.802 | High | 1.08 |
| 30 | 5.50 | 6.176 | Low | 1.25 |

CHART 1: Acetic Acid Levels by Taste Group

CHART 2: Lactic Acid by Taste Group

CHART 3: Taste Ratings by H2S Levels