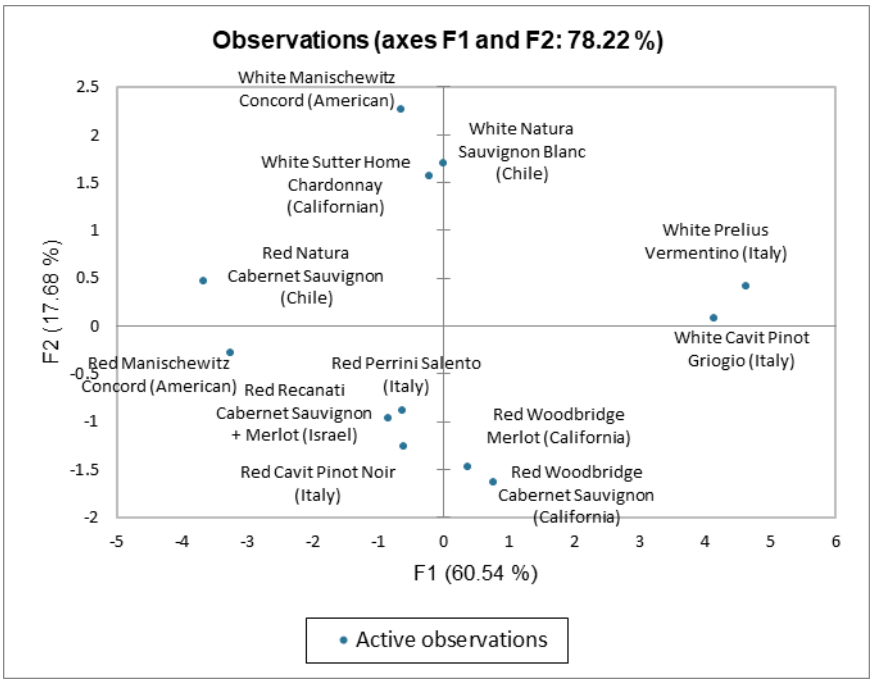
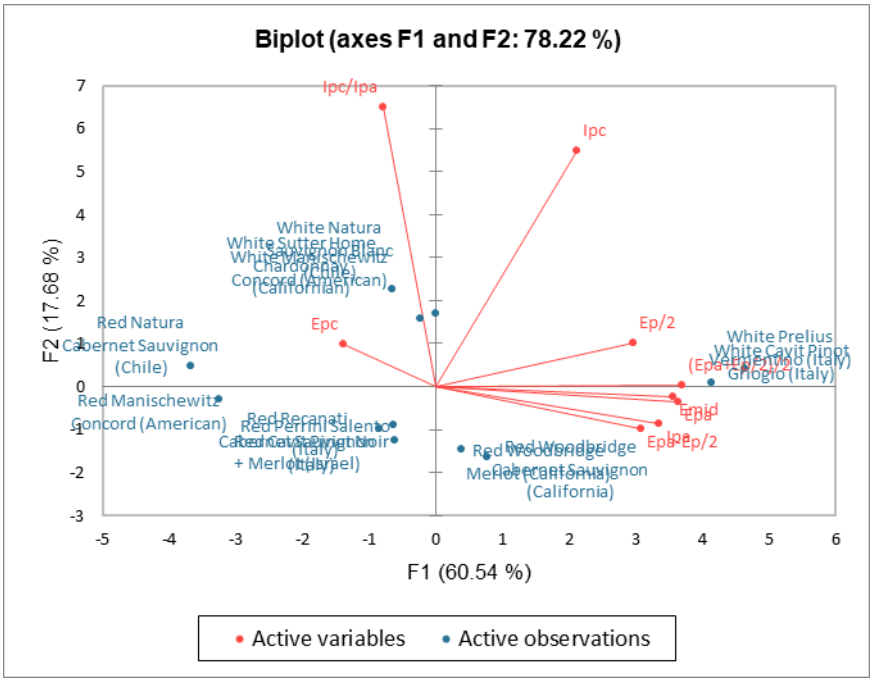
Reagent Name	Reqd. PPE	Critical Safety Hazards	Reactivity	Disposal
Potassium Ferricyanide	Standard	None	None	Hazardous Waste
Potassium Nitrate	Standard	None	None	Hazardous Waste
Ethanol	Standard	Flammable	None	Hazardous Waste
Tartaric Acid	Standard	None	None	Hazardous Waste
Sodium Hydroxide	Standard	Strong base	Acids	Sink once neutralized
Hydrochloric acid	Standard	Strong acid	Bases	Sink once neutralized

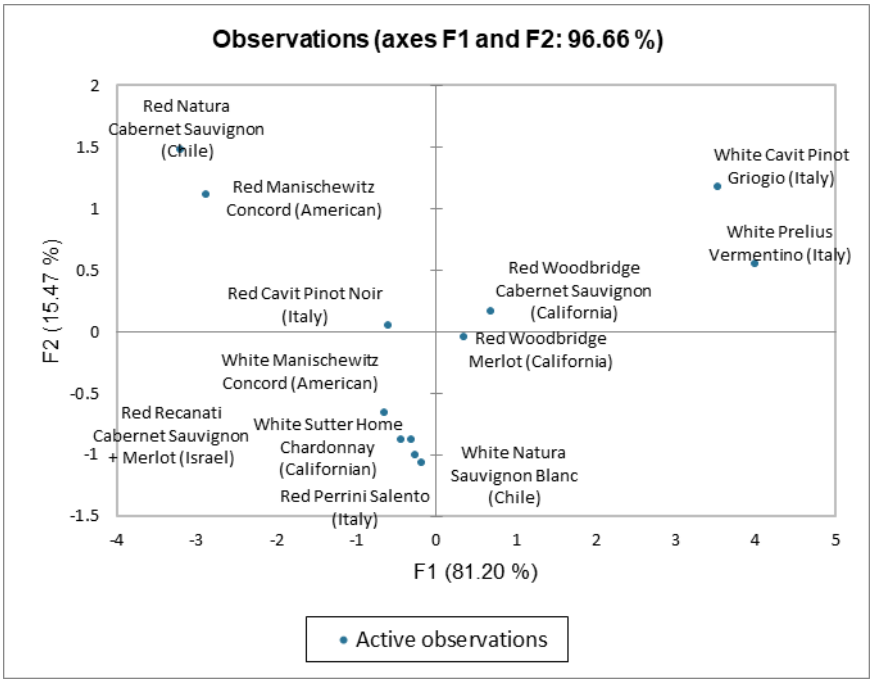
1.



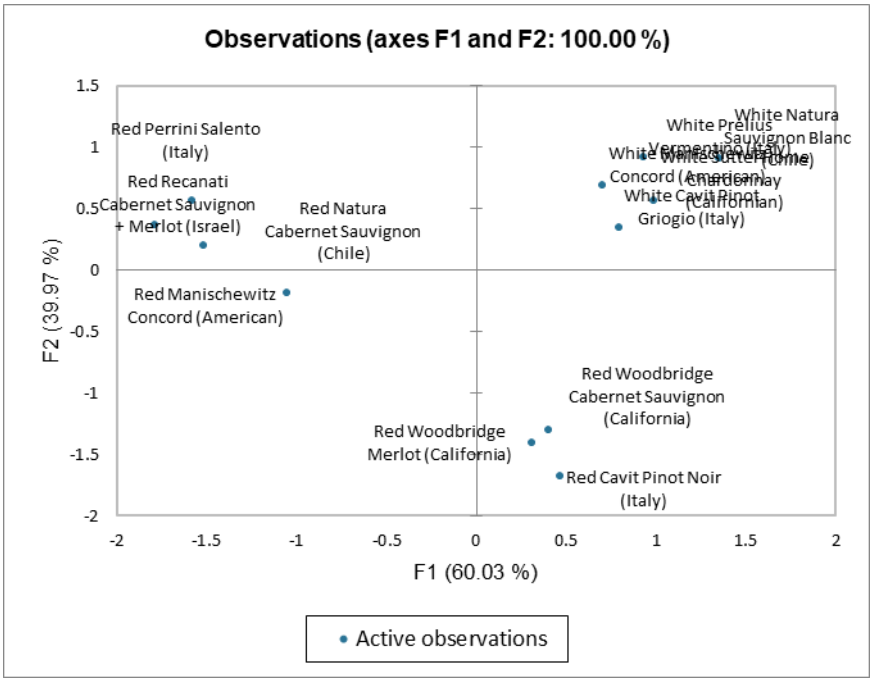


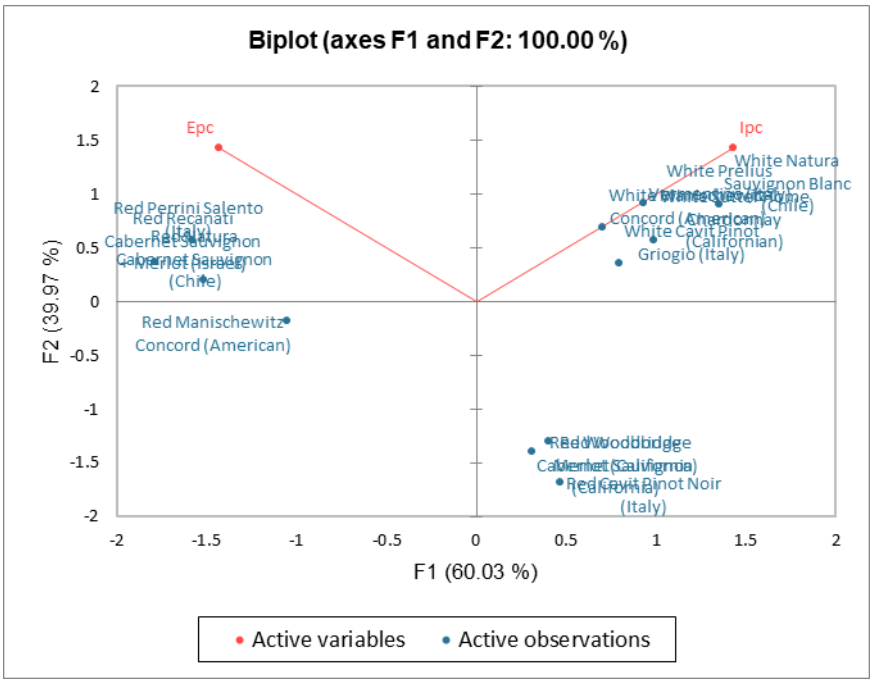
There is not any apparent clustering based on countries and the dataset is too small to make conclusions about outliers, but there is a division between red and white wines on the basis of I_{pc}, with higher values corresponding to white wines and lower values corresponding to red wines.

2. Oxidation

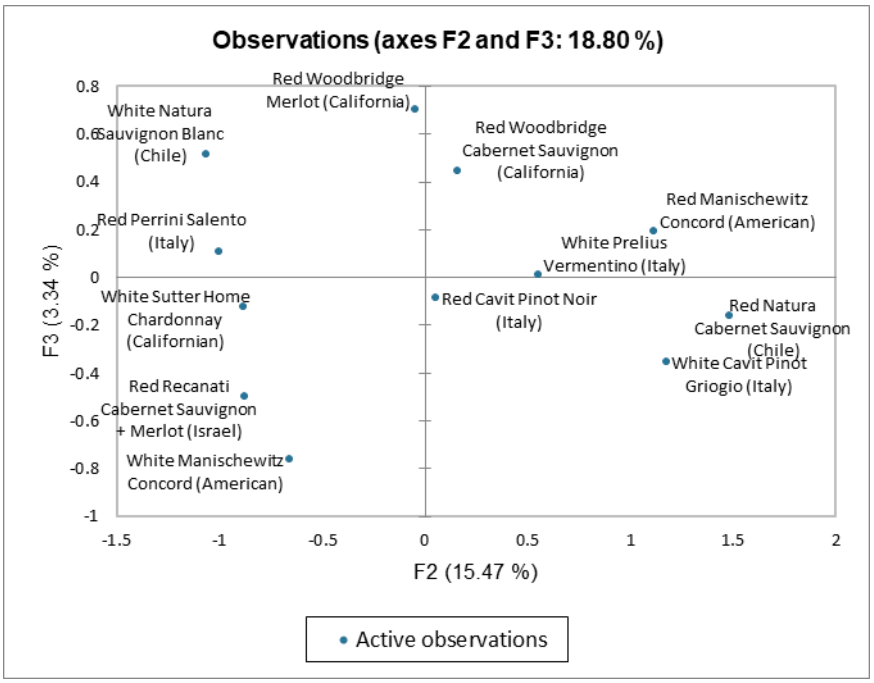


Reduction

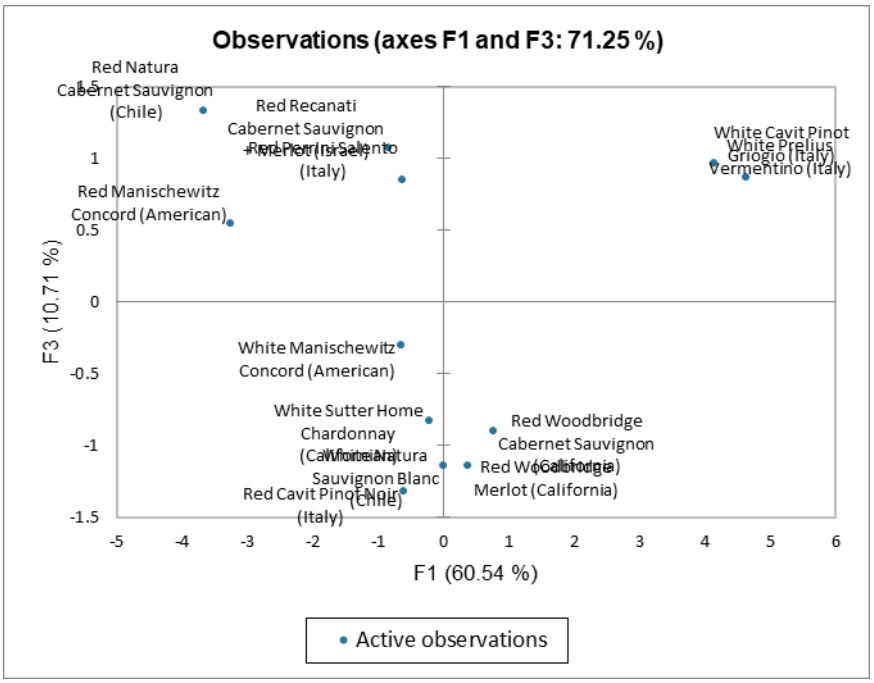


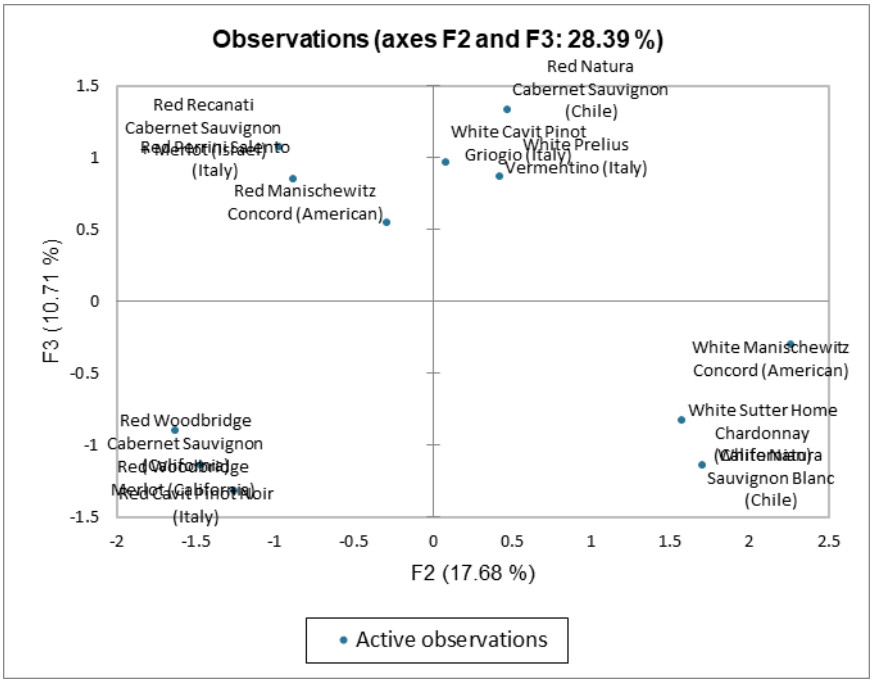


There is not any apparent pattern from the oxidation dataset which shows numerous wines from different continents and different colors clustered together, but the reduction dataset shows the same pattern of I_{pc} determining white/red.

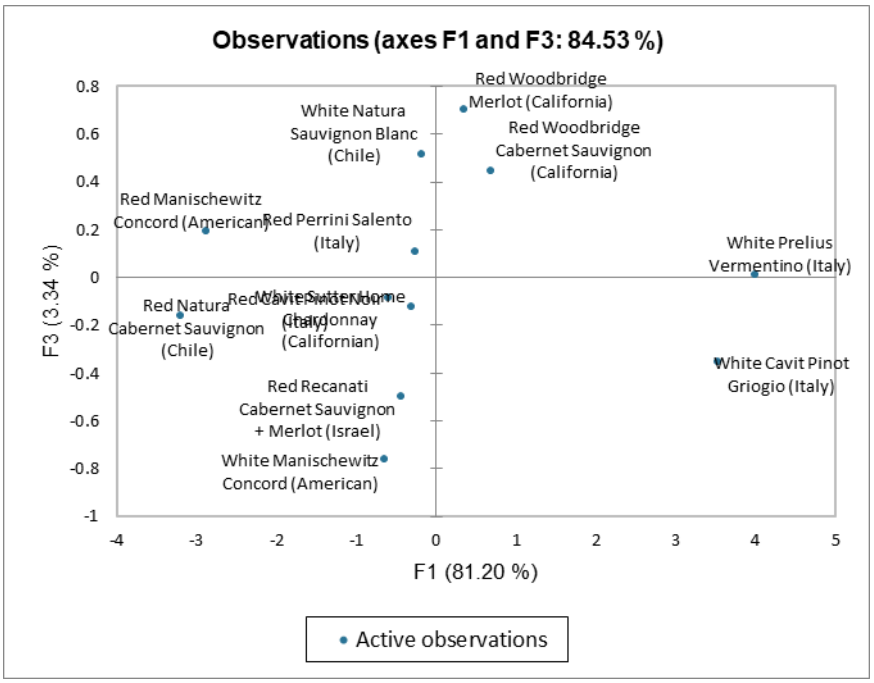


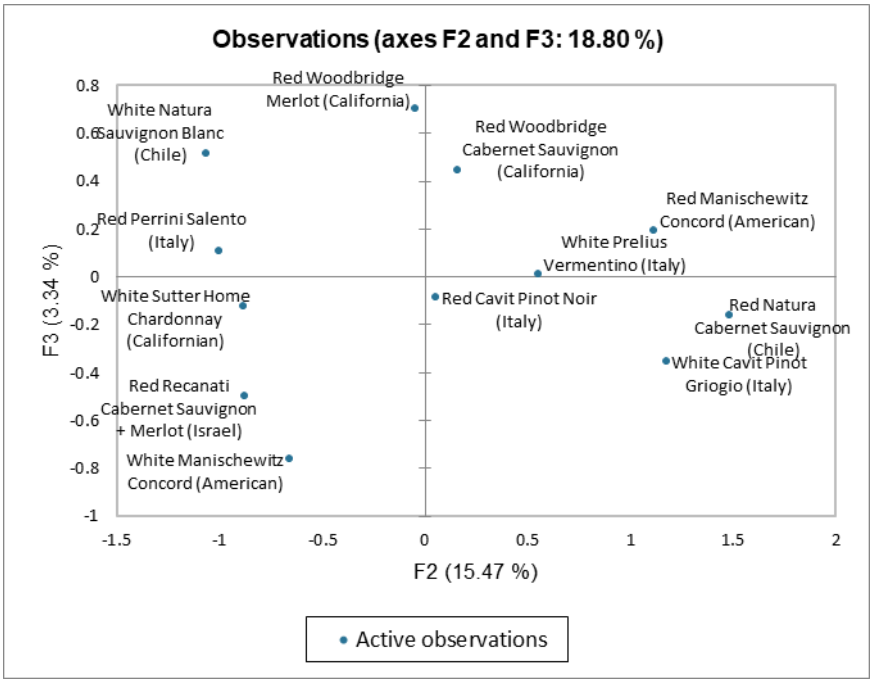
3. No. All show clustering without regards to country or color. Overall:


Observations (axes F1 and F3: 71.25 %)
Red Natura
Cabernet Sauvignon
(Chile)
Red Recanati
Cabernet Sauvignon
Merlot (Israel)
(Italy)
White Cavit Pinot
White Prelius
Griogio (Italy)
Vermentino (Italy)
Red Manischewitz
Concord (American)
White Manischewitz
Concord (American)
White Sutter Home
Chardonnay
Red Woodbridge
Cabernet Sauvignon
Sauvignon Blanc
Merlot (California)
Red Cavit Pinot Noir
(Italy)
F3 (10.71 %)
F1 (60.54 %)
Active observations


Observations (axes F2 and F3: 28.39 %)
Red Natura
Cabernet Sauvignon
(Chile)
Red Recanati
Cabernet Sauvignon
White Cavit Pinot
White Prelius
Griogio (Italy)
Vermentino (Italy)
(Italy)
Red Manischewitz
Concord (American)
White Manischewitz
Concord (American)
White Sutter Home
Chardonnay
Red Woodbridge
Cabernet Sauvignon
Sauvignon Blanc
(Chile)
Red Cavit Pinot Noir
(Italy)
F3 (10.71 %)
F2 (17.68 %)
Active observations

Oxidation:





Reduction has only two original features, so it is impossible to derive a third principal component.