

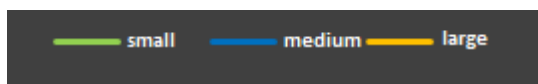
Apply TS-formula and evaluate to Wine Dataset with 50 lines for designing and the rest for validation

3 Families of wine with each having 13 attributes. Membership functions are small, medium and large for each of 13 attributes

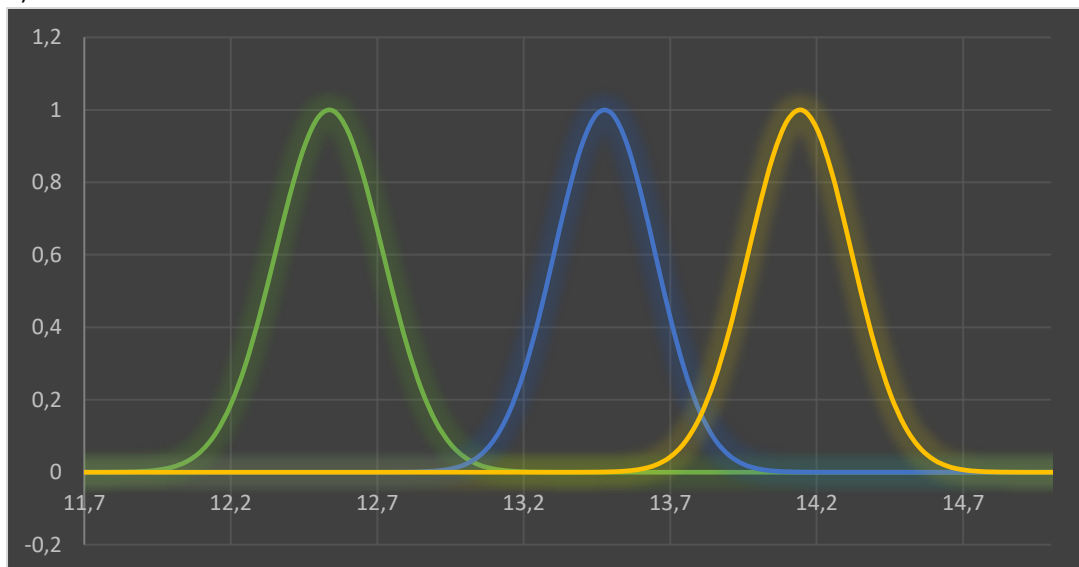
Number of Attributes: 13

- 1) Alcohol
- 2) Malic acid
- 3) Ash
- 4) Alcalinity of ash
- 5) Magnesium
- 6) Total phenols
- 7) Flavanoids
- 8) Nonflavanoid phenols
- 9) Proanthocyanins
- 10) Color intensity
- 11) Hue
- 12) OD280/OD315 of diluted wines
- 13) Proline

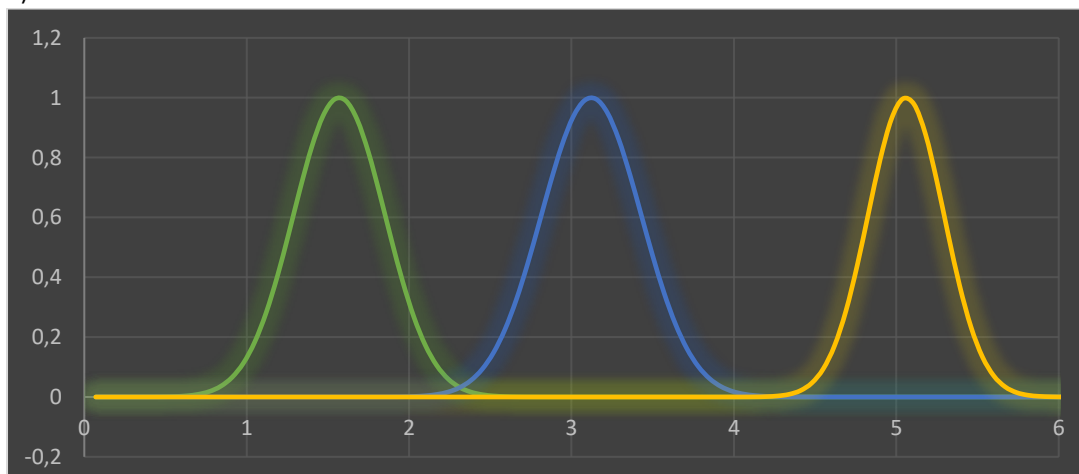
The Gaussian membership functions of small, medium, and large:



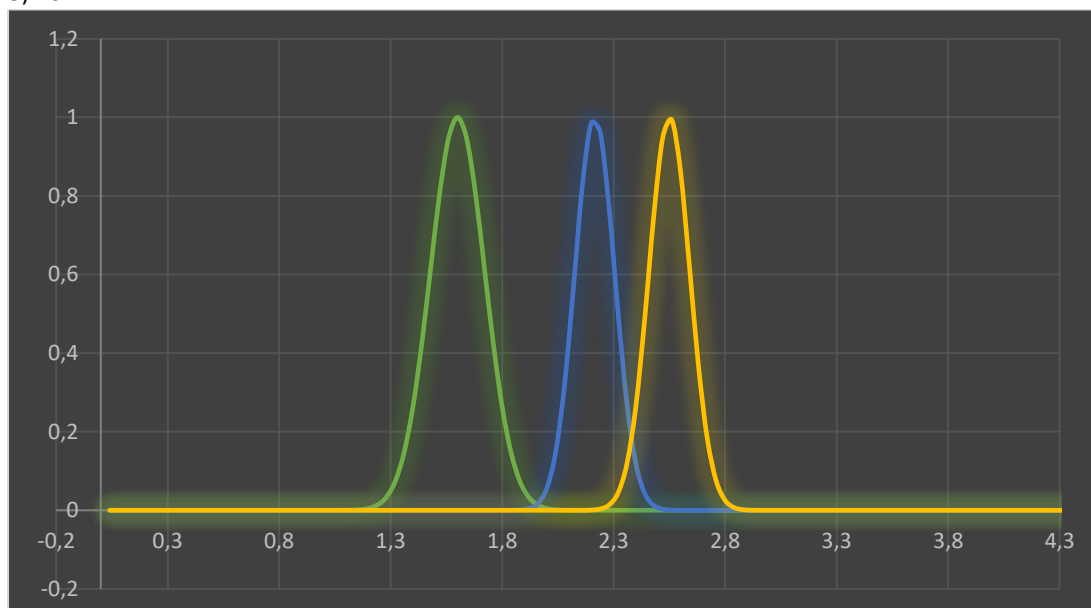
1) Alcohol



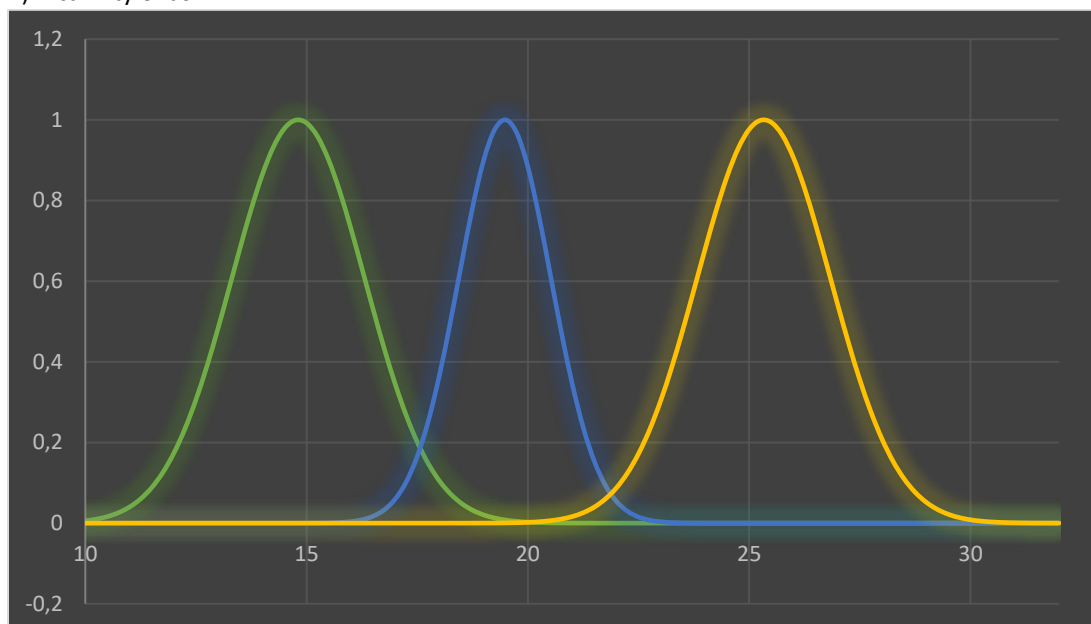
2) Malic acid



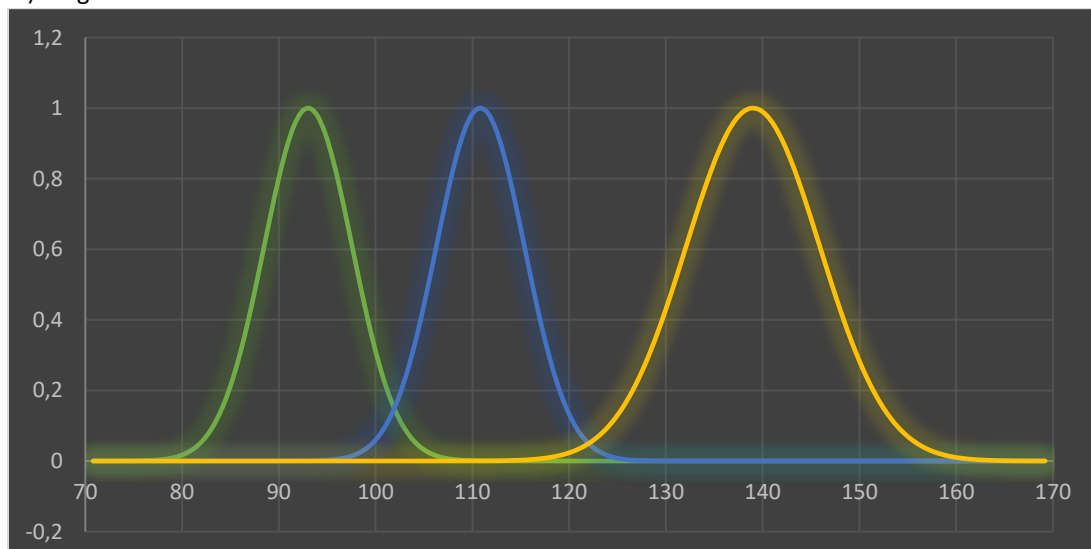
3) Ash



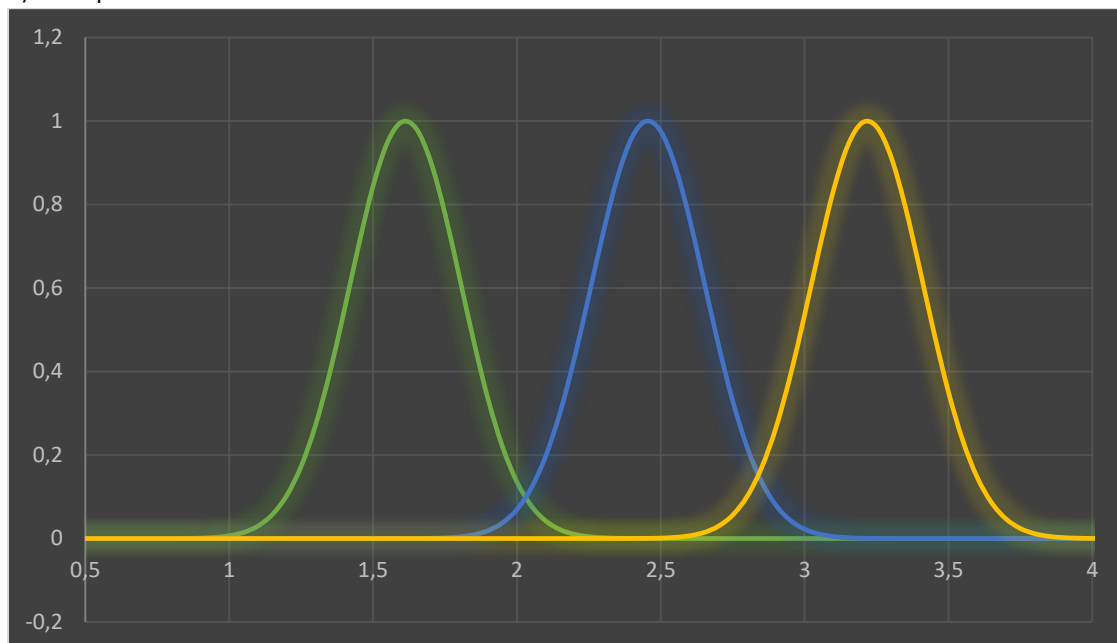
4) Alkalinity of ash



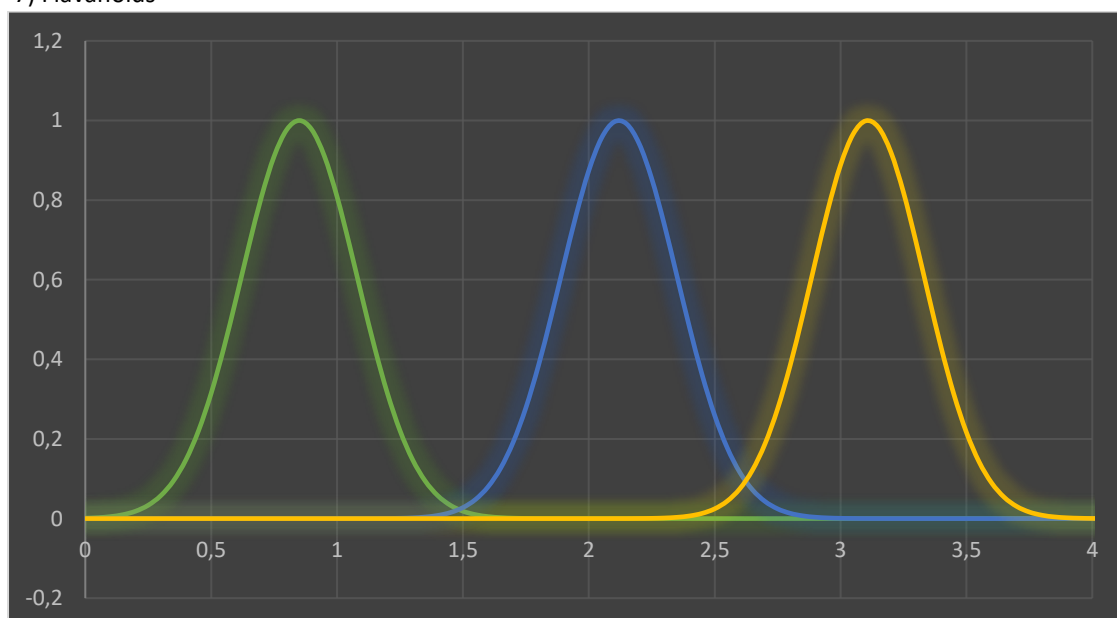
5) Magnesium



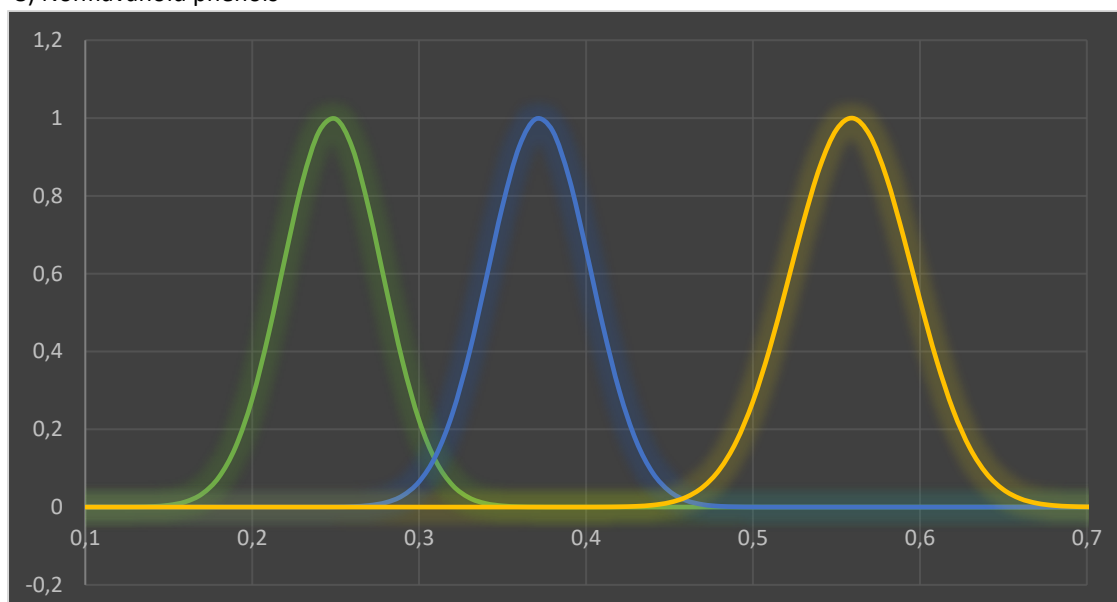
6) Total phenols



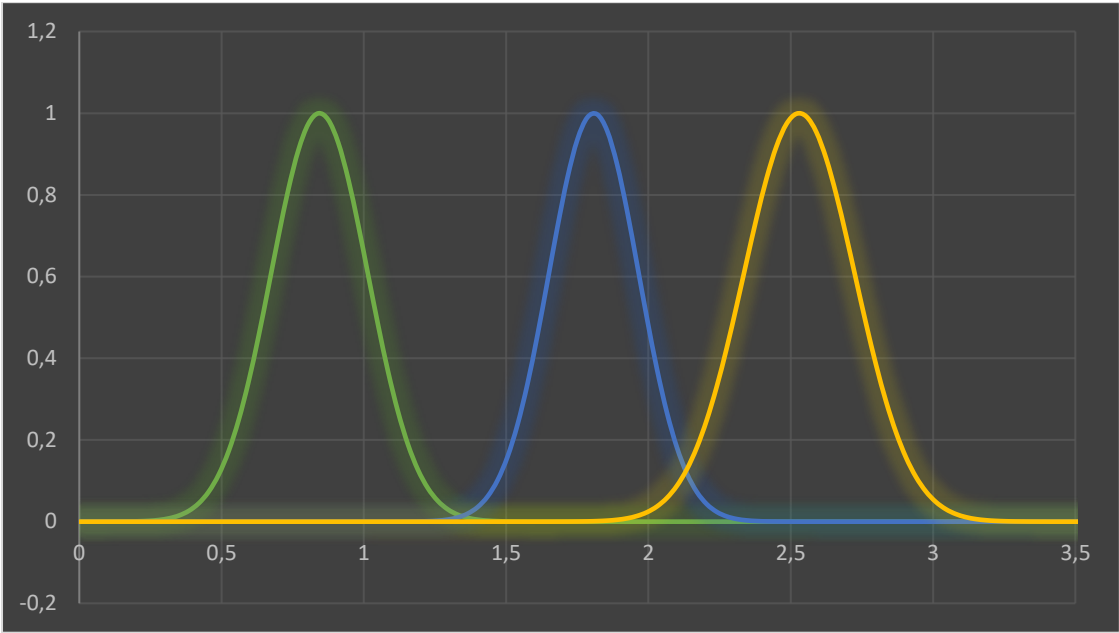
7) Flavanoids



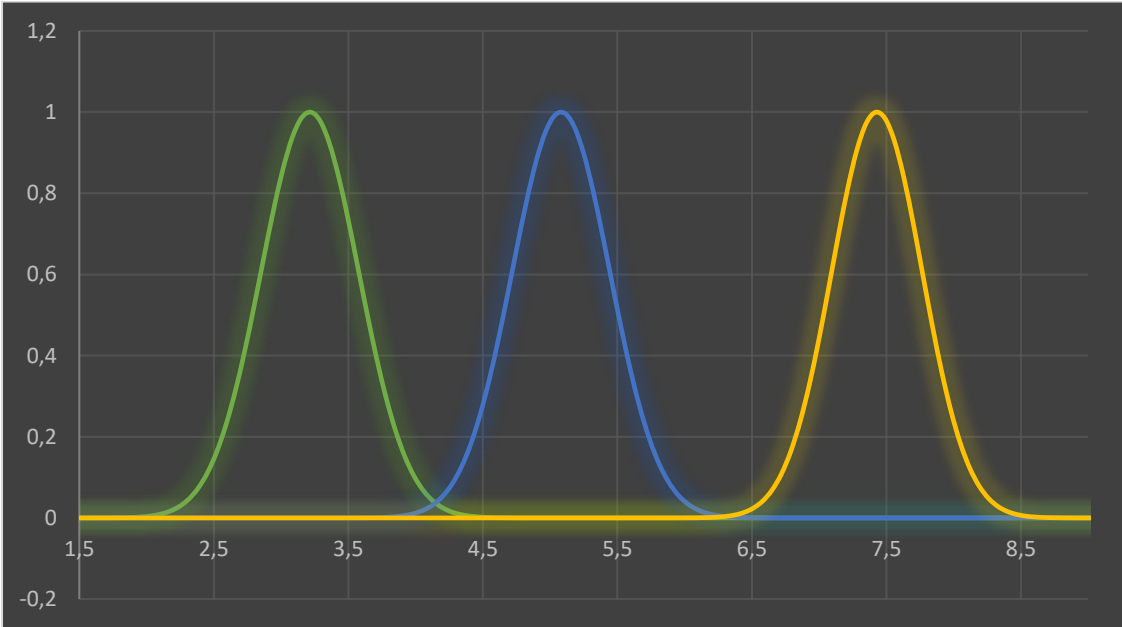
8) Nonflavanoid phenols



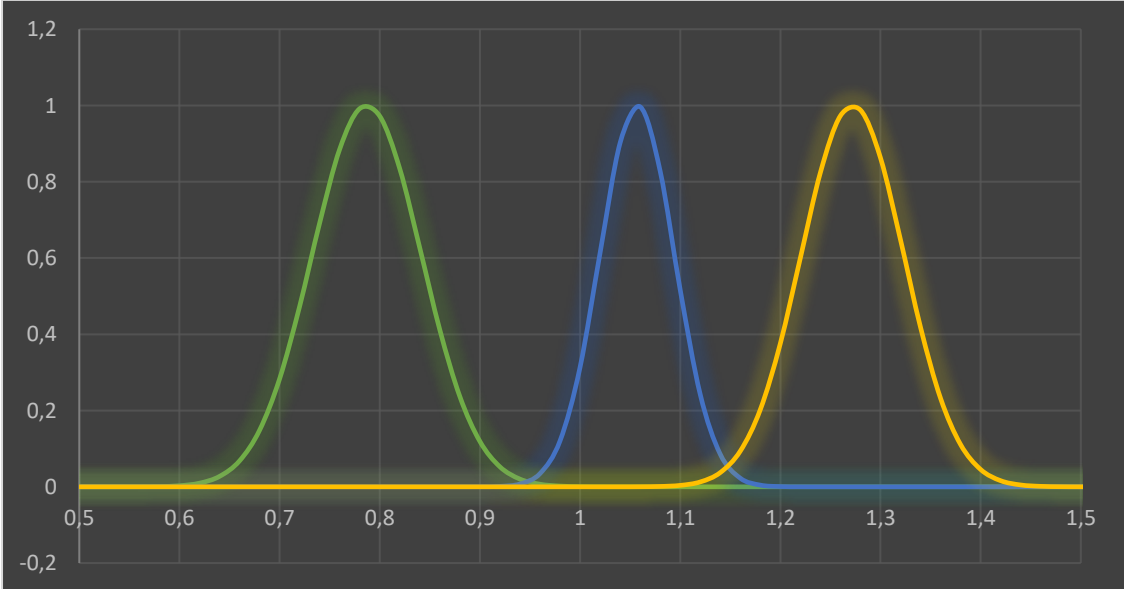
9) Proanthocyanins



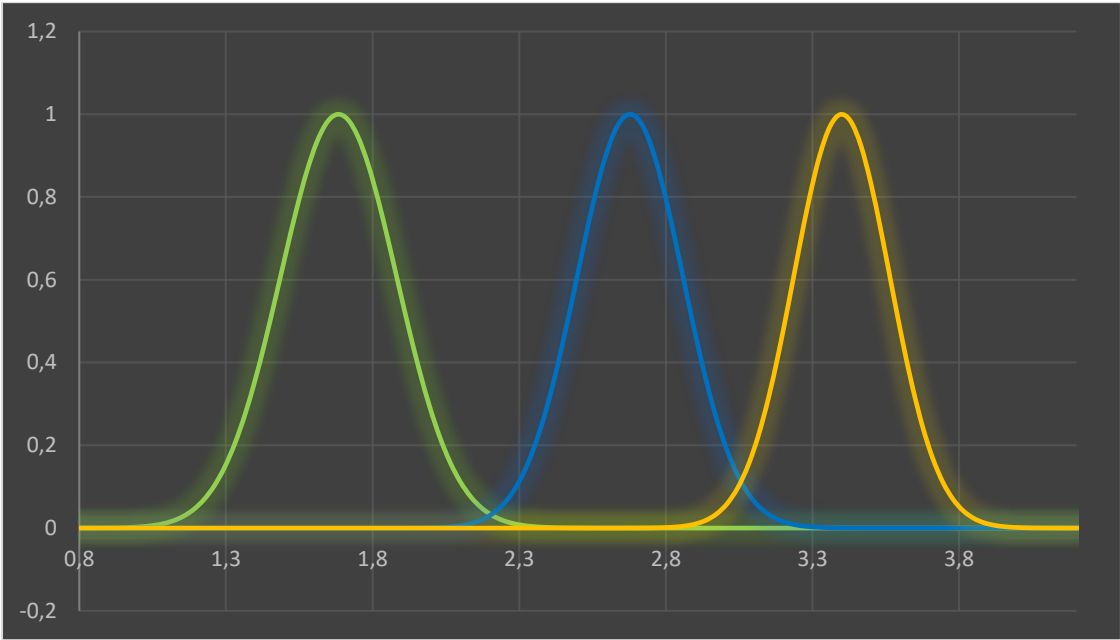
10)Color intensity



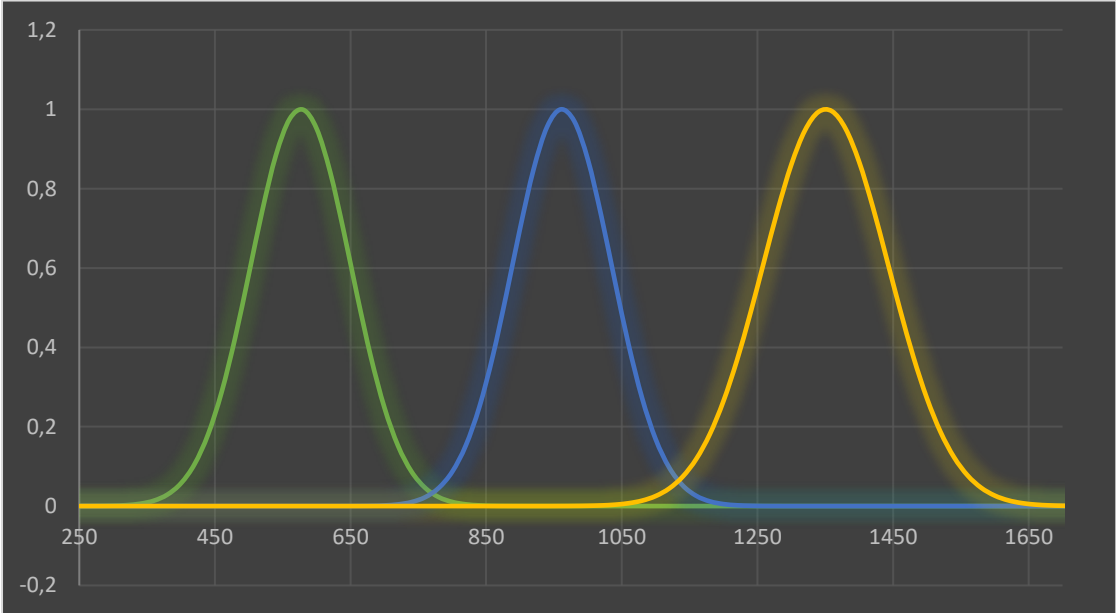
11)Hue



12)OD280/OD315 of diluted wines



13)Proline



My 3 rules for each family:

	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12	x13
Class 1	large	small	medium	small	medium	medium	medium	small	medium	medium	medium	large	large
Class 2	small	small	medium	medium	small	medium	medium	medium	small	small	large	medium	small
Class 3	small	medium	large	large	small	small	small	medium	small	medium	small	small	small
other	medium	large	small	medium	large	large	large	large	large	large	medium	medium	medium

Checking own rules , success rate

№.	Class A (1)		Class B (2)		Class C (3)	
	A or B or C or other		A or B or C or other		A or B or C or other	
№1	A		B		C	good
№2	A		B		C	good
№3	A		B		C	good
№4	A		B		C	good
№5	A		B		C	good
№6	A		B		C	good
№7	A		B		C	good
№8	A		B		C	good
№9	B		B		C	not good
№10	A		C		C	not good
№11	B		B		C	not good
№12	A		B		C	good
№13	A		B		C	good
№14	A		B		C	good
№15	A		B		C	good
№16	A		B		C	good
№17	A		B		C	good
№18	A		B		C	good
№19	A		B		C	good
№20	A		B		C	good
№21	A		B		C	good
№22	A		A		C	not good
№23	B		C		C	not good
№24	B		B		C	not good
№25	A		B		C	good
№26	A		B		C	good
№27	A		B		C	good
№28	A		B		C	good
№29	B		B		C	not good
№30	A		B		C	good
№31	A		B		C	good
№32	A		B		C	good
№33	A		B		C	good
№34	A		C			
№35	A		B			
№36	A		B			
№37	A		B			
№38	A		B			
№39	A		B			
№40	A		B			
№41	A		B			
№42	A		B			
№43	A		B			
№44	A		B			
№45			C			
№46			B			
№47			B			
№48			B			
№49			C			
№50			C			
№51			B			
№52			B			
№53			B			
№54			C			
№55			B			
№56			C			
success rate	85%		84%		100%	79%