

PROVIN

Healthy Ingredients Utilized
from Red Wine Production

Spectral Service

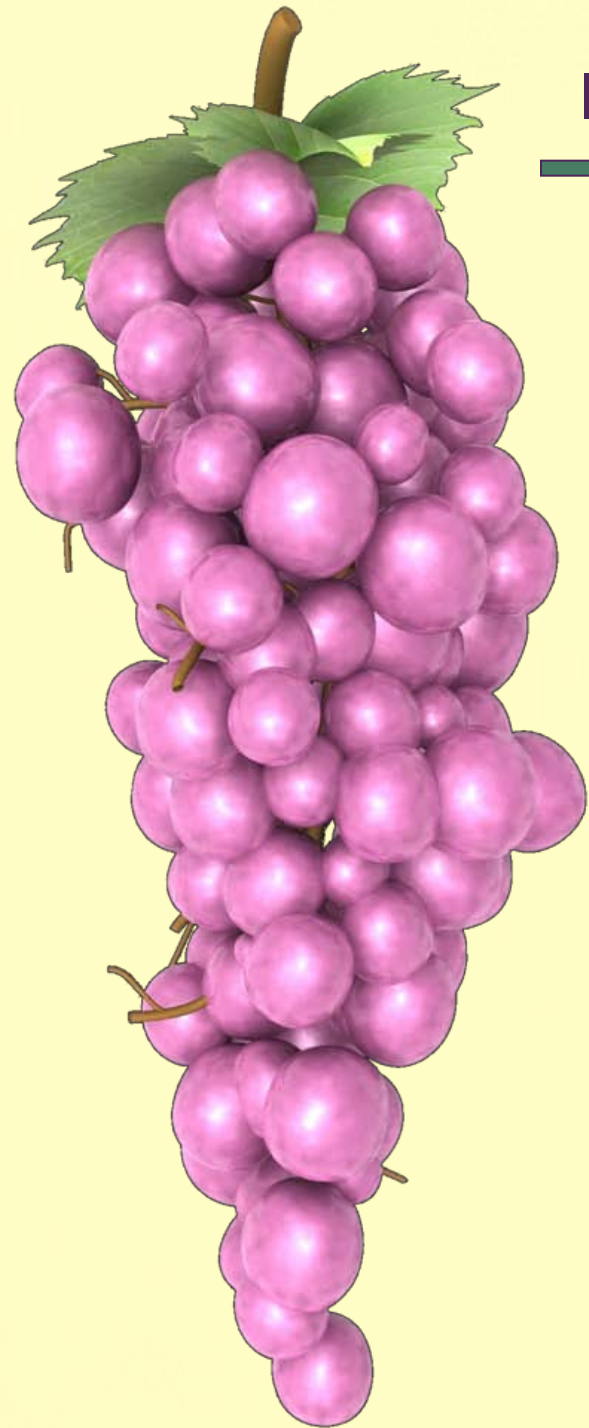


ttz Bremerhaven



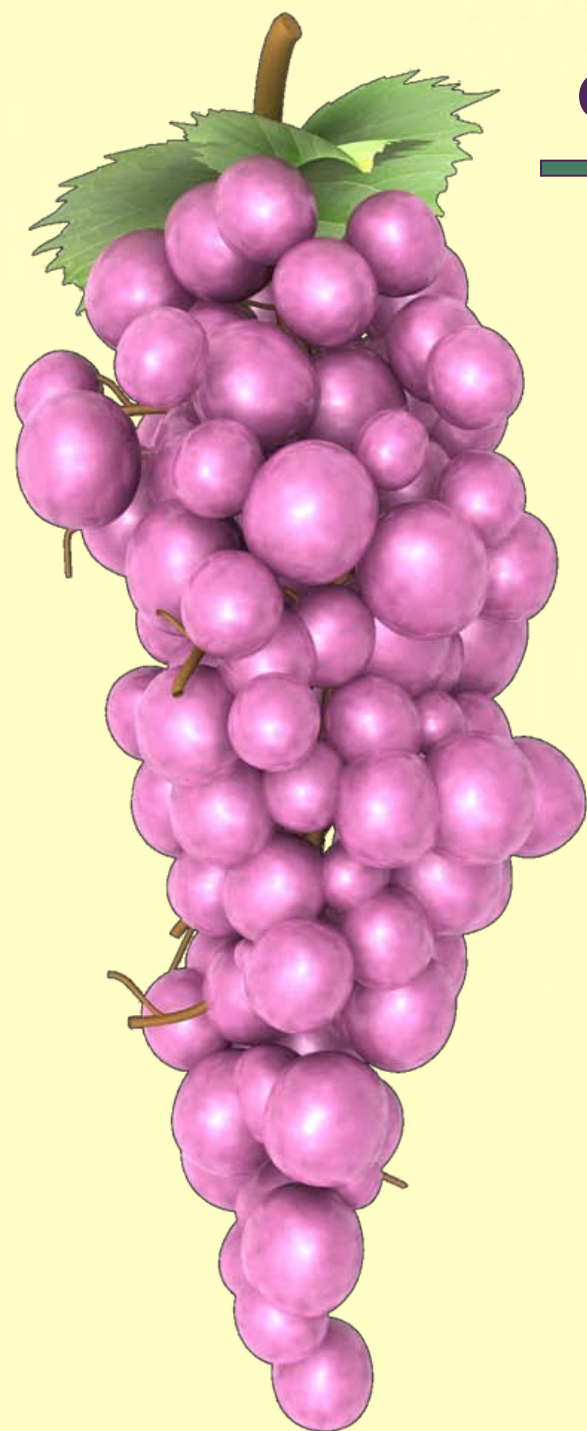
Ideen eine Zukunft geben

Intention of ProVino



- ↗ Grape Wine Production is a Very Important Economic Factor in Europe.**
- ↗ A Huge Amount of Raw Material is available for Production of High Valuable Products.**
- ↗ Sustainability in Food Production Chains requires Utilisation of all By-products.**
- ↗ World-wide growing Interest on Health Promoting Food Ingredients / Functional Foods / Dietary Supplements**

Characteristics of ProVino

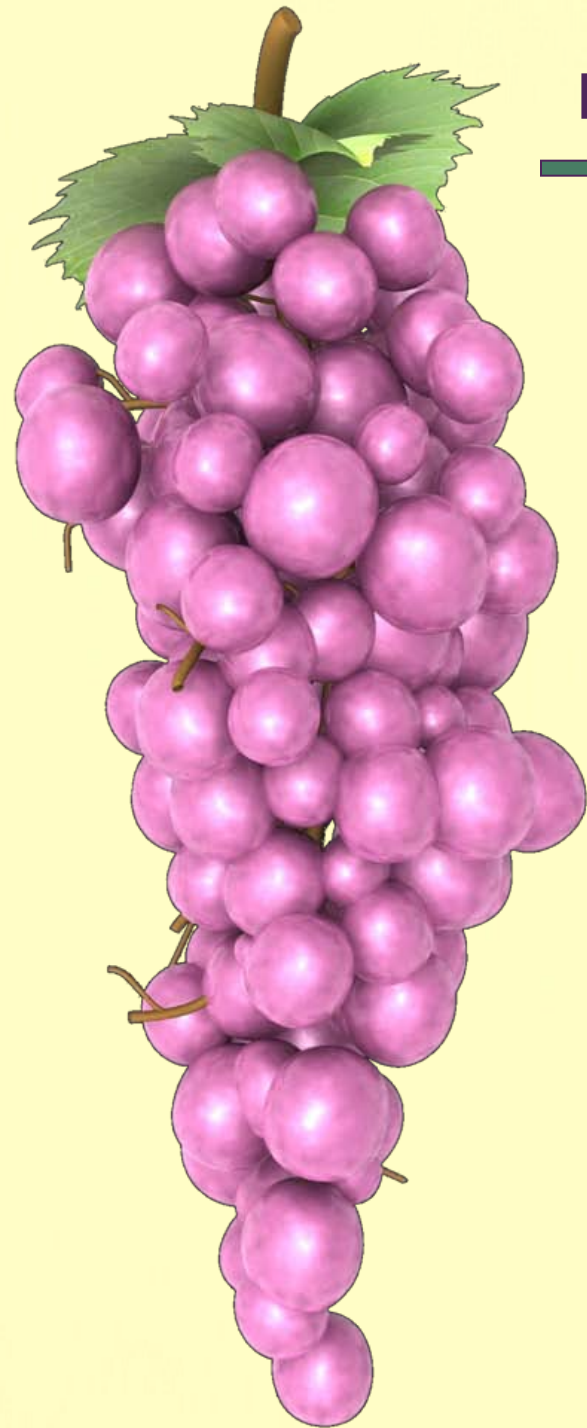


- ↗ Pleasant Appearance and Flavour of Red Wine depending on the Variety
- ↗ Rich in Antioxidant Polyphenols
- ↗ Up to 30 % Protein
- ↗ Essential Vitamins B₁, B₂, & B₃
- ↗ Essential Minerals – up to 7 % Potassium along with a low content of Sodium
- ↗ Low Fat and Sugar Content
- ↗ Alcohol-Free

SPECIAL about ProVino:

All these Functional Ingredients are packed in their Naturally Grown Matrix !

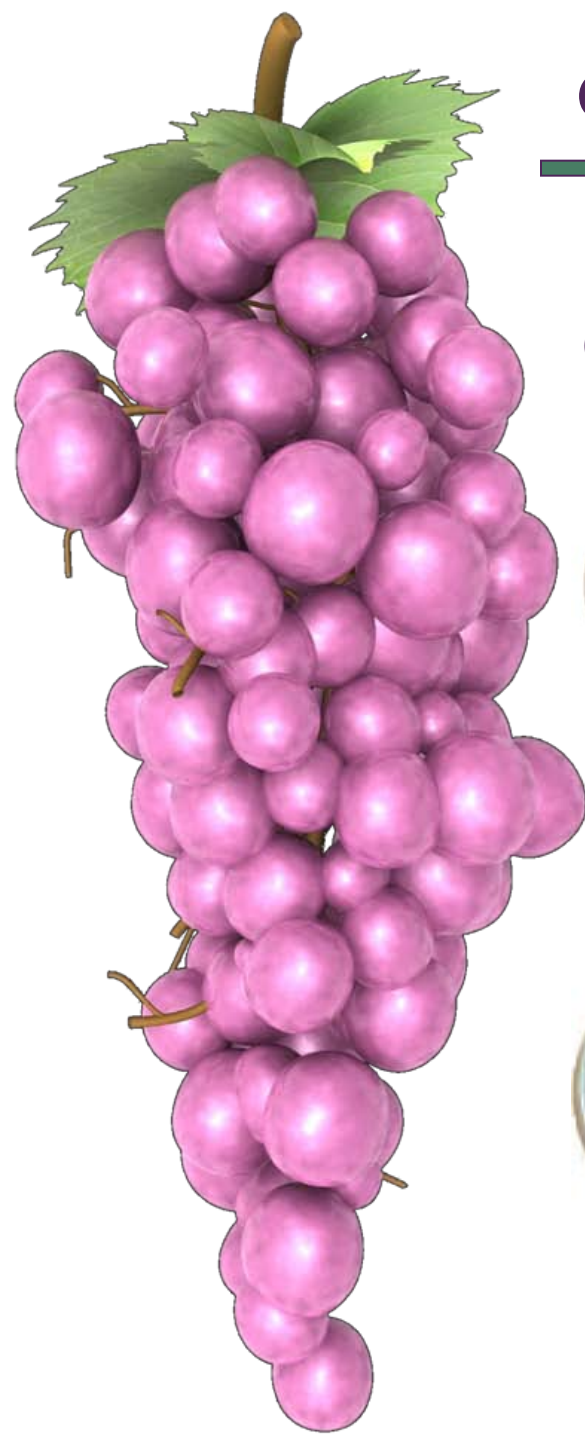
Philosophy of ProVino



- ↗ ProVino is not just a concentrate of polyphenols!
E.g. Resveratrol is only a Chemical Substance.
- ↗ ProVino is not just a mixture of several healthy ingredients !
- ↗ If you need w-3 fatty acids, eat fish !
- ↗ If you need β -Carotene, eat carrots !
- ↗ ProVino is a non-designed Functional Food.
All Functional Ingredients are in their Natural Grown Matrix!
- ↗ ProVino contains NO Additives, Antioxidants or Stabilizers, nor any other Formulation Aid.
- ↗ ProVino is Stable by Nature

Comparison of different varieties

Red Wine collected from different German Wine-Growers in December 2007



**Dornfelder
(Mosel)**



**Dornfelder
(Rheinland)**



**Dunkelfelder
(Rheinland)**



**Saint Laurent
(Rheinland)**



**Regent
(Pfalz)**



**Portugieser
(Pfalz)**

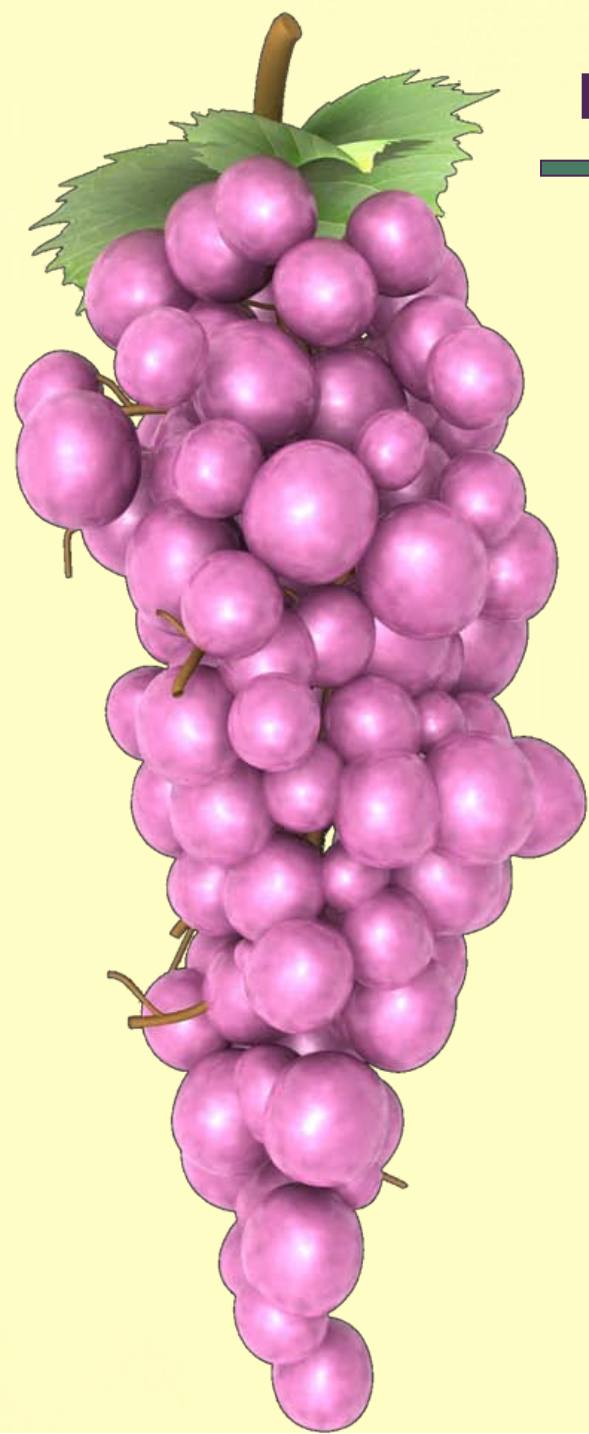


**Spätburgunder
(Pfalz)**

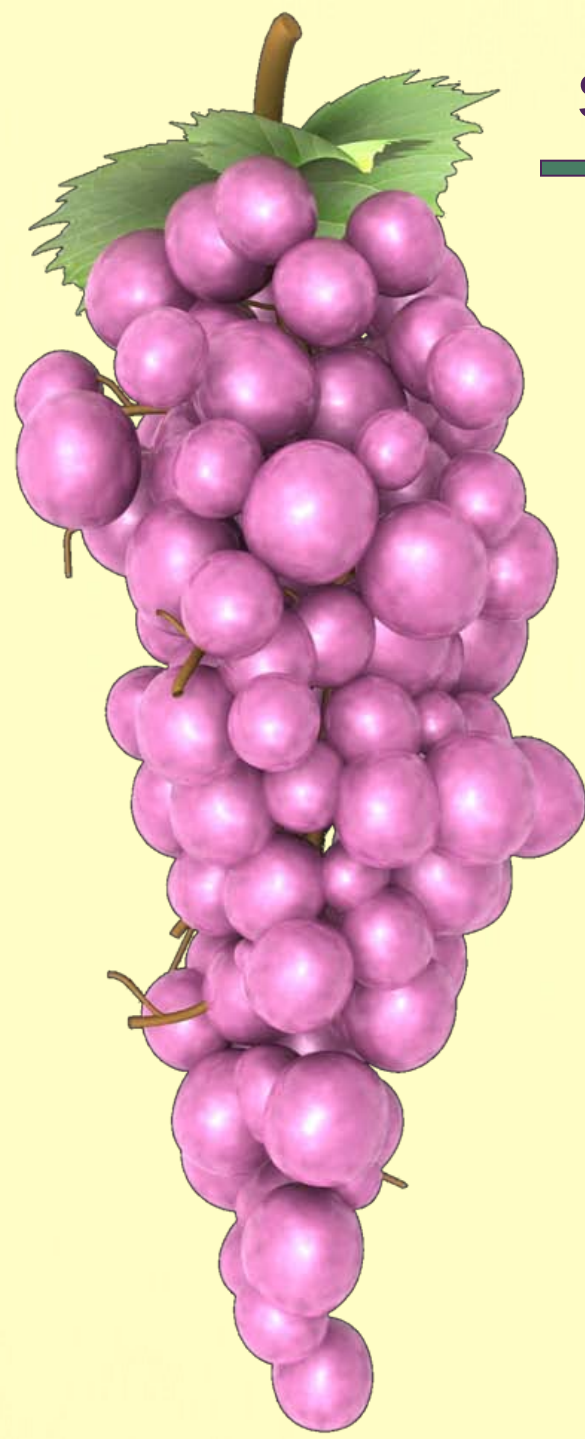




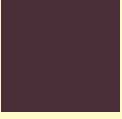


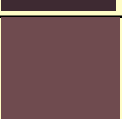

**Spätburgunder
(Ahr)**

Development of a gentle drying process

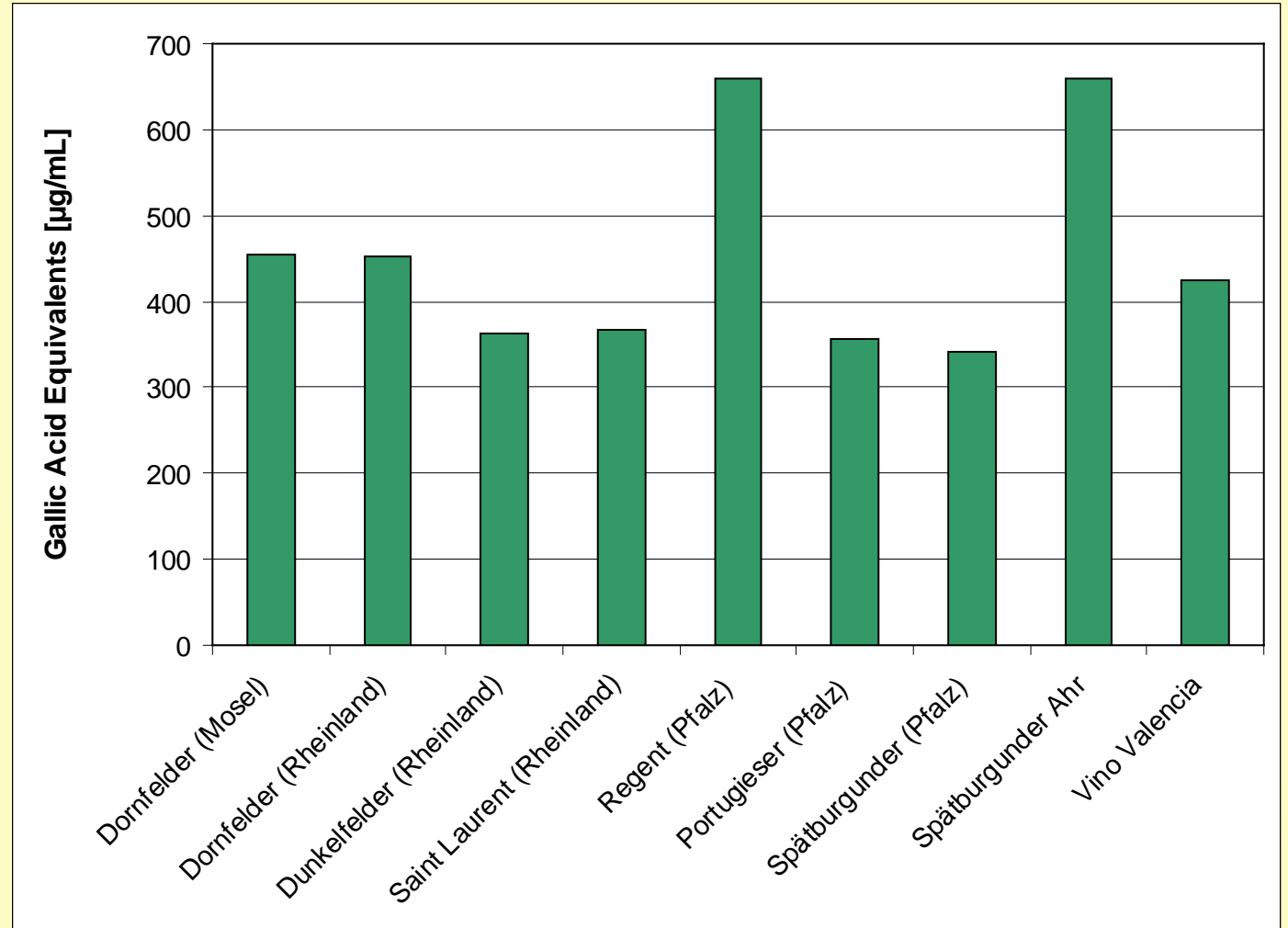
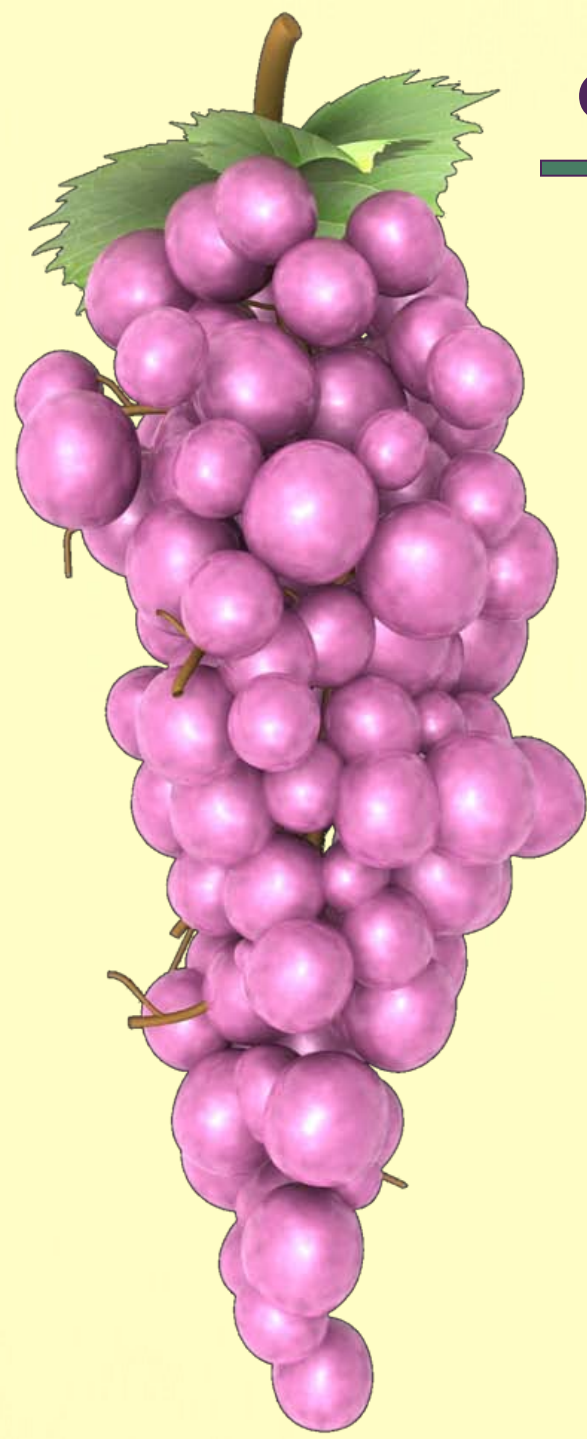


Sensory Evaluation of Red Wine Powders

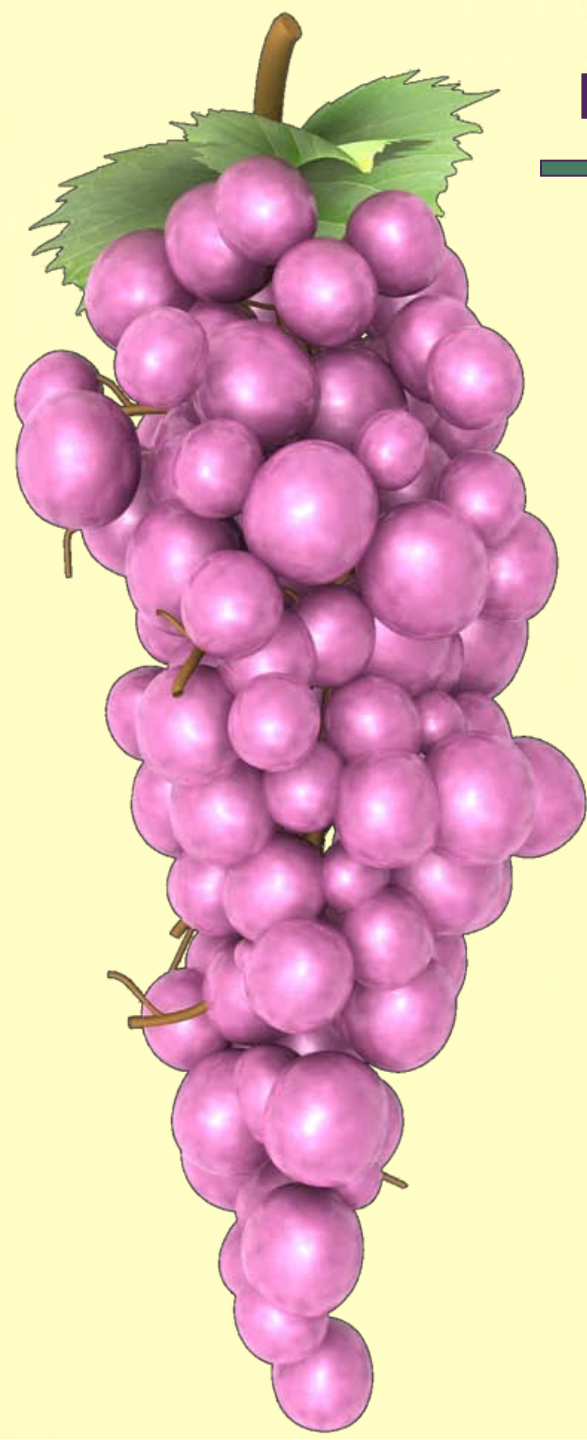


Variety	Provenience	Colour	Appearance	Odour	Flavour	Acid
Dornfelder	Mosel		blue-violet	slightly acidic	acidic, wine alike	ok
Dornfelder	Rheinland		dark red-brown	slightly acidic	acidic, wine alike	pleasant
Dunkelfelder	Rheinland		red-brown with white cristals	fruity, sweet	acidic, non-soluble particles	ok
Saint Laurent	Rheinland		red-violet	wine alike	acidic, harsh	ok
Regent	Pfalz		dark old rose	acidic	acidic, citrus	strong
Portugieser	Pfalz		red-violet	acidic, musty	acidic, citrus, wine alike	strong
Spätburgunder	Pfalz		red / old rose	fruity	acidic	ok
Spätburgunder	Ahr		old rose	slightly acidic	acidic, wine alike	ok

Contents of Total Phenolic Compounds



Phenolic Compounds in Red Wine



~ Phenolic Acids:

Gallic Acid

Caffeic Acid

p-Coumaric Acid

Ferulic Acid

Vanillic Acid

4-Hydroxybenzoic Acid

3,4-Dihydroxybenzoic Acid

Chlorogenic Acid

~ Flavonols:

Quercetin dihydrate

Quercetin-3-glycoside

Kaempferol

~ Catechines:

(+)-Catechins

(-)-Epicatechins

Resveratrol (trans)

Lots of Applications...

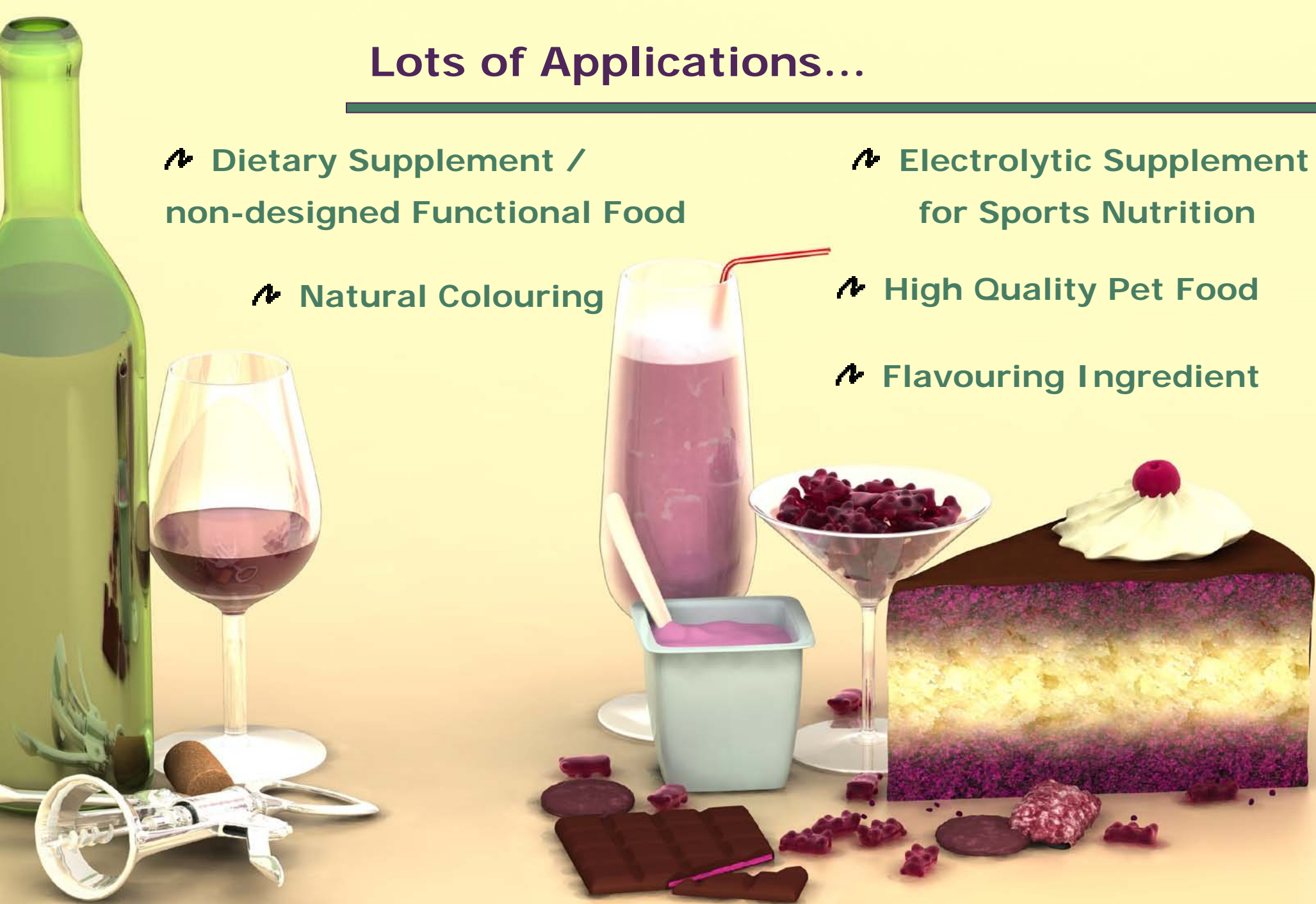
↗ Dietary Supplement /
non-designed Functional Food

↗ Electrolytic Supplement
for Sports Nutrition

↗ Natural Colouring

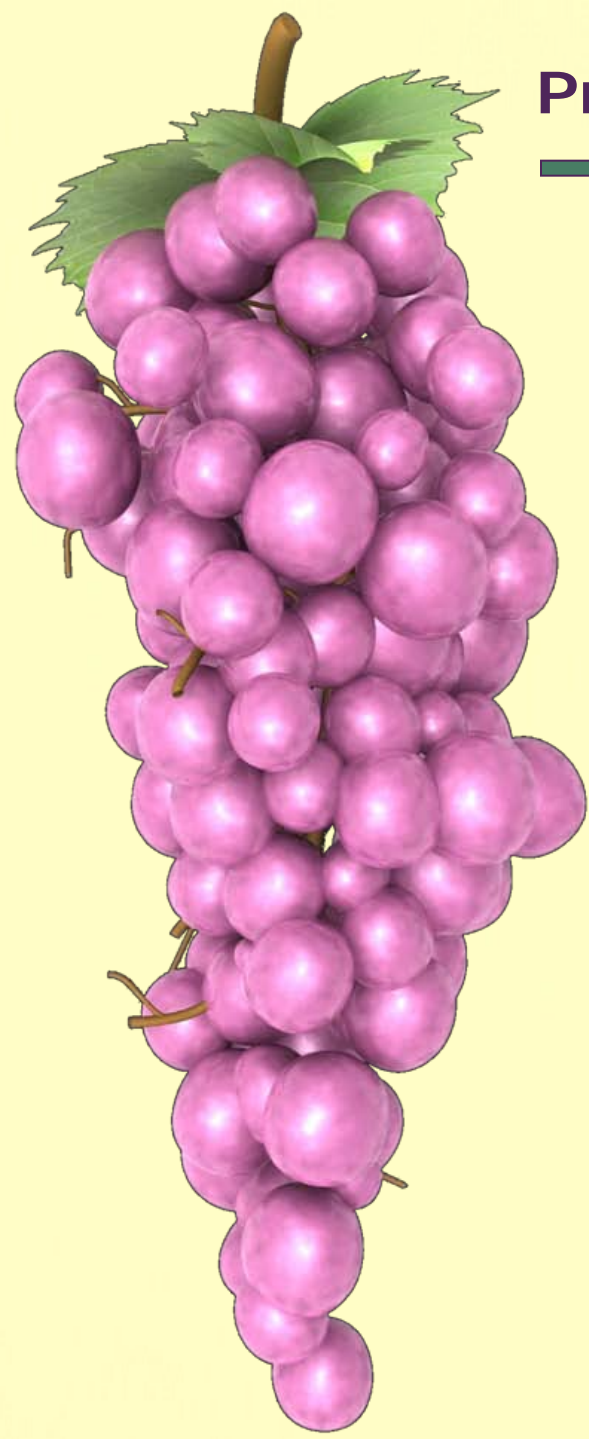
↗ High Quality Pet Food

↗ Flavouring Ingredient



ProVino in Pastries

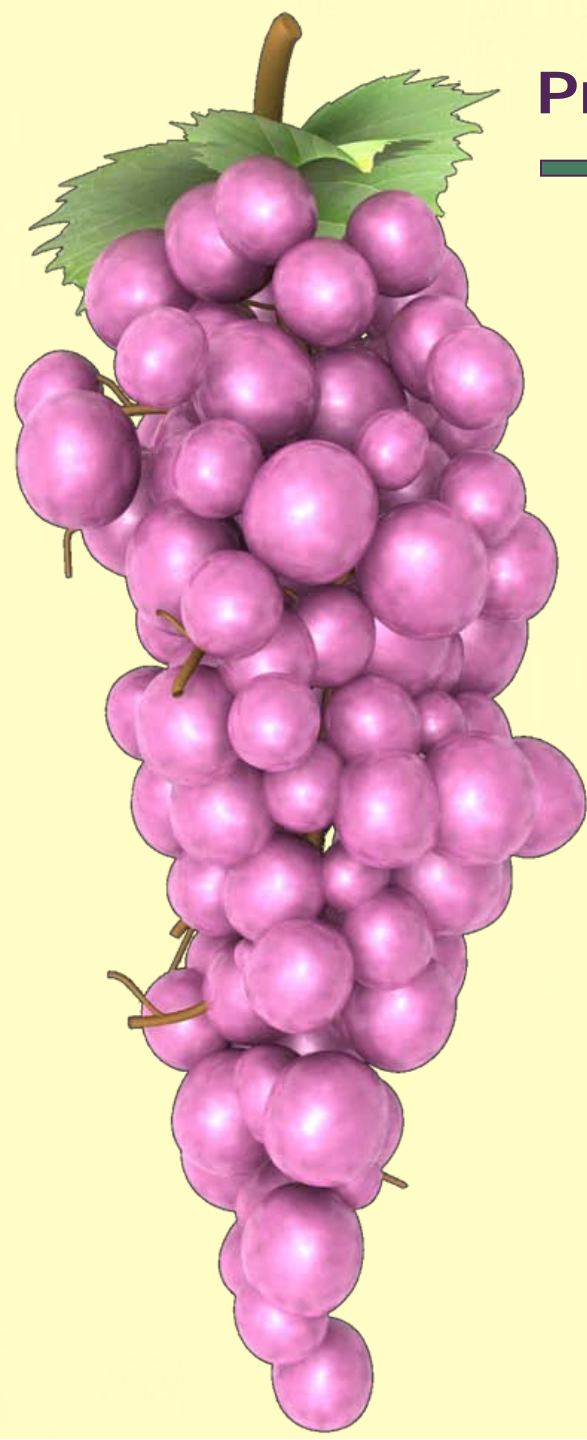
- ~ Concentrations added: 0.5, 1, 2, 4, and 6 %
- ~ Best Result: 2 % ProVino added
- ~ Nice Wine Flavour with Pleasant Acid



ProVino in baked Cake

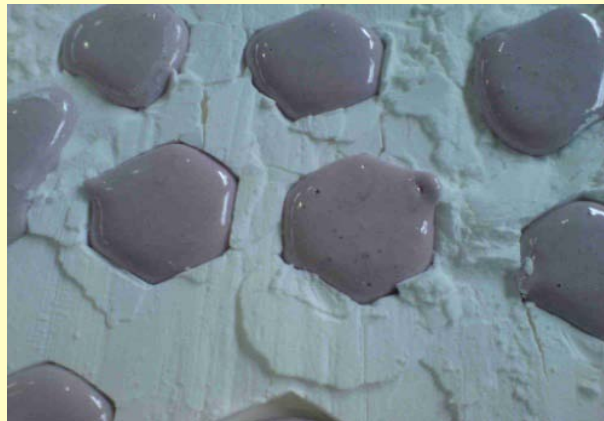
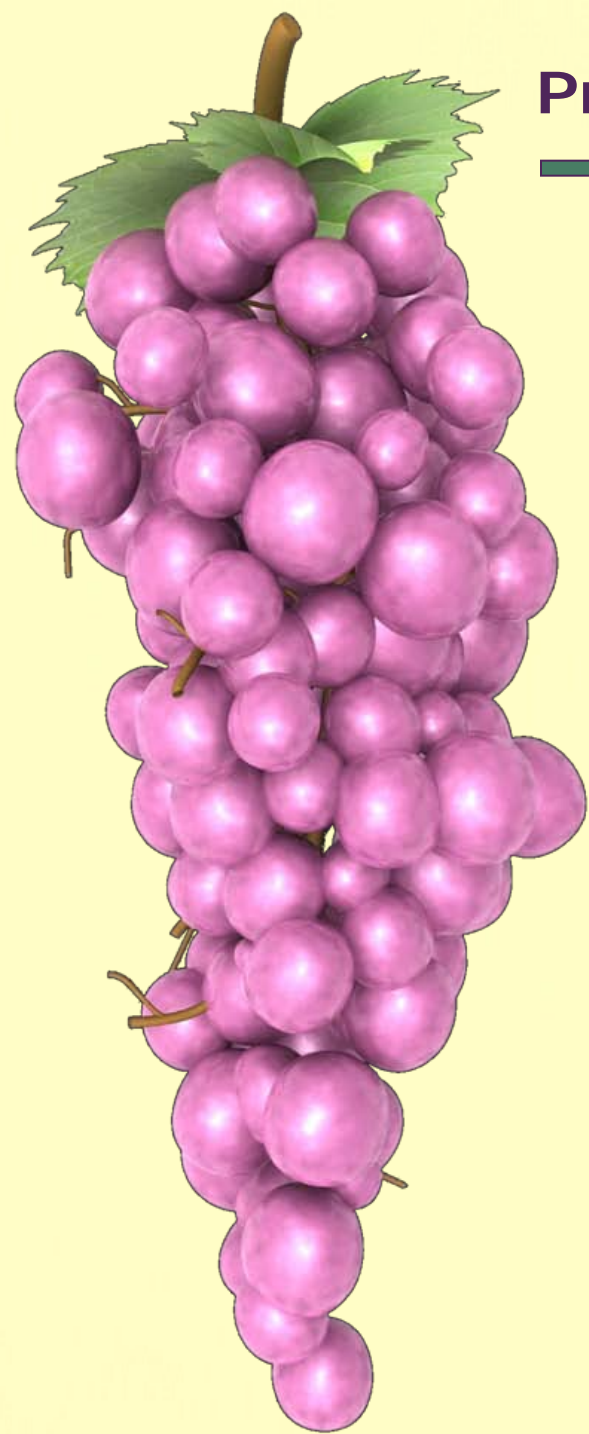
↗ Concentrations added: 0.5 to 7 %

↗ Best Result: 3 % ProVino added



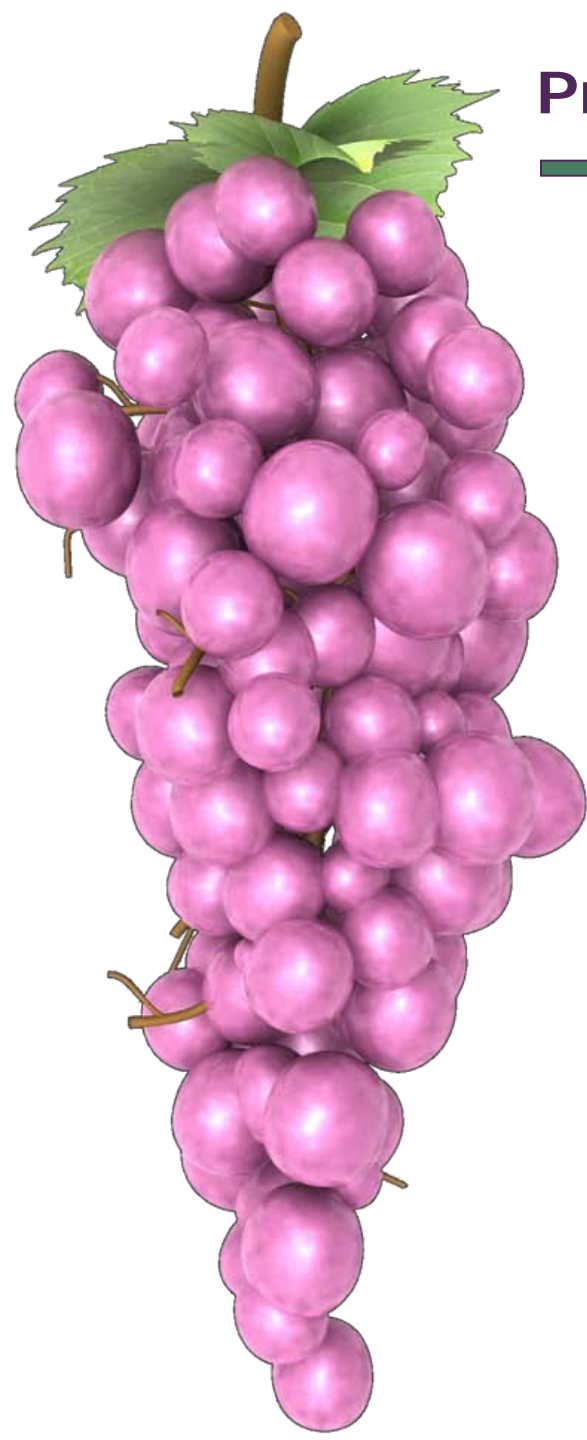
ProVino in Jellies

- ↗ 1 % ProVino – colouring like raspberry
- ↗ 2 % ProVino + 0.3 % citric acid – nice wine colouring with intense flavouring



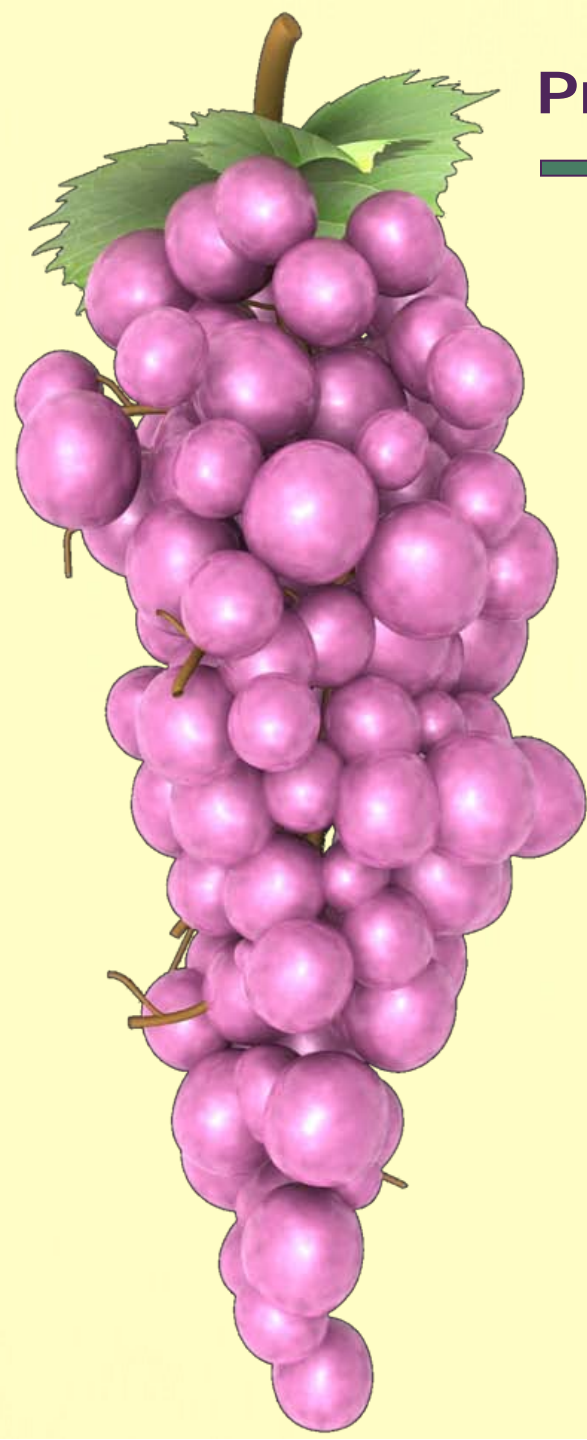
ProVino in Milk Chocolate

- ↗ Concentrations added: 1 to 6 %
- ↗ Best Result: 3 to 5 % ProVino
- ↗ Pleasant wine flavour with beady effect of acid



ProVino in Cosmetics – Skin Crème

- ↗ Concentrations added: 0.1 and 0.5 %
- ↗ Best Result: 0.5 % ProVino added
- ↗ Very intense colouring



ProVino in Cosmetics – eye shadow

~ Concentrations added: 18 %

~ Nice Colouring possible on Lids

