From: Yael Maxwell
Sent: Tuesday, August 24, 2010 8:51 PM
To: Paul Grieco
Subject: Re: Summer of Riesling Wine Bar Crawl: Your Final Challenge
Attachments: Attachment 2 - Scenario 2.pdf; Attachment 3 - Final Calculations.pdf; Attachment 1 - Scenario 1.pdf

Dear Paul Grieco, Riesling Kommandant,

I have searched high and low, dug deep and shallow, researched far and wide and calculated from top to bottom to find answers to your questions worthy enough to name me the winner of the 2010 First Annual Summer of Riesling Bar Crawl. Please enjoy.

1. If I were hanging off a cliff with a nary chance of survival, I would first curse the Riesling Kommandant Paul Grieco for putting me in this position. That aside, let's say I was hanging of said cliff and I had to rely on grapes (Riesling or Chardonnay) to save me. Seems pretty hopeless, but just look at the physics. First, according to Rosemary Radden (2010) Chardonnay grapes are thin-skinned and Riesling grapes "thick-skinned." My hands get tired on that cliff and I fall. But wait! A Riesling grape is there (see attachment 1)! As you can see from the picture, I fall 100m, weigh 100kg (not really but go with me) and my velocity is 22.05 meters/second. My kinetic energy (Ek) (the energy of motion) is calculated to be 1102.5 Joules. After bouncing off the grape I continue in a sideways arc until I hit the landing spot. The Riesling grape with its thick skins have absorbed part of my Ek. So what if I fall on a Chardonnay grape (see attachment 2)? Well, same thing, but the thin skins of the grape will absorb less of my Ek and I will have a higher velocity upon hitting the ground than I would after bouncing off of a Riesling grape (see attachment 3). Hence, I will hit the ground harder after bouncing off the Chardonnay grape and be at higher risk for death or serious injury. Therefore, the Riesling grape will give me a better chance of rescue.

References

Radden, Rosemary. "Grapes and Wines of the World" . The State Library of South Australia, GPO Box 419, Adelaide SA 5001. Retrieved 2010-08-23.

2. If there's one thing I've learned from the Summer of Riesling Wine Crawl, it's that no two Rieslings are alike. In fact, they can be polar opposites and Rieslings are highly terroir-expressive. But generally, I expect crisp floral or fruity aromas, gentle honey and stone fruit flavors and a nice, lasting finish. The expressions of a Riesling from Germany are going to be sweeter, lighter and highly aromatic, often resulting from the effects of the fungus botrytis and frost. The botrytis removes water from the grapes and a higher concentration of sugar remains, resulting in higher viscosities and notes of honey. Since German Rieslings have high acidity, fermentation is often shorter than other regions, and sweeter wines result. Also, you are more likely to find notes of petrol in German Rieslings than in any other region. In Alsace, you will find drier wines (though they can also be sweet) with higher acidity and fresh, cleansing flavors. Here, the soils are primarily clay and the wines are produced in more of the French manner (ie: higher alcohol volume and no oak barrels), which leads to the difference in expression. Lastly, Austrian Rieslings are usually dry, not affected by botrytis, thick-bodied, clear with a satisfying feel on the tongue and most often with higher alcohol volumes and notes of stone fruit. Austrian Rieslings benefit from a cool climate and granite and mica soils. You can sometimes find notes of white pepper in these wines.

Well Riesling Kommandant, I have some closing words for you: Viva Summer! Viva Terroir! Viva Riesling!

Danke for this experience,

Yael Maxwell

SCENARIO 1: BOUNCING OFF A RIESLING GRAPE

distance = 100 meters

time

$t = \sqrt{\frac{2d}{g}} = \sqrt{\frac{2(100m)}{9.8 m/s^2}}$

$t = 4.5$ seconds

FALL

Velocity

$V = a * t = \frac{1}{2} g * t$

$V = \frac{1}{2}(9.8 m/s^2)(4.5 sec)$

$V = 22.05 m/s$

Kinetic Energy

$E_K = \frac{1}{2}(100kg)(22.05 m/s^2)$

$E_K = 1102.5$ Joules

Some E_K is absorbed by bounce = X

Vitis vinifera

Riesling grape

THICK SKINNED

→ Final Velocity

$E_K = \frac{1}{2} m V^2$

$(1102.5J - XJ) = \frac{1}{2}(100kg) V^2$

$\sqrt{\frac{1102.5J - XJ}{50kg}} = V$

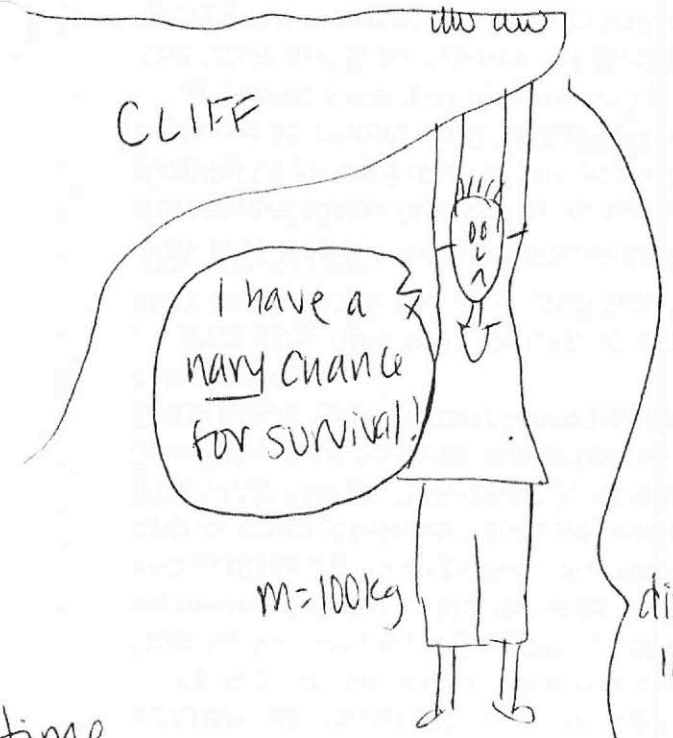
amount absorbed by bounce

$E_K = 1102.5J - X_J$

a fair distance

LANDING SPOT

SCENARIO 2: BOUNCING OFF OF A CHARDONNAY GRAPE



time

$t = \sqrt{\frac{2d}{g}} = \sqrt{\frac{2(100m)}{9.8 m/s^2}}$

$t = 4.5$ seconds

FALL

Velocity

$V = a * t = \frac{1}{2} g * t$

$V = \frac{1}{2}(9.8 m/s^2)(4.5s)$

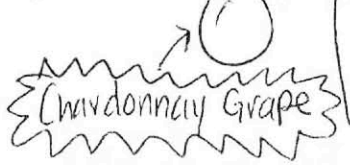
$V = 22.05 m/s$

Kinetic Energy

$E_K = 1/2(100kg)(22.05 m/s^2)$

$E_K = 1102.5$ Joules

average diameter



Some Ek is absorbed by bounce = Y

Final Velocity

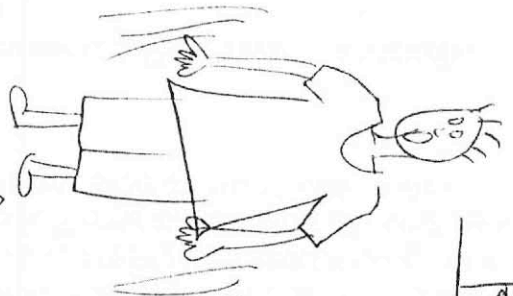
$E_K = \frac{1}{2} m v^2$

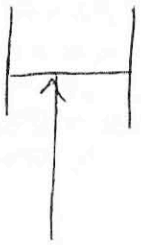
$(1102.5J - YJ = \frac{1}{2}(100kg)$

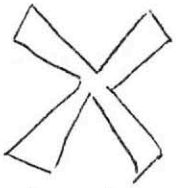
$\sqrt{\frac{1102.5J - YJ}{50kg}} = V$

amount absorbed by bounce

$E_K = 1102.5J - YJ$







Final Calculations

Scenario 1:
Thick-skinned Riesling

$$\text{velocity} = \sqrt{\frac{1102.5\text{J} - X\text{J}}{50\text{ kg}}}$$

$$V = \sqrt{\frac{1102.5\text{J} - 200\text{J}}{50\text{ kg}}}$$

$$V = \sqrt{1805\ \text{J/kg}}$$

$$V = 4.2485\ \text{m/s}$$

LOWER V = SOFTER IMPACT

HIGHER CHANCE FOR SURVIVAL

RIESLING = WINNER

PLUG IN

Since the thick skins will absorb more kinetic energy (E_k)

$X > Y$

So lets just say

$X = 200\text{J}$

$Y = 100\text{J}$

PLUG IN

Scenario 2:
Thin-Skinned Chardonnay

$$\text{Velocity} = \sqrt{\frac{1102.5\text{J} - Y\text{J}}{50\text{ kg}}}$$

$$V = \sqrt{\frac{1102.5\text{J} - 100\text{J}}{50\text{ kg}}}$$

$$V = \sqrt{20.05\ \text{J/kg}}$$

$$V = 4.4777\ \text{m/s}$$

HIGHER V = HARDER IMPACT