what's
with...

WINE

by

FRED W. DIES
THE BIG SWITCH IS ON!

The big switch is on! A dramatic change is taking place in the drinking patterns of America's alcoholic beverage consumers. More and more drinkers are reaching for wine - red wine, white wine, sweet wine, dry wine, imported wine, American wine, pop wine, jug wine - just so it's wine!

One fact cannot be denied. Wine is now being consumed by more people and in larger quantities than ever before. And since it is pleasing to the taste buds, soothing to marijuana-irritated throats and inexpensive in price, many young adults, teen-agers, and even pre-teens are being attracted to the so-called cheap pop street jugs which are now flooding the market.

But what are the facts? Just what is wine and how is it produced? Does it contain any harmful ingredients? Why are so many 9, 10, 11 and 12 year-olds already "wining" and fully addicted to alcohol simply because they drink wine? We hope this folder will help answer the question...

"What's Wrong With Wine?"

WHAT IS WINE?

In simple terms, wine is fermented grape juice. Webster's Dictionary explains this definition by stating that wine is "fermented grape juice containing varying percentages of alcohol, colored and odoriferous substances (including alcohol and color of the grape), and carbon dioxide." Another dictionary defines wine as "a fermentation of sugar by yeast to produce alcohol."

The dictionary defines fermentation as "the decomposition of complex molecules under the influence of ferment or enzymes." In the case of wine, the fermenting agents are microscopic yeasts that have settled from the air on the skins of the ripening grapes. After the grapes are pressed, the yeasts release enzymes into the must that actually change the grape sugar into ethyl alcohol and carbon dioxide.

Notice the words "decomposition of complex molecules." This is a nice way to say the grape juice has begun to decay - to rot! Fermentation is nothing more than "controlled" rotting of grape juice. Alcohol and carbon dioxide are merely the waste materials produced when any type of fruit, grain or vegetable undergoes decay. In fact, alcohol never occurs in natural substances until decay has set in.

THE INGREDIENTS OF WINE

Let's look at the ingredients in this dramatic chemical change called "fermentation."

ETHYL ALCOHOL - This is the all-important item in wine and all other alcoholic beverages. As fermentation progresses the amount of alcohol produced may reach a maximum of 15% of the total volume (70 proof). However, some wines are "fortified" by having additional alcohol blended in to raise the alcoholic concentration significantly.

People drink wine for the alcohol it contains, and specifically for its effect on the brain. Ethyl alcohol is a narcotic drug whose specific effect on nerve cells is to dissolve the fat, increase cell fluids, and cause the cells to become temporarily inactive. Every time a drinker consumes a glass of wine he is putting some of his brain cells temporarily out of commission. If a woman's brain is completely destroyed, Yet, if alcohol did not produce this effect on his brain, he would never drink it.

METHYL ALCOHOL - Usually referred to as "wood alcohol," this is an extremely dangerous member of the alcohol family. Although most wine contains small amounts ranging from .03% to .02%, this is a significant concentration. In fact, any amount in a beverage should trigger concern. Because of the slowness with which it is eliminated from the body it should be regarded as a cumulative poison with an unusually high toxic hazard rating. Fruit wines are especially high in methyl alcohol.

HIGHER ALCOHOLS - At least eight members of the propyl, butyl, pentyl, hexyl group of higher alcohols are always present in wine, and several others may show up in batches from time to time. The longer a beverage is aged the greater the amount of higher alcohols present.

Many authorities believe they are responsible for many of the undesirable physical effects, such as vomiting, "mushiness," or a sudden "pouring after," when wine drinkers overindulge. One thing we are sure about - no amount of these higher alcohols is considered safe. They are all labeled "poisonous" when ingestion into the human body is being considered.

ALDEHYDE - This organic compound is intermediate between alcohol and acid. It is reducible to an alcohol and oxidizable to an acid. Wine contains only about .005% of aldehyde, but it together with high toxic hazard ratings and small quantities are considered very dangerous.

LEAD - Pure grape juice has very little, if any, lead. Sometimes just a trace is discovered. However, government reports indicate 39% of French wines exceed the 0.2 mg. per liter legal limit which is considered the safe extreme. The sources of this unusually high lead content are unlined casks, lead-based paints, rubber hoses, copper some- times, and excessive amounts of lead-containing ingredients used in the preparation of wines.

Iron - The primary source of excessive iron in wine appears to be contact with iron equipment. Most California wines contain less than 10 mg. per liter. This is not too excessive, but the range of iron content is wide among the various types and brands of wine. In fact, it varies from 0.0 to 50 or more per liter.

COPPER - Yeast poisoning from copper sometimes occurs. If copper is used as the container of a wine, it will carry over into the wine.

SODIUM ACID - Sodic, or sodium, is a potassium or sodium salt that has been approved for use providing not more than 0.1% remains in the wine. It is used as a mold and yeast inhibitor and as a preservative. Various investigators give their verdict: "causes the slight toxic hazard; physical changes usually disappear when ingestion ends; is nearly non-toxic to humans."

SULFUR - The recommended maximum is 0.02, but this is considered much too high for safety by several authorities in this field.

CALCIUM - Although small amounts of calcium are derived from the fruit and the soil and are present in all wines, often batches are encountered which contain very large and excessive amounts. The usual sources for the excessive calcium supply are found to be concrete tanks, plastering, calcium-containing fertilizers, inorganic, and the same sources of calcium found in water.

ALUMINUM - This metal is a normal constituent of wine. Most have no more than 1 to 3 mg. per liter. However, many and more of the white wines are reporting amounts of aluminum often exceeding 15 mg. Aluminum containers and pipes, and inorganic agents are the usual source of these higher amounts. Red wines are always higher in aluminum than white wines.

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WHAT HAPPENS TO NUTRIENTS?

Now let's consider what happens to some of the principal nutritional substances when grape juice is converted to wine.

Carbohydrates - About 47% of calories in an average diet is provided by carbohydrates. They constitute a major class of foods. In wine-making we are mainly concerned with amounts of dextrose, levulose, arabinose, pentose and inositol. Pure grape juice contains 15 to 25% carbohydrates by volume. However, the wines produced only contain a range of 0.1 to 0.3%. This means that during the process of fermentation the carbohydrate concentration is reduced more than 99%. When grape juice is changed into wine there occurs an almost total destruction of very important nutritional substances.

Protein - This nitrogenous compound is involved in structure, hormones, enzymes, muscle contraction, immunological responses, and other essential life functions. When we compare the amounts found in the must with those in the finished wine, we discover as much as 70% loss with some types. Another tremendous loss of food value.

Mineral compounds - Here again we notice a significant decrease when grapes are converted to wine. In fact, the total amount of mineral compounds may be reduced as much as 50%. Some of the major casualties are potassium (an element present in the body, mostly inside the cells, in considerable amounts), magnesium (an element essential to the diet), and calcium (a dietary essential needed for formation of bones and teeth).

Vitamins - Ascorbic acid, better known as Vitamin C, is found in fresh grapes in amounts as great as 33.8 mg. per 100 ml. However, the amount decreases steadily during crushing and fermenting and little or none is present in the wine. Vitamin B1 (thiamin), the anti-neuritis vitamin which is essential to normal metabolism and nerve function, also suffers an almost complete annihilation. Up to 97% of this vitamin may be destroyed in the fermentation process. Another victim is nicotinic acid, probably better known as Vitamin PP for its pellagra-preventive abilities, and more recently it has been used as a chloroform-lowering agent. It appears in grape juice in significant amounts, but approximately 52% is destroyed during the fermentation. Biotin, formerly called Vitamin H, a colorless crystalline vitamin deemed essential to man and a wide variety of animals, is reduced by 23% during the wine-making process. Riboflavin, or B2, is the growth-promoting member of the Vitamin B complex. It is essential for the oxidation of carbohydrates. Riboflavin is easily destroyed by light, and during the sulfiting and fining processes of wine making about 50% is lost. Another member of the B2 complex, meso-inositol, is reduced by one-third during the chemical change.

THE BIG QUESTION:

WHAT'S WRONG WITH WINE?

Are you ready to answer the question, "What's Wrong With Wine?" Here are a few ideas:

1. Wine is a very complex mixture of organic and inorganic compounds. Some are harmless, some are not so harmless, and others are potentially quite dangerous.
2. As more people are becoming concerned about the nutritional value of the foodstuffs which cross their lips, it is alarming to realize that when grapes and pure grape juice are allowed to ferment into wine an extremely high percentage of their food value is destroyed and a significant amount of the potentially dangerous narcotic drug alcohol is produced.
3. Quality control is woefully lacking in most of the inexpensive "pop" wines. Frank Prim, wine expert for the New York Times, states that the winemakers can "mask many flaws in the wine; not that the neophyte would recognize the flaws anyway, but whether would trust experts." With the increased interest in wine drinking, many producers are getting rich with gigantic "ripoffs" in the industry. One recent newspaper story tells how a small company made a profit of $12 million by selling a "cheap mixture, which looked and tasted like wine" but which only contained "sugar, water, glycerin, sulfiting acid, coloring and wine dregs."
4. The sweet, pleasant taste of the cheap, "pop" wines is so pleasing to the taste buds that dependence on these beverages occurs much more rapidly than with other alcoholic drinks. One runs a double risk of becoming "hooked" by the craving for the good taste and the effect of the alcohol at the same time.
5. It is a well established fact that "wineos" (alcoholics who are exclusive drinkers of cheap, sweet wine), have more brain damage occurring over a much shorter length of time than other types of alcoholics. Workers with "skid row" type alcoholics can usually spot the true "wino" because of the excessive retardation he shows when considered alongside other alcoholics who have drunk for a similar period of time.

Well, that's a start! Consider the question and make your own list of answers. -- What's Wrong With Wine?

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