



**SYNTHESIS AND CONCLUSIONS OF THE
INTERGOVERNMENTAL GROUP OF THE F.A.O.
ON THE WINE CONSUMPTION AND HEALTH**

**Study prepared jointly by
The F.A.O. and the O.I.V.**

**Sixth sitting
Santiago (Chile)
5-9 september 1994**

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PRODUCT COMMITTEE

INTERGOVERNMENTAL GROUP ON VITIVINICULTURAL PRODUCTS

**Sixth Sitting, Santiago (Chile),
5-9 September 1994**

WINE CONSUMPTION AND HEALTH **(Study prepared jointly by the FAO and the OIV)**

GENERAL PRESENTATION

Within the context of the cooperation instigated with the United Nations Organisation for Food and Agricultural (FAO), the FAO intergovernmental group on vitivinicultural products, to which the OIV is associated, at its 6th sitting, 5-9 September, 1994, in Santiago, Chile, stressed matters relating to wine and health.

In order to better understand and have the use of concrete scientific information, the work group asked three experts to collect information on actual current knowledge which has been based on research work.

Also, for the first time, the OIV has published the Minutes of this group concerning health and wine consumption.

I. - INTRODUCTION

1. One of the constant preoccupations of the intergovernmental Group on Vitivinicultural Products deals with the imbalance of the Viticultural economy, notably in wine, the principal product of this sector, and the adverse effects that such structural surplus can have on the price and the cultivator's benefits. In its evaluation of economic factors contributing to bad market perspectives, notably for ordinary wine, the Group has, on several occasions, drawn attention to the trend of reduced world consumption. This is linked to different economic and social aspects depending on the country, the principal distinctions between the so called traditional markets with a high consumption and the more recent markets with a relatively low level of consumption. The increasingly widespread belief that alcohol consumption is harmful to health is just one factor amongst others, although potentially full of heavy consequences, to which the trend for reduced wine consumption is attributed.

2. At its fifth sitting, the Group noted the trend of numerous countries actively discouraging the consumption of alcoholic drinks, by organising, notably, campaigns of a nature more emotional than scientific. The Group expressed hope that internatio-

COMITÉ DES PRODUITS

GROUPE INTERGOUVERNEMENTAL SUR LES PRODUITS VITIVINICOLES

Sixième session, Santiago (Chili),
5-9 septembre 1994

LA CONSOMMATION DE VIN ET LA SANTÉ

(Étude préparée conjointement
par la F.A.O. et l'O.I.V.)

PRÉSENTATION GÉNÉRALE

Dans le cadre de la coopération instaurée avec l'Organisation des Nations Unies pour l'Alimentation et l'Agriculture (F.A.O.), le groupe intergouvernemental sur les produits vitivinicoles de la F.A.O. auquel est associé l'O.I.V. a mis l'accent, lors de sa sixième session entre le 5 et le 9 septembre 1994 à Santiago du Chili, sur les questions relatives à la consommation de vin et à la santé.

Afin de mieux comprendre et de disposer d'informations scientifiques solides, le groupe de travail a demandé à trois experts de rassembler, en se fondant sur les travaux de recherche, l'état des connaissances actuelles.

Ainsi pour la première fois, l'O.I.V. publie les comptes rendus de ce groupe concernant la consommation de vin et la santé.

I. - INTRODUCTION

1. L'une des préoccupations constantes du Groupe intergouvernemental sur les produits vitivinicoles a trait au déséquilibre de l'économie viticole, notamment en ce qui concerne le vin, principal produit de ce secteur, et les effets adverses que de tels excédents structurels peuvent avoir sur les prix et les bénéfices des cultivateurs. Dans son évaluation des facteurs économiques contribuant aux mauvaises perspectives du marché, notamment pour les vins courants, le Groupe a, à plusieurs reprises, appelé l'attention sur la tendance à la baisse de la consommation mondiale. Celle-ci tient à des facteurs économiques et sociaux différents selon les pays, les principales distinctions étant entre les marchés dits traditionnels à forte consommation et les marchés plus récents au niveau relativement faible de consommation. La crainte de plus en plus répandue que la consommation d'alcool ne soit nocive pour la santé n'est qu'un facteur parmi d'autres, bien que potentiellement lourd de conséquences, auquel est attribuée la tendance à la baisse de la consommation de vin.

2. Lors de sa cinquième session, le Groupe a noté la tendance de nombreux pays à décourager activement la consommation de boissons alcoolisées, en organisant, notamment, des campagnes de nature plus émotionnelle que scientifique. Le Grou-

nal scientific cooperation would be strengthened in view of producing correct information on health questions in order to warn about adopting restrictive commercial measures based on information with no solid scientific base. Wishing to promote an environment favourable to stability and commercial growth, the Group asked that available information be collected on the medical profession's opinion concerning the relationship between wine consumption and health.

3. The Secretariat, in cooperation with the Office International de la Vigne et du Vin (OIV), has tried to collect objective and accurate information on the opinion of medical bodies as to the impact of wine consumption on health, including pertinent information produced by the World Health Organisation (WHO). This being done, only research work based on solid scientific evidence should be considered, in assuring that all consequences, positive as well as negative, of wine consumption are effectively considered. This detailed information as well as relevant bibliographies, are the subject of three complementary documents, in their original language only, which were proposed to the sitting. Each of these documents were the subject of an oral statement.

II. - SUBJECTS COVERED

The subjects covered by these documents are as follows:

- 1. Wine-Health-Society (CCP: WI 94/CRS.6) by J.P. David, member of the OIV expert group "Nutrition and Health" (*).*
- 2. Summary of research results relating to moderate wine consumption (CCP: WI 94/CRS.5) by Mrs E. Holmgren, Director of Research and training of the Wine Institute (**).*
- 3. Wine and innocuousness of foodstuffs (CCP: WI 94/CRS.4) by Mrs S. Brun, Professor, Department de pharmacie, Montpellier (**).*

III. - CONCLUSION

Questions relating to wine consumption and health are complex and are often the subject of debates more emotional than rational. The negative effects of alcohol consumption have been largely studied, whilst the analysis of its positive aspects is a relatively recent phenomenon. If there was scientific proof that a moderate consumption of wine could have beneficial effects for health, especially for heart disease, the establishment of standards in this area pose difficulties also as objective. It is therefore necessary, on one hand, to follow research on these questions and other aspects linked to consumption and health, in such a way that governments and consumers have scientific information, which serve as a shield against the problems of public health, and on the other hand, to adopt restrictive and discriminatory commercial measures.

(*) Publication in the present issue.

(**) Publication in the "Bulletin de l'O.I.V." of March-April 1995.

pe a exprimé l'espoir que la coopération scientifique internationale soit renforcée en vue de fournir des informations correctes sur les questions de santé afin de prévenir l'adoption de mesures commerciales restrictives fondées sur des informations sans base scientifique solide. Désireux de promouvoir un environnement propice à la stabilité et à la croissance du commerce, le Groupe a demandé que soient rassemblées les informations disponibles sur l'opinion de la profession médicale concernant les rapports entre la consommation de vin et la santé.

3. Le Secrétariat, en coopération avec l'Office International de la Vigne et du Vin (O.I.V.), a tenté de rassembler des informations objectives et fiables sur l'opinion du corps médical quant à l'impact sur la santé de la consommation de vin, y compris les informations pertinentes fournies par l'Organisation Mondiale de la Santé (O.M.S.). Ce faisant, on s'est efforcé de ne tenir compte que des travaux de recherche reposant sur des bases scientifiques solides, en s'assurant que toutes les conséquences, tant positives que négatives, de la consommation de vin soient effectivement prises en compte. Ces informations détaillées, de même que les bibliographies pertinentes, ont fait l'objet de trois documents complémentaires qui ont été proposés, dans leur langue d'origine uniquement, à la session. Chacun de ces trois documents a fait l'objet d'un exposé oral.

II. - SUJETS COUVERTS

Les sujets couverts par ces trois documents sont les suivants :

1. *Vin-Santé-Société* (C.C.P. : WI 94/CRS.6) de J.P. David, Membre du groupe d'experts de l'O.I.V. « Nutrition et Santé » (*).
2. *Résumé des résultats de recherches relatives à la consommation modérée de vin* (C.C.P. : WI 94/CRS.5) de M^{me} E. Holmgren, Directrice de la recherche et de l'éducation de l'Institut du Vin (**).
3. *Le vin et l'innocuité des denrées alimentaires* (C.C.P. : WI 94/CRS.4) de M^{me} S. Brun, Professeur, Département de pharmacie, Montpellier (**).

III. - CONCLUSIONS

Les questions relatives à la consommation de vin et à la santé sont complexes et font souvent l'objet de débats plus émotionnels que rationnels. Les effets négatifs de la consommation d'alcool ont été largement étudiés, tandis que l'analyse de ses aspects positifs est un phénomène relativement plus récent. Si l'on a la preuve scientifique que la consommation modérée de vin peut avoir des effets bénéfiques pour la santé, notamment en ce qui concerne les maladies du cœur, l'établissement de normes dans ce domaine pose des difficultés tout aussi objectives. Il faut donc poursuivre les recherches sur ces questions et d'autres aspects liés à la consommation et à la santé, de façon que les gouvernements et les consommateurs disposent d'informations scientifiques, qui servent de rempart contre les problèmes de santé publique, d'une part, et l'adoption de mesures commerciales restrictives et discriminatoires, d'autre part.

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WINE-HEALTH-SOCIETY

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KEY WORDS: *Wine, cardio-vascular diseases, polyphenols, Mediterranean diet, alcoholism, education, prevention.*

ABSTRACT

Questions relating to the impact of wine consumption on health are examined in the context of public health. The risks linked to alcohol consumption are described as are the advantages resulting from moderate consumption. Attention is drawn to the complex problems which underlie all attempts to arrange directives concerning the appropriate level of consumption, bearing in mind biological, psychological and social characteristics of different individuals. It notes the example of the WHO's activities, aiming to fight against alcoholism and the recommendations of the OIV, defining the notion of wine consumption in moderation and suggesting, notably, the adoption of appropriate training programmes.

This report is a follow up to the request made by the OIV and the FAO for the sixth session of the Intergovernmental Group on Wine and the Vine which took place from the 5th to the 9th of September 1994 in Santiago, Chile.

In its fifth session in 1992 in Sienna, the Group was preoccupied with the factors influencing consumption (1). In fact a global decrease in wine consumption has been noted, whereas alcohol consumption is increasing (82).

Many countries have deterrent campaigns, discouraging the consumption of alcohol. The scientific basis of these actions are not however, clearly established (1). The means when implemented clearly seem unsuitable, generating abstinence without discretion.

The governments are confronted by a double challenge. On one side, they must preserve the economic, social and cultural wealth of the vitivinicultural sector, and on the other they must find the tools to understand, and the means to prevent social and human damage generated by excessive alcohol consumption, a source of high costs (2).

The present report attempts to place the problem of wine consumption in the light of scientific work, within the context of a more global approach, including public health preoccupations. Certain studies emanate from official organisations and university programmes, others from non-governmen-

VIN-SANTÉ-SOCIÉTÉ

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RÉSUMÉ

Les questions relatives à l'impact de la consommation de vin sur la santé sont examinées dans un objectif de santé publique. Les risques liés à la consommation d'alcool sont décrits, de même que les avantages résultant d'une consommation modérée. L'attention est appelée sur les problèmes complexes que soulève toute tentative pour fixer des directives concernant les niveaux appropriés de consommation, compte tenu des caractéristiques biologiques, psychologiques et sociales différentes des individus. Il est fait état des activités de l'O.M.S. visant à lutter contre l'alcoolisme et des recommandations de l'O.I.V. définissant la notion de modération en matière de consommation de vin et suggérant, notamment, l'adoption de programmes éducatifs appropriés.

Ce rapport fait suite à la demande de l'Office International de la Vigne et du Vin et de la F.A.O. pour la 6^e session du groupe intergouvernemental des produits de la vigne et du vin qui s'est déroulée du 5 au 9 septembre 1994 à Santiago du Chili.

Dans sa 5^e session en 92, à Sienne, le groupe s'est préoccupé des facteurs influençant la consommation (1). En effet, on constate une baisse globale de la consommation de vin dans le monde alors que la consommation d'alcool augmente (82).

Dans de nombreux pays, des campagnes dissuasives visent à décourager la consommation d'alcool. Les fondements scientifiques de telles actions ne sont cependant pas clairement établis (1). Les moyens mis en œuvre semblent peu appropriés, générant des abstinences sans discernement.

Les gouvernements se trouvent donc confrontés à un double défi. D'un côté, ils doivent préserver la richesse économique, sociale et culturelle du secteur viti-vinicole, de l'autre ils doivent trouver les outils pour comprendre et les moyens de prévenir les dommages sociaux et humains engendrés par une consommation excessive d'alcool, source de dépenses importantes (2).

Le présent rapport tente de positionner le problème de la consommation du vin à la lumière des travaux scientifiques, dans le cadre d'une réflexion plus globale, intégrant des préoccupations de santé publique. Certains travaux proviennent d'organismes officiels et de structures universi-

tal organisations in collaboration with the OIV (The Wine-Health-Pleasure of Life Association).

Out goes the obvious contradiction of well made speeches in society often founded on inordinate corporatism (2), necessitating the restriction of a subject as vast as it is complex.

In 1989 Professor Jacques Mirouze recalled the already vast and complex subject in a report, of which the title itself is a summary: Wine: A Food of Everyday Consumption, a Luxury Drink or Legal Drug? (3).

Consumed most often with meals, wine enters into the food class. It must therefore, respond to the demands of food safety, mentioned in the report of Professor Brun.

This step being accepted, there remains the problem of determining reasonable limits for alcohol consumption.

What could be the medical contribution to this problem (14)?

For ten years many medical publications have reported favourable effects of a moderate alcohol consumption on health.

In a moderate dose, combined with a balanced diet and a healthy life style, alcohol and wine seem to be beneficial to health.

These works conclude with the favourable effect of a moderate consumption of wine and accept the notion of a moderate consumption.

In this way Medicine can give us its point of view, based on the metabolic, clinical and alcoholological knowledge. For a long time limited to treatment and prevention of the complications of excess drinking, alcoholology often takes the turn of "alcoholismology" (77). We have witnessed for some-time an opening (56).

Give wine its rightful place without underestimating the disorders created by excessive and non-personalised consumption converging with public health goals (4, 72).

Can we put wine back into its legitimate place amongst food products exceeding the often contradictory or partisan speeches on the subject: some which affirm that wine is not alcohol, others that on the contrary it is a curse to be fought due to its alcohol content (2).

Is there a place for reasonable discussion without falling into the double trap of the neoprohibitionist spirit still often marked in legislation and rules on one hand, and in the promotion of, in a unique sense, the product on the other (4)?

Two problems appear:

- 1. Wine is a natural product obtained by alcoholic fermentation of fresh grape must. The multiplicity of "terroirs", varieties, soils and growth method, take into account the individuality of each wine. There is not one wine but many wines. The rich composition of wine (more than 1 000 compounds) does not make the scientific methodological task any easier.*

2. *The second component of wine after water is alcohol. This important constituent of wine (between 8-18 %) takes into account the difficulty of the medical position on the subject. Firstly we must settle the question of the hydro-alcoholic solution (3, 14).*

A slow evolution of the medical position is occurring in this subject in the light of epidemiological studies carried out in the world and a better understanding of the behaviour of excess (56, 48, 49).

So the question could be reconsidered as (14):

1. *What are the risks of disease at the time of a moderate consumption of alcohol?*
2. *What are the favourable effects of a moderate consumption of alcohol on the effect of certain diseases?*
3. *What are the organoleptic characteristics of wine, making it a special alcoholic drink?*
4. *What criticisms (of those who take care) could a doctor make of these results?*
5. *What are the determining factors that lead to the pathological excesses that lead on to alcoholism?*
6. *What are the consequences of having a knowledge of these determinants?*
7. *Limits and difficulties of recommendations of moderation.*
8. *International resolutions.*

I. – ALCOHOL AND RISKS OF DISEASES

1.1. Alcohol and longevity

Several results and the relatively unanimous advice of the international medical community, say that the relation between alcohol consumption and the global mortality rate is expressed in a "U" shaped curve (5). This is to say that the global mortality rate of those who drink moderately is smaller than those who either abstain or drink excessively.

1.2. Alcohol and hepatic cirrhosis

The liver is a vital organ, where the essential transformation of our food takes place, along with the elimination of hormones, residues and medicines. The metabolism of ethanol is hepatic. The liver is particularly sensitive to excess alcohol.

The metabolism of alcohol puts into play several systems of which the main one is alcohol dehydrogenase. Genetically determined hepatic enzymatic equipment is different in men and women and can differ from population to population (14).

Publications in the British Medical Journal (7), The John Hopkins Medical Journal (8), the Revue d'Alcoologie (9) and by the Royal College of

Psychiatrists of Great Britain (11) urge prudence in preserving this vital organ. The American Council on Science and Health indicates in its document "The responsible use of alcohol. Defining the parameter of moderation" (6) that the risk of hepatic diseases is low with a consumption of alcohol inferior to 24 g per day for a man and 16 g per day for a woman, that is two glasses per day for a man and 1,5 per day for a woman. The risk moderately increases with a consumption of between 40 and 60 g per day for a man and between 20 and 40 g per day for a woman. Above 80 g per day for a man and between 40 and 60 g per day for women the risk of hepatic disease increases dramatically.

In the United States 12-14 % of regular drinkers become drinkers with problems, 5 % becoming alcoholics (6).

In France it is generally considered that 10 % of the population have problems with alcohol, 5 % are dependent.

Nevertheless, a study by the Haut Comité d'Étude et d'Information sur l'Alcoolisme clearly indicates that the viticultural regions of France are not the most affected by the problems of alcoholism (12, 14).

1.3. Alcohol and cancer

The phenomenon of the "U" curve is also true of cancer. Certain studies including that of Boston (15) indicate however, that there is a risk of breast cancer in women. These results must be the subject of complementary studies.

1.4. Alcohol and vitamins

Ferro Luzi (16) studied an elderly population in which alcohol represents 6-12 % of the global calorific intake. At these levels of consumption no deficiency is observed in vitamin A, folic acid and vitamin B1 except for patients considered to be large drinkers (consumption of over 48 g/d for men and 28 g/d for women).

1.5. Alcohol and nutrition

On an empty stomach, alcohol is eliminated in 6 to 8 hours. The process of eating diminishes the peak of maximum alcoholemy after absorption and accelerates elimination. This effect is more marked with a meal rich in glucides. Ingested alcohol gives 7 calories per gramme (3, 14).

Several studies indicate that with 45 g per day of alcohol the liver uses it as a source of energy. In other terms alcohol optimises cell absorption. Above 45 g the process of the microsomial system of oxidisation or the MEOS is started. The energy generated is lost in heat (6).

This metabolic process generates the formation of free radicals, leading to a lipoperoxidation of cells responsible for oxidative stress leading to degeneration and cell death (18).

Any advice concerning alcohol consumption must be founded on this data. With a hepatic disease one must aim to further reduce consumption.

1.6. Alcohol and high blood pressure

Even if the consumption of alcohol is not considered as a factor favouring hypertension, Klastky's study (19) carried out on 66,510 people puts into evidence the relationship between the dose of alcohol and hypertension. This indicates that the risk of developing hypertension increases with the consumption of alcohol. Other nutritional factors also exist (22). Hypertension is normally followed by a stroke.

II. – FAVOURABLE EFFECTS OF A MODERATE CONSUMPTION OF ALCOHOL AND/OR WINE

This chapter is concerned with the decrease of cardio-vascular diseases (infarctus or ischemic vascular diseases) and the decrease of diabetes.

2.1. Alcohol and/or wine and coronary disease

The WHO report published in 1994 on cardio-vascular includes a paragraph on the role of alcohol and wine (5).

2.1.1. The "U" shaped curve and coronary disease (5)

The international scientific community is almost unanimous in saying that the shape of the curve in relation to global mortality and consumption of alcohol is in the shape of a U. This indicates that those who abstain, like those who drink excessively have a higher mortality rate than those who drink moderately. For coronary and ischemic diseases the risk of seeing develop a vascular athero-thrombotic attack is more likely in abstainers and excessive drinkers than in moderate drinkers.

It is noted on the other that there is a larger frequency of degenerative lesions of the heart (or myocardiopathy) and rythmic troubles in excessive drinkers (5).

Since the initial publication of Saint-Léger in 1979 (10), numerous studies have taken place. Epidemiological studies on this subject have been dominated by The School of Public Health at Harvard (20, 21) indicating a fall in the risk of ischemic disease (infarctus or ischemic vascular disease) of 30-40 % according to the level of consumption. It must be noted here that this level of protection is for small doses, from 5 to 30 g for men and from 5 to 15 g per day for a woman. It must nevertheless be remembered that this study was carried out on health workers (doctors, nurses, physiotherapists) with a high level of education. This represents a bias for extending these conclusions to all populations.

2.1.2. However, the position of the WHO is as follow:

"Whatever the reality and the weight of the other factors such as smoking, social factors, dietary habits, and the imprecisions concerning the

decrease or habits concerning drinks, there seems to exist a coronary sub-mortality in those who abstain.

Between 10 and 30 g per day, that is to say three glasses of wine, the risk of death by coronary disease is diminished in relation to those who abstain or drink excessively" (5).

2.1.3. The mechanism explaining this protection:

- *The increase of HDL cholesterol or good cholesterol. Much controversy (24, 25, 26, 70) still exists about the levels of HDL cholesterol (HDL 2 protector or HDL 3 non protector) that rise with the consumption of alcohol. There seems to exist a relationship between the dependent dose and this parameter, indicating that only a moderate dose of alcohol of 10 to 40 g according to sex, favours the increase of HDL 2 cholesterol.*
- *Reduction of plasmatic fibrogenes.*
- *Reduction of platelet aggregability is considered as an element explaining the French Paradox (39). A recent publication in the Lancet nevertheless shaded these results (42). On the other hand this effect has been attributed to the derivatives of aspirin in wine (81).*
- *Diminishing of LDL cholesterol and triglycerides (26).*
- *Decreasing of insulin (26).*

2.1.4. Duration of the protection

The WHO states that "the effective protect on moderate drinkers is quickly lost after drinking ceases" suggesting that the protection wears most on the thrombotic component of vascular illness (last step in the obstruction of the sick artery) than the atherogenic component (factors responsible for the development of abnormalities in the artery wall).

2.2. Alcohol and diabetes

The studies of the Boston group of the School of Public Health at Harvard, evaluate the risk of diabetes in the female population (23). The relative risk adjusted for other factors is 0,8 with a consumption of 5 to 15 g to alcohol per day and is 0,6 with a consumption of above 15 g per day. The group of abstainers had a risk factor of 1.

These results suggest the protective effect of a moderate consumption of alcohol as regards to the risk of mature diabetes or non-insulin dependent diabetes.

Another study indicates that the diabetics need for insulin is not altered by the consumption of wine during a meal (31). The use of wine in these pathological circumstances must nevertheless, pay attention to the lipidic level of people, notably that of triglycerides.

2.3. Alcohol and cerebro vascular accident

The risk of ischemic vascular disease is reduced in the Boston study. On the other hand the risk of a vascular haemorrhage is increased (20, 21).

III. – SPECIAL ORGANOLEPTIC CHARACTERISTICS OF WINE

3.1. The results mentioned up until now apply to wine as hydro-alcoholic solution

3.2. Wine is not only a hydro-alcoholic solution

In effect wine possesses a number of other constituents such as polyphenols, procyanidins, glycerol, potassium... more than one thousand constituents have been noted (cf. the report of Professor Brun).

3.3. Procyanidins

Amongst these constituents a particular place must be given to procyanidins. The first medical applications were envisaged following the work of Professor Masquelier in Bordeaux (27, 28).

Studies concerning their structures were followed in France by INRA of Pech Rouge (29). These compounds have antioxidising properties that are well documented (29, 30, 35, 36, 32).

Heavy in-vitro free radical sensors, (superior to vitamin E) a publication in the New England Journal of Medicine (83) indicates their possible role as protectors of ischemic disease (Oxidation of LDL).

Work in this field is useful for the future. The reactions of oxidation are at work in the ageing process and more generally in the initial mechanisms known in many illnesses (immunity illnesses, reactions in the fight against bacteria or viruses, vascular disease and loss of memory etc. (30, 35, 27, 36).

Anti-inflammatories, vascular protectors, free radical sensors, protectors against ionising radiation, anti-viral agents, anti-carries, anti-histaminic, anti-carcinogens and solar protectors have all been envisaged by Masquelier (27).

Recently their anti-ionising radiation actions have been studied by a team of Ukrainians on the victims of the Chernobyl nuclear disaster (38). These merit further investigation.

3.4. Polyphenolic non flavonoid derivatives

Stilben and hydroxycinnamates have anti-viral, anti-carcinogenic and immuno-regulatory actions (34). But note that resveratrol is the response of the vine to an attack by a parasite that develops in a humid atmosphere (botrytis).

3.5. Future perspectives

For all the non-alcoholic substances of wine, numerous works still need to be undertaken. Certain structures still need to be precised, the factors favouring their absorption and conditioning of their metabolism still remains to be determined. Their biodisponibility needs to be assessed with regards to the presence, or not of alcohol.

But whatever the favourable properties of the non-alcoholic derivatives of wine (flavonoid or non-flavonoid polyphenols, glycerol, potassium...) they are incorporated with alcohol. From use to abuse and from abuse to weakening there are only two steps that are easily overcome by an unlightened consumer, in order to remove the problems of insecurity or dependence (4).

IV. – WHAT CRITICAL READING COULD A DOCTOR MAKE OF THESE RESULTS?

4.1. The French Paradox: Definition

The French Paradox is the evidence of a low mortality rate, in spite of a high consumption of saturated fats. This evidence diminishes if one adds to the calculation the consumption of wine. For Dr. Renaud (39) and his colleagues this evidence suggests a protective effect of wine. The mechanism invoked is of platelets (39) (diminution of platelet aggregability, first time formation of clots which leads to the obstruction of the arteries and to the necrose). This effect was attributed to alcohol by some authors (39). Others attributed it to the presence derived from salicylic acid in the wine (81).

4.2. The risk factors of coronary disease are numerous (5)

4.2.1. Dietary factors

All the following dietary factors influence vascular disease; saturated fatty acids (favourising atheroma) and non saturated (in particular linolenic alpha acid protector), the richness in fibres and vegetables, natural antioxidants such as vitamins C, E, beta carotene and flavan compounds, these are all candidates for protective effects.

4.2.2. Metabolic factors

Hypercholesterolemia and hypertriglyceridemia, are two well known risk factors.

The insulin-resistance or resistance to the insulin's action generating an accentuation of the secretion is observed in obesity (hyperinsulinism), leading to fat diabetes, then the exhaustion of the pancreas. A study on English women showed that a dose of 15 to 25 g diminished all these factors and also the body weight.

4.2.3. Hemobiological factors

The mal-functioning of the endothelial cell of the vessel, the hyperactivity of the blood platelets, (small circulating cells responsible for the formation of blood clots), hypercoagulability of blood made more viscous by a rise in fibrogenes, the diminution of fibrinolytic activity, (the activity responsible for the destruction of the clot after a haemorrhage or an attack) all appear in ischemic illness. The platelet factors are favourably influenced by alcohol

(39). *Studies are under way to judge the influence of the non-alcoholic derivatives of wine on these parameters.*

4.2.4. The other factors

The level of physical activity, genetic factors, the hormonotherapy of the menopause, cultural and psychosocial factors are the other factors. These were not taken in to account in the studies which gave birth to the "French Paradox". To Renaud and his team the initial publication suggested a protective effect of wine in connection with the Mediterranean diet. These authors came to publish a study showing evidence of the important role of linolenic alpha acid, a compound of olive oil (42).

4.3. The French Paradox and/or the Mediterranean diet?

The studies carried out by the WHO and in particular the WHO Monica study (41) hold in appreciation the role of dietary factors in ischemic vascular illness. Mortality, due to cardio-vascular illness is higher in Lille and Strasbourg in the north and east of France than in Toulouse in the south-west of France. Some have attributed this fact exclusively to the properties of wine, the preferred alcoholic drink in Toulouse, whilst it is beer in Lille and Strasbourg. Is this truly the only cause, or more likely one of numerous dietary parameters and the art of Mediterranean living, that the French Paradox explains? (41, 14).

Also other dietary differences characterise the populations studied. The Mediterraneans (Toulousians in the French Monica study) had a diet richer in fibres, vegetables and fruits and not as rich in saturated fats notably in meat, rich in monosaturated fatty acids (olive oil contains oleic acids and linolenic alpha acid). The Lillois or the Strasbourgeois have a smaller consumption of fibre and a larger consumption of saturated fat (41).

With doses of 30-35 g of alcohol a day the risk of hepatic illness in particular cirrhosis does not rise. Between 30 and 35 g of alcohol a day, the JOST study found that the risk of cirrhosis would be one case in Toulouse, three cases in Lille and four cases in Strasbourg (41). It is a question of calculating the inference of the data of Haut Comité d'Étude et d'Information sur l'Alcoolisme. With an equal consumption of alcohol, dietary factors play a role which is fundamental, in particular the richness in saturated fats in food. Alcohol is not the only cause of this hepatic pathology.

4.4. Position of the WHO (5): coronary illness and diet

4.4.1. Fatty acids

monounsaturated of which oleic acid (olive oil) and polyunsaturated fatty acids are generators of a lowering of cholesterol LDL and of platelet aggregability, an anti-arrhythmic activity.

4.4.2. A rich vegetal diet protects from coronary illness

The number of complex carbohydrates, the richness in fibres, the degree of insaturation of the principal fatty acids found in a vegetal diet and the richness in antioxidising vitamins (C and E), partly explain the role of these foods in the protection; for the other part the weak sodium content and the high potassium content of vegetables, have a beneficial effect on blood pressure.

There exist on the other hand, numerous flavonoid compounds in vegetables and fresh fruit which further complicate the scientific task on the methodological scale.

4.4.3. Alcohol/wine and diet synthesis

The results reported here clearly indicate that alcohol plays a protective role in the measure in which it is used in a balanced diet of the Mediterranean type. It cannot be in itself the only explanation of all the effects observed. A recent publication in the Lancet, clearly indicated the role of linolenic alpha acid, an important constituent of the Mediterranean diet. Could the Mediterranean diet be a model for all the world (62)?

V. -- DETERMINANTS OF THE WORK IN THE EXCESS OF BEHAVIOUR

A new approach to alcoholism

5.1. Alcoholism

A concept born in 1849 with the initial publication (43, 44) of Magnus Huss a Swedish doctor, alcoholism is a concept which has taken up a lot of research due to its ambiguities which were not apparent until 1950 (44). Whatever its ambiguities the term alcoholism is not unworthy of them (56). The concept encompasses, nevertheless, illnesses, their family and the products (45). A conceptual evolution has been self imposed (45, 48, 49).

5.2. Alcoholism or the drive to alcoholisation

"Everything is toxic, nothing is toxic, it is all in the dose" Paracelse XVI c. Alcohol and/or wine are not in themselves either beneficial or harmful. It is use of them that renders them either dangerous or favourable to health (50). In the move for prevention it is the drive to alcoholisation in which one must become interested (56). To point out the abuse is not sufficient to avoid it (55, 86). This distinction between alcoholism and the behaviour of alcoholisation opens the way to a differential management of the risks (56), necessitating an evolution of mentality (56, 72).

5.3. Alcoholism and genetics

A number of works have searched for a genetic determinant of alcoholism. Proof does exist, but this approach cannot itself take into account the complexity and diversity of the problem.

5.4. Neurobiological mechanisms of dependence

The role of endorphins and bioamines is well understood, but could the suffering observed in the human complexity find an answer in only biomedical research, however important it is (2)? Also the vitivinicultural world must have a better understanding of the work in the process of excess behaviour such as those that have been described by certain people, in a more global approach.

5.5. Two key concepts "incommunicability" and "illness to see drink"

5.5.1. Incommunicability (49, 57)

5.5.1.1. When communication between people does not achieve its aim, doctors describe an emotional defect which manifests itself in human relationships. This emotional defect is responsible for suffering. It is incommunicability.

5.5.1.2. This suffering leads to a behaviour of padding out or addictive behaviour or a behaviour of excess.

5.5.1.3. The family circle, which does not always realise what is happening, will incriminate these illnesses and/or the products which support the addiction or the intoxication, these being the alcoholic drinks or the wine, but not their cause.

5.5.2. The illness to see drink (48, 57, 58, 59, 60)

Little by little a fear of resorting to the product or the drink is installed into the drinker's family circle, installing in the families or close friends a real "illness on seeing drink" as it is called by Marie-Claire Lejosne, alcoholic illnesses not dependent on alcohol. These people affected by the fear can become militants of abstinence or dissuade, without discrimination, everyone who drinks alcohol.

VI. - TWO KEY CONCEPTS FOR THE TOOLS OF THE FUTURE

6.1. Incommunicability (80)

is a diagnosis which concerns all the pathologies of daily life which one finds in phenomenons such as alcoholism, drug addiction, suicide, debt, bulimia, anorexia, abuse of psychotropic medication, compulsive sexual behaviour leading to promiscuity, to insecurity to violence and finally to exclusion (49).

6.2. Illness to see drink

can, on the other hand explain the lowering of secondary consumption, of the attitudes of close friends or the family suffering from the abnormal behaviour observed.

6.3. Two tools for the future; education and prevention

These two concepts taking into account the vulnerability and the singularity of each person, indicating the possible role of the group and the family circle, cannot be forgotten in the education for the majority of people. Knowledge is not sufficient, they must be educated! This approach opens a space, in place of the privilege of prevention.

Following these lines makes clearer, to those responsible in the governments, the optimal utilisation of the resources for the promotion of the products and the management of the risks of the illness in an ethical dimension (61, 87).

VII. – LIMITS AND DIFFICULTIES IN THE RECOMMENDATION OF MODERATION

7.1. Difficulties and limits of recommendation

The genetic variability in the makeup of people with alcohol deshydrogenase (the principal enzyme responsible for alcoholic metabolism), takes stock of the diversity of alcohol tolerance.

The circumstances of alcoholisation, the interaction of ethanol-nutrients, complicates the task of doctors in a scientific bio-medical processes.

In a bio-psycho-social perspective, the repetition of situations of incomunicability that must be evidenced, can lead to an excessive behaviour responsible for use or dependence.

Also the results of medical studies, epidemiological or biological, are limited in their contribution to the question posed. Nevertheless medical experts make recommendations, with prudence, by reason of the human complexity.

7.2. Recommendations

According to whether you are a doctor, a producer or a merchant, one has a tendency to recommend higher or lower quantities of wine. In the absence of more specific data on the protective role of the non-alcoholic derivatives of wine as to the harmful effects of large amounts of alcohol on human cells (production of free radicals), the organisations give indications, expressed in grammes of alcohol a day, can nevertheless appear a little limiting:

- in the United Kingdom the Royal Academy of Medicine (71) acknowledges that there is not sufficient proof to declare categorically the quantity of alcohol that can be safely drunk by an individual. The judgements on security in effect put back the combination of the individuals' vulnerability and the circumstances in which the alcoholic beverage is consumed;*
- in France, despite the reluctance of certain sensitivities of alcoholology, the National Academy of Medicine recommends 3-5 glasses of wine for a man and 1,5-3 glasses for a woman. This data is modulated in relation with the physical activity of the individual and their calorific ration.*

It seems nevertheless that the doses considered as moderate differ from one country to the other. The doses called moderate are based on work establishing the weak risks of the setting of a pathology, in particular hepatic. They take into account the genetic susceptibility linked to sex. Women are more sensitive to the effects of alcohol due to the fact that they have reduced alcohol deshydrogenase. These recommendations cannot take into account the susceptibility or the vulnerability of the individual.

In the United Kingdom the Health Education Authority (71), considers the reasonable measure as 24 grammes of alcohol per day for a man and 16 for a woman. Between 24 and 57 g per day for a man and 16 and 40 g per day for a woman are considered as a risk. Above these limits it becomes dangerous.

In justification to the organ the most sensitive to alcohol, that is to say the liver, the American Council on Science and Health (6) indicates that does smaller than 24 g per day for a man and 16 g per day for a woman carry little risk. Between 24 and 60 g per day for a man and 16 and 40 g per day for a woman the risk increases. Above 80 g per day for a man and 40 g per day for woman consumption becomes dangerous.

Remember here that the dose from which alcohol is metabolised under the form of heat is 45 g per day (6) putting into play the MEOS system which opens the way to peroxidation and to cellular degeneration.

In a biomedical approach, epidemiology informs us of a favourable or unfavourable effect. It clears our choices and arouses other interrogations. The complex determinants of the act of eating must lead us to envisage more and more complex studies in the bio-psycho-social perspective.

7.3. Taking into account the processes at work in leading to the determination of excess, knowing is not enough, an education is necessary

The bio-psycho-social approach which retraces the bio-medical approach, has added conformity with the WHO definition of health.

"The state of a person is not only unscathed by illness or infirmity but characterised by a certain state of well being both mental and social."

Leading a person to take a responsible decision faced with the risks and solicitation of the environment rests above all on the development and the reinforcement of his capacities to analyse the environment and the development of his aptitude to manage this information by a correctly founded education (72).

To take a drink with discretion and moderation, is part of the development and education of the individual (63, 50).

VIII. – INTERNATIONAL RESOLUTIONS

8.1. The WHO (73)

The objectives of the European Strategy Plan in the fight against alcoholism defined in Copenhagen by the WHO who see the necessity to:

- *reinforce practices in the production and distribution sectors which favour the prevention of the damages linked to alcohol,*
- *institute environments favourable to health which reinforce the motivation and the capacity of the individual to avoid dangerous practices with alcohol,*
- *reinforce the support of the public in favour of moderate practices in the consumption of alcohol, with the bias on educational programmes.*

8.2. The OIV (74)

The OIV adopted, with the unanimity of its member states, Resolution Eno 3/93 at its General Assembly in 1993 in San Francisco. With this resolution the OIV:

- *wishes to engage in a reflection on the levels of a moderate consumption,*
- *encourages the member countries to actively encourage conditions which reinforce the motivation and the capacity of the individual to avoid dangerous practices as concerns alcohol,*
- *suggests that the campaigns to fight alcohol abuse be concentrated not on general suppression of consumption (prohibition) but on education directed towards making individuals, youths in particular, aware of their responsibilities to themselves, as much as towards society.*

8.3. Private International Initiatives

In complementing this information the initiatives taken by large private companies, such as the Portman Group in the United Kingdom and the Amsterdam Group (63) for the EU or the Difa Forum for Germany, Aware for the United States have undertaken diverse actions in education or communication on moderation and security. The most experienced in this sector is without doubt Quebec, where the Alcohol Company of Quebec has financed, by the Fond Educ'alcool, an educational work, specifically aimed at the young in the scope of a personal and social development programme of National Quebecoise Education (50, 72).

The neuro-sensorial relations contribute to our representation of the work and the relations we have with it (85). It is one of the reasons that made France, put an education to taste into schools (51). Undertaken for several years, in the level of national education, this programme contributes to the personal and language development of the child (45). The effect of this on the prevention of risks from alcohol remains to be seen (79, 88).

CONCLUSIONS

In the light of the preceding information it has become of primary importance to follow our work to precise the beneficial effects of a consumption of wine in the function of doses and the circumstances of incorporation. Wine is integrated in the field of food which is a complex act.

The act of eating, most often in the form of a meal, is a preferred place to talk and to educate. Amongst the determining healthy characteristics of a meal one can cite the times, the regularity, the rythm and the nutritional calorific equilibrium.

The act of eating is "complete". It can be subjected to reductions and mutilation by methodological constraints by those who study it. A. Richards quoted by Claude Fishler (75).

An interdisciplinary approach in the spirit of responsibility and solidarity is imposed on the field of the true partnership (4).

A doctor confronted with suffering created by human complexity (E. Morin in 78) cannot alone solve all the problems (2).

Alcoholology and not "alcoholismology" (77) is a discipline resolutely open to other posts of society.

In being interested in these questions, the experts and the professionals of the vitivincultural sector should give significance to the Agreement of the 29th November 1924 (76) founding the Office International de la Vigne et du Vin defining its mission which is amongst others:

- a) *the OIV has as its task the gathering, studying and publishing information of a nature that demonstrates the beneficial effects of wine,*
- b) *devising an informative programme displaying new scientific experiments needed to show the benefits of wine to health, and its influence in the prevention of alcoholism.*

We think we have contributed to it in the present report.

"The concious decision by a man's will not to abuse is surely stronger than any law" (84), Jean Trémolières,

and Montaigne affirmed "temperance and moderation are not the pest of pleasure but its seasoning".

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PRODUCT COMMITTEE

INTERGOVERNMENTAL GROUP ON VITIVINICULTURAL PRODUCTS

**Sixth Sitting, Santiago (Chile),
5-9 September 1994**

WINE CONSUMPTION AND HEALTH (Study prepared jointly by the FAO and the OIV)

GENERAL PRESENTATION

Within the context of the cooperation instigated with the United Nations Organisation for Food and Agricultural (FAO), the FAO intergovernmental group on vitivinicultural products, to which the OIV is associated, at its 6th sitting, 5-9 September, 1994, at Santiago, Chile, stressed matters relating to wine and health.

In order to better understand and have the use of concrete scientific information, the work group asked three experts to collect information on actual current knowledge which has been based on research work.

Also, for the first time, the OIV has published the Minutes of this group concerning health and wine consumption.

SUBJECTS COVERED

The subjects covered by these documents are as follows:

1. Wine-Health-Society (CCP: WI 94/CRS.6) by J.P. David, member of the OIV expert group "Nutrition and Health". Publication in the "Bulletin de l'O.I.V." of January-February 1995.

2. Summary of research results relating to moderate wine consumption (CCP: WI 94/CRS.5) by Mrs E. Holmgren, Director of Research and Training of the Wine Institute. Publication in this issue.

3. Wine and innocuousness of foodstuffs (CCP: WI 94/CRS.4) by Mrs S. Brun, Professor, Département de pharmacie, Montpellier. Publication in this issue.

Wine and Food Safety

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KEY WORDS: *Wine, food safety, health, consumption, innocuousness, enological practices.*

ABSTRACT

This document evokes the questions which consumers ask concerning the effects of moderate wine consumption on health and hygiene. The concept of the innocuousness of foodstuffs is illustrated. As far as wine is concerned, this innocuousness is based on appropriate enological practice and a composition check. These questions have been and still are being dealt with in many international instances, notably the OIV. The international quality standards accepted and the agreed analyses methods play an increasingly important role in international trade and use at national level offers consumers a certain security.

At the 5th meeting of the FAO intergovernmental group on wine and vine products, the factors influencing the consumption of wine and stopping the decline of consumption in traditional wine-consuming countries were the main concerns.

Amongst these factors, it was noted in a number of countries that there was a tendency to discourage the consumption of alcoholic beverages, including wine, of which the average alcohol content of 11-12 %, is a secondary constituent. Thus, alcohol content can be a restraining factor in wine consumption. Dr David's report analysed the different sides of this fundamental problem.

It must be remembered that alcohol is an indispensable constituent of wine. It plays a part, obtaining numerous soluble constituents of the grape and plays a major role in the original organoleptic equilibrium. However, wine is also rich in other constituents, whose presence must be taken into account. Amongst these, the phenolic compounds are the most characteristic, whose role in the constitution of the wine, is to add colour and robustness or body and also specific biological properties to these compounds. They will always be intuitively sensed.

J. Masquelier is amongst the first, if not the first to study these properties, notably the proanthocyanidols, of the tannin family. His studies were carried out on the extraction of the pip from the grape, where it is particularly rich, as an active element in the pharmaceutical field, and effective as a cardio-vascular protector.

What is the method of action of these phenolic compounds? Are they actively dispersed in the wine?

Epidemiologic tests show that wine consumption, coupled with a Mediterranean diet, intervenes in the low mortality rate of cardio-vascular illnesses and in the longevity of the populations concerned, probably related to the unrestricted antiradical properties, recognised as responsible for aging.

Mrs. Holmgren's report () made a point on the most recent studies whose results concur with these hypotheses. After the current conclusive studies have been made as well as validated, their confirmation will constitute a positive factor in influencing moderate wine consumption.*

Another factor is that wine meets consumer's qualitative needs.

The first of these particularities is that shown by the organoleptic characteristics linked to a corresponding equilibrium in the composition of wine; the origin of pleasure. This is a result of a well-thought out study of the vine and in the winery, of the viticultural holding on newly adapted material, of diverse and potential interventions in the chain of wine manufacture. Its natural character, without deceiving the consumer, must be respected.

With this preoccupation of intrinsic quality, are linked the concerns of health and hygiene. We speak of "food safety" defined as a situation in which there is an absence of danger in food or drink under all the conditions in which it is made or supplied.

Explaining how security is assured in food, fulfills consumer expectations and constitutes a ready-market in the communication of the product.

In the case of wine, one cannot obviously speak of security, except in the case of moderate consumption.

The security goes through:

- the choice and method of enological practices and processes,*
- the control of composition and interpretation of wine.*

ENOLOGICAL PRACTICES AND PROCESSES

A wine obtained without any physical and chemical processes is nothing more than bad vinegar. It is necessary to have the means to administer the vinification, to protect the wine against microbic or chemical alterations of which it can be a victim. It has been over a century since Pasteur showed several methods of obtaining sound and pleasing wines. Since then, legislative and statutory texts have been imposed in different countries stipulating authorised practices and processes for musts and wines.

() See page 192 in this issue.*

The OIV has played an important role in their harmonisation by the work undertaken for numerous years and written down in the "Code", a reference document, constantly updated and amended as soon as new standards are made. The great interest in this work is in the OIV advice on each of these practices, conveying the majority opinion, most often the unanimous one of the member states of the organisation.

When various products, chemical or natural, have to be used, as additives or auxiliary technology in food products, they must conform to specifications of identity and purity. The International Enological Codex of the OIV, which was first published in 1963, brings together these specifications as well as the efficiency tests for enological products. It was taken up in the national regulations of several countries. In France, it has been included in the pharmacopiea.

It should be stressed that efforts taken in the manufacture and the conservation of wines is aimed at restricting justifications for their use and substitution, at every possible opportunity. Physical processes to conserve the maximum natural character of the wine and environmental considerations can equally intervene in the choice for limiting pollution from the cellar's discharge.

CONTROL OF THE COMPOSITION AND INTERPRETATION OF WINE

METHODS OF ANALYSIS

Quality controls of wines are more and more demanding due to commercial transactions. The harmonisation of methods of analysis assumes primary importance and constitutes one of the principal objectives of the OIV since its beginning. The creation in 1951 of the Formal Sub-Commission for the Unification of Analysis Methods and Valuation of Wines, which has since met annually, constitutes proof of this interest. The accomplished work was published in 1962 in the Compendium of International Wine Analysis Methods. Several amended and updated editions followed. The last edition (1990) also covered musts. This compendium sets out numerous national methods, and its reading is facilitated by translation into several languages. The EU has based its Regulation 2676/90 on the described methods.

All of the work on standardisation accomplished by the OIV and that on analytical methods that we are concerned with here, has been recognised by the Codex Alimentarius Commission which gave up establishing standards for wine. The OIV remains in close liaison with Codex Alimentarius by participating in the meetings which it organises on methods of analysis and sampling.

The OIV also participates in inter-organisational meetings which have led it to install a group, responsible to the AOAC and other international organisations (IUPAC, ISO...), with the harmonisation of procedures of

interlaboratorial experiments with a view to mutual recognition of wines and spirits analysis methods. This has been done for collaborative analysis and statistical tests in the field of precise procedure in the OIV Compendium (1990 edition).

QUALITY CONTROLS AND INTERPRETATION OF RESULTS

These controls can be considered under two aspects:

- the control of the intrinsic quality of wine, linked to its authenticity, its true character and marketability,*
- the control of the hygienic quality of wine linked to research for mineral and organic contaminants.*

The methods have been defined; what is left is interpretation of the results for each of the two cases consideration according to which standards they are or are not organised:

Reference to standards

The interpretation of results is made easier if the standards of composition are set out (alcohol level indicated on the label) but more especially if the health and phytosanitary standards are.

In effect, for contaminants and residues, the sensitivity of analysis methods is always increasing allowing the bringing into evidence smaller and smaller levels of concentration. Interpretation must not be made on the determined concentration but on a level where a risk is introduced to the consumer. The existence of standards by toxicologists is of primary importance. The FAO/WHO conference held in 1991 on "alimentary standards, chemical substances in food and the business of foodstuffs" concluded on the necessity of these standards. The opinion that contamination occupied an important place in the field of hindering free trade, which is, after all in the domain of wine and particularly that of the OIV, isn't it?

Annexe C of the Compendium of International Methods on Wine Analysis Methods gives the maximum limits recognised as acceptable; these concern the components of wine of which a high level is a sign of microbic alteration, of misused or prohibited process of pollution...

The OIV has recommended maximum levels for mineral contaminants, after long studies and inquiries in different countries and taking into account the acceptable daily doses in human food, fixed by the toxicologists of the large international authorities (Codex Alimentarius). These limits in annexe C of the Compendium constitute a valuable reference and have often been reprinted into national regulations.

The mineral contaminants content limits, impose constraints all the way through the wine-making process which must register inert materials.

OIV Advice

Reference to standards is not always possible, in particular to those which are the constituent elements of wine. The variability of the constituents, made in the grape by complex biological processes is dependent on a number of phytotechnical parameters; grape variety, environment, cultural conditions and the weather, ... if these factors are not taken into account analytical interpretation will be wrong. Only collaboration between specialists, who understand wine, relying on the results of studies carried out in diverse conditions, and can lead to suggested methods of interpretation adapted according to current knowledge. The scientific position of the experts is given in the form of advice in annexe D of the Compendium.

To complete and conclude the numerous provisions enumerated above, the OIV adopted, in 1989, a resolution asking states, for questions on interpretation of analysis which hinder the wine industry, outside emergency cases of public health, taking into account the work and advice of its experts and above all taking an unilateral position. A resolution at the last General Assembly (June 1994) renewed this plea.

In this way, wine consumed most often with meals, can respond to the demands on quality and security that is made on all food without these demands being considered as deliberate obstacles to trade but, on the contrary, as constituting a positive factor influencing the consumption of wine.



Les avis de l'O.I.V.

La référence à des normes n'est pas toujours possible, en particulier en ce qui concerne les éléments constitutifs des vins. La variabilité de la teneur en ces composés, issus du raisin par des processus biologiques complexes sous la dépendance de nombreux paramètres phytotechniques : cépages, milieu, conditions de culture et météorologiques, ... peut-être grande et à l'origine, si l'on ne tient pas compte de cette diversité, d'interprétations analytiques erronées. Seule la concertation entre spécialistes, connaissant bien le vin, s'appuyant sur les résultats de recherches effectuées dans ces diverses conditions, peut conduire à proposer des modes d'interprétation adaptés selon l'état des connaissances actuelles. Ces prises de position scientifiques des experts sont données sous forme d'avis dans l'annexe D du Recueil.

Pour compléter et faire aboutir les dispositions énumérées ci-dessus, l'O.I.V. a adopté, en 1989, une résolution demandant aux États, pour toute question d'interprétation d'analyse qui entrave le commerce du vin, en dehors bien sûr de cas d'urgence en matière de santé publique, de prendre en compte les travaux et avis de ses experts avant toute prise de position unilatérale. Une résolution adoptée lors de la dernière Assemblée Générale (juin 1994) renouvelle cette exhortation.

Ainsi le vin, consommé le plus souvent au cours du repas, peut répondre aux exigences de qualité et de sécurité comme cela est demandé à tout aliment sans que ces exigences puissent être considérées comme des obstacles délibérés au commerce mais, au contraire, constituent un facteur positif influençant la consommation du vin.

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Summary of Research Results relating to Moderate Wine Consumption

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KEY WORDS: *Wine, alcohol, cardio-vascular diseases, French Paradox, Mediterranean diet, dietary factors.*

ABSTRACT

This report draws a quick table of principal conclusions on recently led research on the benefits of a moderate wine consumption, notably, but not only, in connection with heart disease. Researchers stress that in this area, moderation is the key to health, as it is well-known that alcohol abuse can harmful to health. Researchers equally show the beneficial effects of wine consumption during family meals.

I. - BACKGROUND

This paper is a follow-up to the request made by the 6th session of the Intergovernmental Group on Wine and Vine Products of the Food and Agricultural Organization of the United Nations (FAO). The Group noted that "health concerns of consumers had lead to the promotion in certain countries of the image of wine as a product which, if consumed in moderation, was not only damaging to health, but also had beneficial health aspects". The Group requested that information be collected regarding the views of the medical profession on wine consumption to contribute to a better understanding of the health concerns involved.

The following paper outlines the latest scientific research findings with respect to moderate consumption of alcohol, and specifically wine. The adverse effects of excessive consumption are widely documented and well known to cause considerable damage to individuals and society.

In summary, this paper shows that wine is most often consumed moderately and responsibly and can be part of a healthy well-balanced diet for healthy adult consumers.

II. - WINE, CULTURE AND SOCIETY

The concept of wine consumed in moderation during regular mealtimes as part of a nutritionally balanced diet, constitutes the basis for considering the resulting health effects. The overwhelming majority of consumers drink wine moderately and responsibly. For example, in the United States research data published in the Journal of Studies on Alcohol report that 75 % of wine drinking takes place in the home, predominantly with meals. This and other studies find that wine consumers drink on average no more than 1.5 glasses of wine at any given occasion and approximately 4.5 glasses of wine during any given week. Other studies have pointed out that wine consumers, specifically with respect to drunk driving, are very responsible consumers. A US Government survey by the National Department of Justice found that of those people arrested for drunk driving only 2 % had consumed wine only.

III. - ALCOHOL, HEALTH AND LIFE EXPECTANCY

Wine deserves its prominent place in many cultures as a unique beverage compatible with moderation, fitness and a well-balanced lifestyle. The following outlines key findings in various important subject areas, from coronary heart disease to antioxidants in wine.

A. Longevity and the U-Shaped Curve

In trying to unlock the secrets of health and longevity, medical researchers often compare large population groups. They study the rate, causes and ages at the time of death in each group and then try to determine which, if any, lifestyle factors, such as diet and exercise, might account for the differences. From these comparisons around the globe, scientists develop theories about factors that may influence human health. In many studies, alcohol and wine have been found to play a role in longevity. When such data examining alcohol consumption and mortality rates are arranged in a graph, the pattern that emerges from most of the studies resembles a J or a U. This is known as the J- or U-shaped curve phenomenon. What this generally describes is that people who consume alcohol moderately have a lower rate of mortality from all causes than people at either extreme, i.e., those who abstain and those who drink to excess. Heavy drinkers are known to have a mortality rate higher than that of moderate drinkers. But it was only relatively recently that scientists determined that abstainers also have a mortality rate higher than moderate drinkers. This theory was confirmed in 1980 in a classic large scale scientific investigation known as The Honolulu Heart Study. The study found that the rate of coronary heart disease decreased by about 50 % with moderate drinking.

One of the largest studies on alcohol consumption and longevity was conducted by the Kaiser Permanente Hospital Health Plan and published in The Annals of Internal Medicine in 1981. Over 8,000 people were monitored for 10 years. The results showed that moderate drinkers (up to two drinks per day) live longer and are about 27 % less likely to die prematurely than either abstainers or heavy drinkers. Another landmark study published in Alcoholism in 1985 concluded, "Alcohol consumption is related to total mortality in a U shaped manner... Clearly, the results imply that moderate consumption, up to one to two drinks a day, is not detrimental and may, in fact, be beneficial for longevity". More recently, a 1990 American Cancer Society study found that people who consume alcohol moderately have a lower rate of mortality from all causes than people at either extreme; i.e., those who abstain and those who drink to excess. In 1993, a US government-funded analysis of the National Health and Nutrition Examination Survey found that in white men, "Moderate drinking increases time until death from any cause by about 3 %".

B. Alcohol and Coronary Heart Disease

Why do moderate consumers of alcohol live longer? There may be many factors related both directly and indirectly to lifestyle patterns. One factor having strong scientific support at present is that moderate consumption of alcohol apparently exerts a protective effect against the development of coronary heart disease. While heart disease rates are lower in developing countries that subsist on grain and vegetable diets, in most western nations where diets are high in fat from meat and dairy products, heart disease is the leading cause of death.

Since 1990, more than a dozen large population studies have reported that individuals who normally consume light to moderate amounts of alcohol have lower rates of heart disease. In one of the most extensive studies to date, the Harvard Health Professionals Follow-Up Study, scientists at Harvard University tracked 44,059 male professionals ranging in age from 40 to 75 for 10 years. The results, published in The New England Journal of Medicine, showed that, after adjustments for other known coronary risk factors, moderate consumption of alcohol was related to a 37 % reduced incidence of coronary disease. In another recently published study in Epidemiology, Lawrence Garfinkel and Paulo Boffetta, monitoring 276,802 American men for 12 years, found those who had initially reported that they consumed an

average of 1-3 drinks per day were less likely to die during the study period than men who reported abstinence. This finding was reported as due primarily to less heart disease among the moderate alcohol consumers.

Similar results also have been shown in studies using female subjects. Harvard University scientists analyzed data on 87,526 middle-aged women over a four-year period. Their results, published in The New England Journal of Medicine in 1988, determined that women who consumed about one drink per day had approximately half the risk of coronary heart disease of non-drinkers. Scientists in the United Kingdom, writing in the British Medical Journal in 1992, found consumption of up to two drinks per day to be associated with lower levels of cardiovascular risk factors in women. A study by researchers at Harvard University School of Medicine published in The New England Journal of Medicine in 1993, reported that those who have 1-3 drinks daily may cut their heart attack risk in half. Other researchers at Harvard published in the same journal in 1992 an analysis of 200 studies stating that moderate alcohol consumption is one of nine best ways to cut heart attack risk and is associated with a 25 to 45 % reduced risk of coronary heart disease. Another recent study published in the American Heart Association's journal, Stroke, reports that lifelong abstainers more than doubled their risk of stroke as compared to moderate drinkers.

IV. - MECHANISMS BEHIND ALCOHOL'S REPORTED PROTECTIVE EFFECT

Several mechanisms have been suggested by scientists to explain alcohol's apparent protective effect, including:

- 1. Increasing the level of high-density lipoprotein (HDL), the "good cholesterol". Elevated HDL levels are found in moderate alcohol drinkers. Scientists believe that HDL reduces the risk of heart disease by transporting cholesterol from arteries and aiding in its elimination from the body.*
- 2. Decreasing low-density lipoprotein (LDL) cholesterol. LDL cholesterol is thought to be a potentially more dangerous form of cholesterol carrier because it breaks apart easily, leaving particles of cholesterol circulating in the blood stream that may adhere to artery walls and contribute to blockage.*
- 3. Decreasing the tendency of certain types of blood cells, called platelets, to form clots. Blood clots that close off arteries that feed the heart can lead to a heart attack.*

In post-menopausal women, the apparent protective effect of alcohol may be explained in part by an alcohol-induced increase of estrogen levels, according to a study published in Alcoholism Clinical and Experimental Research in 1992.

Scientists, following residents of Framingham, Massachusetts on an ongoing basis in order to learn more about heart disease in America, found that men and women who drink moderately have statistically significant lower rates of coronary heart disease than non-drinkers due, in part, to elevated HDL levels. Another more recent study found that two important forms of HDL, HDL2 and HDL3, were increased by moderate alcohol consumption. These findings were published by a Harvard University research team in The New England Journal of Medicine. Another recent study published in the British Medical Journal reported that moderate alcohol consumption at mealtime inhibits blood clotting which otherwise might be caused by fats in the foods consumed.

V. - WINE, DIET AND HEALTH

While most of the initial findings are generic to alcoholic beverages, some recent studies are wine-specific and focus on such areas as the health traits of wine consumers and non-alcohol compounds found in wine. Cross-cultural studies are essential in attempting to identify lifestyle factors defined as risk protectors. Research has shown that heart disease rates are much lower in countries where regular, moderate wine consumption is the norm compared to countries where other types of alcohol are more commonly consumed.

A. Lifestyle and Dietary Factors

In one of the first classic cross-cultural studies, A.S. St. Leger examined heart disease rates for 18 western countries and reported in The Lancet in 1979 that, of the dietary and lifestyle factors studied, wine consumption showed the greatest inverse relationship to heart disease. In his study, France had the highest per capita intake of wine and the lowest rate of heart disease, while per capita wine consumption in the United States was among the lowest and its heart disease death rate was among the highest. In late 1991, scientific investigations that had been following up on this preliminary work received a great deal of media attention when it was revealed that the French consume more saturated fats an exercise less than Americans yet have a much lower risk of heart disease. "In France the death rate from heart di-

sease is 95 per 100,000 middle aged men, according to the World Health Organization (WHO). In the United States it's more than twice as high: 256 per 100,000 " cites a recent article on the subject.

The earlier findings by St. Leger have been updated by Michael Criqui from the University of California, San Diego. He and his colleagues found that nearly 15 years later, moderate wine consumption is the most consistent lifestyle and dietary factor associated with a reduced risk of coronary heart disease when looking at many countries around the world. This phenomenon has come to be known as the "French Paradox". Researchers attribute the healthier arteries in France to lifestyle factors such as eating well-prepared, leisurely meals with no between meal snacks. These meals tend to include ample fresh fruits, vegetables, cheese and olive oil, as well as moderate amounts of alcohol, mostly in the form of wine, as a mealtime beverage.

In addition, a study published in The American Journal of Cardiology reported positive health effects for consumers of both white and red wine and suggested that wine consumers' favorable health traits also play a role in their reduced rate of heart disease.

B. French Paradox and Mediterranean Diet Pyramid

Leading French government scientists also involved in studying this situation recently reviewed World Health Organization statistics and found that men in Toulouse had a 57% lower rate of heart disease mortality before age 64 than men in Stanford, California, and a 79% lower risk than men Belfast and Glasgow in the UK. They state in The Lancet, "If this degree of prevention is due largely to alcohol drinking, it can be speculated that wine should have a greater protective effect than other kinds of alcoholic beverages, because the consumption of wine, but not of other alcoholic drinks, although not yet reported, is expected to be small in Belfast and Glasgow compared with Toulouse".

One lifestyle component of the French Paradox is a regional dietary pattern known as the Mediterranean Diet. Moderate consumption of wine with meals based on legumes, olive oil, whole grains, fish and fresh fruits and vegetables has been suggested as one reason for the lower heart disease rates found in southern Europe including Greece, Spain, Portugal, France and Italy. Recently, scientists from Harvard School of Public Health drafted a set of dietary guidelines, including moderate wine drinking, modelled on the

traditional diets of the Mediterranean. "Following Mediterranean tradition, wine can be enjoyed in moderation (1-2 glasses per day) primarily with meals; it should be considered optional and avoided wherever consumption would put the individual or others at risk", the guidelines state. Walter Willett, M.D., chairman of the Department of Nutrition at Harvard School of Public Health, who introduced the guidelines in 1993 stated, "Wine consumption is optional but it can't be forgotten as an important part of the Mediterranean Diet... Almost certainly moderate wine consumption is an important contributor to the lower risk of coronary heart disease in that population".

The Mediterranean Diet Pyramid, based on Harvard's recommendations, include moderate daily wine consumption, suggested as one glass for a woman and 1-2 glasses for a man, which may reduce the risk of coronary heart disease and increase overall life expectancy. This healthy dietary concept has been acknowledged by researchers around the world and has led the World Health Organization's European Regional Office to support the Pyramid as a conceptual framework for healthy eating.

C. Compounds in Wine and Antioxidative Properties

Scientists investigating the role of wine and diet in relation to heart disease risk recently have started to study non-alcohol components found in wine for their possible cholesterol-lowering effects. In fact, researchers have found that many of these compounds act as antioxidants inhibiting the biochemical reactions that cause obstruction of the arteries and heart attacks. A 1990 study by French scientist Martine Seigneur was among the first to suggest that wine's unique composition may be a characteristic contributing to its positive effects.

Recently, a group of organic compounds with potentially exciting properties were identified in wine. This group, called phenols, which include tannins, are found in grape skins and are well-known for building subtle flavors and essences as well as adding color to wine. Now it appears that this group of compounds may contribute, as well, to some of its reported health benefits. A key grape phenol under investigation is quercetin. Terrance Leighton, Ph.D., a microbiologist at the University of California Berkeley, recently identified quercetin as also present in other fruits and vegetables. A study published in The Lancet reported that quercetin has strong antioxidant properties lowering risk of heart disease and cancer.

Researchers at the University of California, Davis currently are studying quercetin and other phenolic compounds found in wine and their possible role in disease prevention. A study recently published by these resear-

chers found that several antioxidants in wine were more effective than Vitamin E, currently the best known antioxidant, in preventing *in vitro* oxidation of LDL. The investigators compared Vitamin E to resveratrol, quercetin and epicatechin, all phenolic compounds found in wine, to see which antioxidants best protected LDL cholesterol from oxidation. In a surprising development, quercetin and epicatechin were both twice as powerful as resveratrol and all three of them were much more effective than Vitamin E in preventing LDL cholesterol from being oxidized. The researchers suggest that the combination of phenolic compounds in wine may perform antioxidative functions that may protect against atherosclerosis over a prolonged period of consumption.

The investigators also have reported that these key phenolic compounds with antioxidative properties are more prevalent in wine than in fruits and fruit juices, including apple, grape and orange juice. In addition, this research team and others have demonstrated that the phenolic compounds in wine are absorbed into the human bloodstream, a question that has been raised by other researchers. These new findings will be published soon.

VI. – ADDITIONAL HEALTH BENEFITS ASSOCIATED WITH MODERATE ALCOHOL CONSUMPTION

Other scientific studies have revealed additional health benefits associated with moderate alcohol beverage consumption. A 1992 issue of NIAAA's (National Institute on Alcohol Abuse and Alcoholism) Alcohol Alert acknowledged not only the cardiovascular benefits of moderate drinking but also associated psychological benefits with it as well. That report referred to a review of the literature which suggested that lower levels of alcohol consumption can reduce stress; promote conviviality and pleasant, carefree feelings; and decrease tension, anxiety, and self-consciousness. One of the reports references, published and co-authored by Enoch Gordis, Director of NIAAA states that moderate drinking among the elderly stimulates appetite, promotes regular bowel functions and improves mood.

Controlled studies in hospital and nursing home settings have found that as little as two ounces of wine with dinner or an afternoon snack have a favorable influence on self-esteem, mood and sociability of older Americans. In one study, nursing home residents who received wine showed more group involvement and social participation than those who did not. In another study, moderate wine drinkers developed a more positive outlook than those who did not drink wine.

Some wine drinking subjects showed improved sleeping and blood pressure patterns. In the book, Alcohol and Old Age, Robert Kastenbaum, Ph.D., a renowned gerontologist, states, "Moderate use of wine within a conducive

environment helps to restore the older person's sense of continuity with his earlier life, reinstates him to personal worth and competence and makes him a more appealing and interesting individual in the eyes of others". In a study conducted to evaluate the best predictors of healthy aging and longevity J.M. Guralnik, M.D., of the National Institute on Aging, reported that, "Among the health practices, non-smoking, having moderate weight, moderate alcohol consumption and eating breakfast regularly, were all significantly associated with higher functioning".

In addition, other benefits have been reported for moderate drinking. Recent studies published in peer-reviewed journals found that

- a) for elderly male twins, those who had one or two drinks each day had slightly better reasoning ability than their siblings who drank more or less;*
- b) lifelong elderly moderate drinkers have greater bone density than their non-drinking counterparts and may be at a reduced risk for osteoporosis;*
- c) moderate alcohol consumers are less likely to get depressed when under stress than either abstainers or abusers and*
- d) adults, who were non-smokers and regular consumers of moderate amounts of alcohol, were more resistant to five strains of common cold viruses than non-drinkers.*

The potential health benefits of moderate consumption are also supported by some social science studies. For example, a study appearing in the journal Addiction, reported that people who consumed moderate amounts of alcohol were less likely to be absent from work due to illness than either abstainers or heavy drinkers.

A 1990 analysis of beverage preferences and medical records of 53,000 people enrolled with the Kaiser Permanente Health Plan in California, found that wine-drinkers smoke less, are less likely to be overweight, or have a history of drinking problems and are at a reduced risk for many health problems.

VII. - ALCOHOL AND OTHER LIFESTYLE ISSUES

Chronic heavy drinking during pregnancy can possibly cause damage to the unborn child, a condition known as Fetal Alcohol Syndrome (FAS).

Medical scientists debate whether alcohol abuse alone, or in concert with nutritional deficiency, smoking and, possibly, metabolic factors cause the harm.

Most American health professionals advise against any alcohol intake during pregnancy, yet physicians in many other countries do not recommend against light wine consumption.

Studies recently published concerning FAS have found no statistically significant relationship between moderate alcohol consumption among pregnant women and Fetal Alcohol Syndrome.

More recent research has shown that drinking by pregnant women has decreased by over 30 % and that women do not drink more than 1-2 glasses in any given month on average.

Recently, two prominent FAS researchers reported in the journal Alcoholism Clinical and Experimental Research, that their statistics on FAS incidence had been overstated and were six times too high. The review of new and more accurate data in 1991, prompted the researchers to revise their estimate of annual FAS cases in the United States downward from 7,000 out of approximately 3.6 million live births, to 1,200 cases per year.

Another concern that has been raised is the issue of alcohol and breast cancer. Dozens of other stories have looked at the effect of alcohol consumption on breast cancer and researchers have stressed that results are inconclusive. In fact, researchers report that:

- a) many studies show an association only for heavy drinking,*
- b) some studies show only a weak association,*
- c) others show no association, and*
- d) some show different effects for different beverages.*

In 1987, one study published in The New England Journal of Medicine, associated alcohol consumption with a small increase in the risk of breast cancer.

This story received attention in the media, but later studies refuting this finding did not. For example, The Framingham Heart Study, which studies the health of the inhabitants of Framingham, Massachusetts on an ongoing basis, reported in 1989 that there was no increased risk of breast cancer among moderate alcohol consumers in their study.

A Department of Health and Human Services (DHHS) study, which surveyed 3,000 women with breast cancer and 3,000 women without breast cancer on their drinking habits found that the use of alcohol was unrelated to breast cancer for those drinking 1-2 drinks per week. Findings in yet another study published in 1990 in The International Journal of Cancer found no cause and effect relationship between moderate alcohol consumption and cancer. The same researchers who had originally suggested that there might be an increased breast cancer risk associated with moderate alcohol consumption wrote one year later in the same journal; "In the United States,

heart disease causes 38 % of death in women; far more than breast cancer – four percent, or stroke – 10 %. The net effect of moderate alcohol intake might therefore be expected to be beneficial but more data is required ”. Dr. Lynn Rosenberg, who has published several articles on this subject, has noted that, while some studies associate moderate alcohol consumption with a small increased risk of breast cancer, the association is weak and the data is inconsistent and inconclusive. Several researchers recommended women make individual decisions about consuming wine based on their health status and lifestyle risk factors. Most epidemiological studies point out that moderate alcohol and wine consumption is associated with a significant increase in overall life expectancy for men and women alike. It is clear that an in-depth risk / benefit analysis needs to be conducted.

VIII. – RESEARCH ON WINE, ALCOHOL AND HEALTH FROM AROUND THE WORLD

A. Moderation Guidelines

How much wine can a healthy adult man or women consume according to recommendations from different countries around the world? Organizations in various countries provide guidelines for men and women who choose to drink. The United States Department of Agriculture (USDA) Dietary Guidelines recommend the alcohol equivalent of no more than 2 glasses of wine per day for a man and 1 glass of wine for a woman. A drink of wine is defined as one 5 ounce glass. However, interesting differences emerge when the US guidelines are compared to those of some European countries. In fact, the German health insurance companies and independent physicians recommend a daily limit of up to 3-5 glasses of wine for a man and up to 1.5-3 glasses of wine for a woman. The French Academy of Medicine recommends a daily average of 5 glasses of wine for a man and 3.5 glasses of wine for women. In addition, the French guideline states that manual workers can have an average of 7 glasses of wine per day. When compared with other industrialized nations, US alcohol intake guidelines are restrictive, especially for women, according to data from the London-based Centre for Information on Beverage Alcohol (CBA).

“ What are recommended daily drinking levels anyway? Are they biologically based? Apparently not. If one looks at this data, it becomes clear that these guidelines are very arbitrary and rooted more in the particular ideo-

logy and culture of a given society", commented sociologist David Pittman, Ph.D., an authority on alcohol patterns and perceptions around the world.

Interestingly, in Japan the recommended limit by the Ministry of Health and Welfare for men is the equivalent of 3.2 glasses of wine per day. According to statistics recently published in Health magazine, the Japanese annually drink three times as much alcohol per capita as Americans, 6.2 gallons per person versus 2.8. The Japanese also enjoy the industrialized world's lowest rate of heart disease.

B. International Research Perspective

Research on moderate alcohol beverage consumption, wine consumption, and increased life expectancy has been conducted in countries around the world. However, some of the most significant studies have been conducted in the United States, specifically at the Harvard School of Public Health, associating moderate alcohol consumption with a reduced risk of heart disease. Other countries around the world, such as France, Italy, Spain, Australia, Japan, Canada and the Netherlands also have looked at the potential positive effects of moderate alcohol and wine consumption.

In France, most of the research on alcohol and health is conducted by INSERM (National Institute on Health Research) under the direction of Professor Serge Renaud. One research team there is looking at alcohol's and wine's effect on inhibiting platelet activity as an explanation for the so-called French Paradox. This team believes that wine taken with meals counters possible negative effects of saturated fat intake. Other ongoing research is exploring antioxidant content in the French diet and its relationship to wine consumption as well as high vegetable and fruit intake. Also in France, one of the regional centers of the World Health Organization is analyzing MONICA project data confirming that in the French regions where wine is exclusively consumed, people had lower levels of fatty acids in their blood and were at a reduced risk for coronary heart disease.

In Italy, research is conducted under the direction of the Italian National Research Council (CNR) located in Rome. Researchers there have investigated:

- a) the effect of alcohol consumption on overall mortality;
- b) Mediterranean diet (including wine) and relationship to low rates of coronary heart disease;
- c) moderate alcohol consumption and relationship to increased high density lipoprotein and
- d) fibrenogens levels.

Finland is the site of some of the most significant positive findings on beneficial effects of moderate alcohol consumption. Epidemiological studies in Finland have examined the effect of various dietary factors on risk for coronary artery disease. One of the largest ongoing studies is the Kuopio Ischemic Heart Disease Risk Factor Study. Data has been published reporting that no alcohol consumption is inversely related with the development of arterialsclerosis.

Research work is also being conducted by many prominent alcohol researchers in the United Kingdom, including over 80 research organizations in England, Wales and Scotland. Several researchers in England had challenged the validity of the U-shaped curve but their theory has been refuted by many new studies. Other research teams in the United Kingdom have confirmed the positive correlation between moderate alcohol beverage consumption and increased life expectancy. A more recent study found that wine antioxidants are absorbed into the human bloodstream contributing to a reduced risk of coronary heart disease.

IX. - CONCLUSION

As a main result of all studies referred to, researchers stress that moderation is the key for healthy adult alcohol consumers. It is well-known that alcohol abuse can cause serious health consequences but it has to be acknowledged that the overwhelming majority consumes alcohol beverages, and specifically wine, moderately and responsibly. Studies show that in seven European regions where moderate wine consumption is the norm, there is not only a reduced risk of coronary heart disease but often a relatively low incidence of alcohol abuse as well. Research also shows that wine consumers are moderate and responsible drinkers who consume wine primarily with food in home based mealtime settings. These findings should reassure not only those who already enjoy wine in moderation, but those who are considering wine as part of their lifestyle.

Alcohol and wine's effect on coronary health, and overall general health, will continue to be the subject of study over the next decade. In the meantime, many experts believe that the information already available should be considered in public policy deliberations and made public to consumers so that they can make informed dietary decisions. It is hoped that logic, reason, custom and tradition will prevail in countries around the world so that consumers everywhere can continue to enjoy the many unique and delightful aspects of wine as part of a pleasant meal.

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CONCLUSIONS AND PERSPECTIVES OF THE INTERGOVERNMENTAL GROUP ON VITIVINICULTURAL PRODUCTS OF THE FAO

In assessing the factors having a possible influence on consumption, the Group considered the impact of health concerns. It noted that while differing social and economic factors and wine consuming traditions contributed to the downward trend in global consumption, rising concern over adverse health effects was one factor, albeit of potentially great significance, which might further depress markets. The Group considered that established international standards, notably those developed by the OIV, provided and assurance of the sound composition of wine, and could contribute to halting the above trend.

Because of the damaging effects of alcoholism, the Group noted that the trend in many countries was to actively discourage consumption of alcoholic beverages. However, such campaigns were often emotive in nature and not substantiated by adequate scientific evidence. The Group welcomed the information provided to it through FAO-OIV cooperation, in response to the request formulated at its Fifth Session for information regarding the views of the medical profession concerning wine consumption.

The Group noted that medical publications had, in the last ten years, indicated that moderate alcohol consumption exerted a favourable effect on health. A "U" shaped curve of global mortality was associated with levels of alcohol consumption. Moreover, the Group was informed that among the numerous components of wine, tannin and phenolic compounds were potentially at the origin of the beneficial properties of wine. However, research was still needed to establish the exact role of the components and their effects, beneficial or not, in addition to those of alcohol. Moreover, the determination of the amounts of alcohol which could be consumed without risk was a delicate task since the effects of alcohol and wine were determined above all by genetic characteristics and the circumstances under which consumption occurred. Scientific evidence suggested that wine (and alcohol) had beneficial effects within the framework of a balanced diet.

The Group noted with interest that on the basis of new concepts about the reaction of family and acquaintances to alcoholism in their midst, one could explain in part the drop in consumption.

The Group took note with interest of the actions so far taken under the auspices of the OIV and the World Health Organization (WHO) to address health concerns. It recalled in particular the Eno 3/93 Resolution of the OIV and the WHO 1992 plan of action against alcoholism developed by the WHO Regional Bureau for Europe. It supported these actions in so far as they tended to encourage conditions that reinforce the motivation and the capacity of the individual to avoid dangerous practices as concerns alcohol and to suggest that the campaigns to fight the abuse of alcoholic beverages be concentrated not on general suppression of consumption (prohibition) but on

CONCLUSIONS ET PERSPECTIVES DU GROUPE INTERGOUVERNEMENTAL SUR LES PRODUITS VITI-VINICOLES DE LA F.A.O.

En évaluant les facteurs qui ont une influence possible sur la consommation, le Groupe intergouvernemental sur les produits viti-vinicoles de la F.A.O. a examiné l'impact des préoccupations de santé. Il a remarqué que non seulement les différents facteurs sociaux et économiques ainsi que les traditions de consommation contribuaient à la diminution globale de la consommation, mais qu'en outre les effets sur la santé constituent un facteur potentiellement de grande importance qui pourrait avoir une influence négative sur les marchés. Le Groupe a considéré que les normes internationales établies, notamment celles développées par l'O.I.V., représentaient une garantie de la bonne composition du vin qui pourrait contribuer à stopper la tendance décrite ci-dessus.

A cause des effets néfastes de l'alcoolisme, le Groupe a constaté que la tendance dans plusieurs pays est de décourager activement la consommation de boissons alcooliques. Cependant, de telles campagnes sont souvent chargées de connotations émotionnelles sans démonstration scientifique. Le Groupe a accueilli les informations issues de la coopération F.A.O.-O.I.V. en réponse à la demande formulée lors de sa cinquième Session au sujet des informations concernant les avis du corps médical sur la consommation de vin.

Le Groupe a remarqué que, ces dix dernières années, les publications médicales indiquaient que la consommation modérée d'alcool avait un effet favorable sur la santé et que la courbe en « U » de la mortalité globale représentait les niveaux de consommation d'alcool. En outre le Groupe apprendait que, parmi les nombreux composants du vin, les tannins et les composés phénoliques apportent au vin des propriétés bénéfiques. Cependant, la recherche a encore besoin d'établir le rôle exact de ces composants et de leurs effets, bénéfiques ou non. De plus, la détermination des niveaux d'alcool pouvant être consommés sans risque est une tâche difficile puisque les effets de l'alcool et du vin ont été déterminés avant tout par des caractéristiques génétiques et les circonstances de la consommation elle-même. L'évidence scientifique a suggéré que le vin (et l'alcool) ont des effets bénéfiques dans le cas d'une alimentation équilibrée.

Le Groupe a noté avec intérêt les nouveaux concepts selon lesquels la réaction de la famille et des amis confrontés directement à l'alcoolisme pourraient expliquer en partie la diminution de la consommation.

Le Groupe a relevé par ailleurs les actions entreprises sous les auspices de l'O.I.V. et de l'O.M.S. concernant les problèmes de santé. Il a rappelé, en particulier, la Résolution Oeno 3/93 de l'O.I.V. et le Plan d'action de l'O.M.S. (1992) contre l'alcoolisme, développé par le Bureau régional pour l'Europe de l'O.M.S. Il a apporté son soutien à ces actions dans la mesure où elles tendent à encourager les conditions renforçant la motivation et la capacité de l'individu à éviter les pratiques dangereuses face à l'alcool. Il a également suggéré que les campagnes de lutte contre l'abus de boissons alcooliques soient concentrées non pas sur la suppression totale de la consommation

education directed toward making individuals, youth in particular, aware of their responsibilities as much towards themselves as towards society.

The Group considered that its discussion had been useful and had brought together a considerable amount of scientific information having a bearing on health and wine consumption, including the beneficial effects of moderate consumption as part of regular mealtime occasions. The Group considered that scientifically based objective information on all aspects of the impact on health of wine consumption needed to be further researched and the findings disseminated to consumers, the medical profession, and public authorities. Information and education of individuals would also contribute to responsible decisions regarding consumption. The Group requested the Secretariat to continue to cooperate with OIV in pursuing activities to develop and disseminate information regarding the health aspects of wine consumption, and recommended that the WHO be approached to obtain its cooperation in these tasks.

(prohibition) mais sur l'éducation visant à responsabiliser les individus, en particulier les jeunes, tant pour eux-mêmes que pour la société.

Le Groupe a considéré que les débats ont été utiles et ont apporté un ensemble important d'informations scientifiques portant sur la santé et la consommation du vin, y compris sur les effets bénéfiques d'une consommation régulière et modérée à l'occasion des repas. Le Groupe a considéré que les informations objectives, scientifiquement fondées sur tous les aspects concernant l'impact sur la santé de la consommation de vin, nécessitaient d'être approfondies et que les découvertes soient communiquées aux consommateurs, au corps médical et aux autorités publiques. L'information et l'éducation des individus contribueraient ainsi à prendre des décisions appropriées concernant la consommation. Le Groupe a demandé au Secrétariat de continuer à coopérer avec l'O.I.V. pour la poursuite des activités visant à développer et transmettre les informations concernant les aspects sanitaires de la consommation du vin et a recommandé que l'O.M.S. soit contactée pour obtenir qu'elle coopère à ces tâches.
