



Promotion and Market Development Committee  
16<sup>th</sup> Meeting  
19 September 2018  
London, United Kingdom

**Summary Report of the  
Dissemination Workshop on  
Coffee and Health**

**Background**

1. The Chair of the ICO Promotion and Market Development Committee presents this document enclosing a summary report of the Dissemination Workshop on Coffee and Health held on 10 April 2018 in Mexico City during the 121<sup>st</sup> Session of the International Coffee Council and associated meetings.
2. The purpose of the Workshop was to share the latest information on the effects of coffee on health. With high-profile speakers on the topic, participants represented ICO Member countries, international organizations, non-governmental bodies and the private sector from across the globe.
3. Presentations for the Dissemination Workshop on Coffee and Health are available at the ICO website at: <http://www.ico.org/Presentations-17-18.asp>

**Action**

3. Members are invited to consider the report and recommend practical steps for the Promotion and Market Development Committee to take in support of ICO Member countries in order to communicate positive messages about coffee and, in so doing, help to increase coffee consumption.

**SUMMARY REPORT OF THE  
DISSEMINATION WORKSHOP ON COFFEE AND HEALTH  
HELD DURING THE 121<sup>ST</sup> SESSION OF THE INTERNATIONAL COFFEE COUNCIL  
10 APRIL 2018, MEXICO CITY**

## **INTRODUCTION**

1. The objective of the Dissemination Workshop on Coffee and Health was to share latest developments relating to coffee consumption and health, presented by eminent speakers in the field.

## **Agenda**

- 15:00 – 15:05 **Welcome and introduction**  
**International Coffee Organization:** Mr José Sette, Executive Director  
**Moderator:** Ms Yunyune Martínez – Director of Documentary Control and Adviser to the Undersecretary of Agriculture, Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA), Mexico
- 15:05 – 16:00 **Health effects of coffee: Physiology and pathology**
- Dr Astrid Nehlig – Research Director, French National Medical Research Institute, France
- 16:00 – 16:30 **Coffee, health & consumption: Reaching coffee drinkers**
- Mr Bill Murray – President and CEO, National Coffee Association, United States
- 16:30 – 17:00 **Coffee break**
- 17:00 – 17:45 **The impact of coffee on mental health**
- Professor Rui Daniel S. Prediger – Experimental Laboratory of Neurodegenerative Diseases, Department of Pharmacology, Federal University of Santa Catarina, Brazil
- 17:45 – 18:00 **Discussion**

## **Opening**

2. The Dissemination Workshop on Coffee and Health was formally opened by the Moderator, Ms Yunyune Martínez – Director of Documentary Control and Adviser to the Undersecretary of Agriculture – Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA), Mexico.

3. Along with the Moderator, Mr José Sette – Executive Director of the ICO – welcomed participants to the workshop on what was always an interesting and ever-evolving topic. The ICO had previously facilitated discussions within the sector on coffee and health, including a conference in 2003 which had led to the development of the Positively Coffee initiative to educate health professionals on the benefits of coffee to one's health. Mr Sette remarked how much the public perception of coffee and its effects had changed over the years for the better. He was concerned, however, that this progress might be short-lived if recent developments in California<sup>1</sup> led to the introduction of cancer warning labels on coffee cups and packaging attributed to low levels of the substance acrylamide.

### **Keynote: Health effects of coffee: Physiology and pathology**

**Dr Astrid Nehlig, Research Director, French National Medical Research Institute, France**

4. Dr Nehlig explained that coffee was the drink most consumed after water – 255kg per second or eight million tonnes per year. Hence the drink was of immense interest, especially in terms of its potential effects on health.

### **Different constituents of coffee**

5. Coffee contained thousands of different substances, including caffeine, chlorogenic acid, quinic, trigonelline and caramelized products, lipids (diterpenes), proteins, minerals (calcium, magnesium) and vitamins (mainly from the B group). Low to moderate intake of caffeine was considered to be one to three cups a day, and high intake over five cups a day.

### **Caffeine intake**

6. According to a study in Austria, 65% of the caffeine consumed by subjects was from coffee, followed by energy drinks, cola, tea, cacao and chocolate. According to the European Food Safety Authority (EFSA), the recommended dose of caffeine intake for adults was not more than 200mg in one sitting (two cups), with a maximum daily intake not exceeding 400mg (four to five cups) of coffee. For adults following intense sports activity, 200mg was safe in one sitting, but not more than 200mg for pregnant women. For children and adolescents there was not much data, however this was not to be more than 30mg a day, the equivalent of one cola drink.

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<sup>1</sup> Proposition 65, also called the Safe Drinking Water and Toxic Enforcement Act.

## **General effects of coffee and caffeine**

7. Low to moderate intake was considered to be 50 to 200mg in one sitting (one small to two large cups of coffee). Positive effects included a feeling of wellbeing, relaxation, good mood, energy, increased vigilance and better concentration. High to very high intake was 400 to 800mg in one sitting (four to eight large cups of coffee), with negative effects including nervousness, anxiety, aggressiveness, insomnia, tachycardia and tremor. Moderate consumption of coffee and caffeine (three to four cups daily) was not considered to present any health risk.

## **Inter-individual differences**

8. Caffeine consumption and its effects differed between individuals, influenced by the expression of some genes, for example the rate caffeine was eliminated from the body was 2.5 to 4.5 hrs or 'half-life' (the time needed to eliminate half of what was being ingested). The 'half-life' was influenced by the variable expression of the gene coding for the enzyme responsible for metabolizing 95% of caffeine (cytochrome P450 isozyme 1A2-CYP1A2). Spontaneous caffeine consumption was influenced by diverse genetic variations (polymorphisms) of the adenosine A2A receptor (main cerebral target of caffeine). As a result individuals tended to adjust their consumption to reach a balance between the positive and adverse effects possibly felt.

## **How does caffeine work?**

9. Adenosine modulated brain excitability, with caffeine acting as an antagonist at the adenosine receptors and releasing excitatory neurotransmitters.

10. Antioxidant polyphenols were found in coffee. According to a 2011 study in France, 67% of the polyphenol intake in French adults came from coffee, followed by tea (10%), wine (9%), vegetables (8%) and fruits (5%). The polyphenol content was also higher in coffee than other drinks. Antioxidants helped to preserve cell and membrane integrity, protect against cell damage induced by free oxygenated radicals, lipid peroxidation and protein damage, inflammation and infection, activate detoxification processes, and preserve the integrity of DNA.

## **Physiological effects of coffee on the brain**

- **Effect of coffee/caffeine on vigilance, mood and performance**

11. Low doses of caffeine (20 to 200mg) had positive effects on mood, vigilance and energy, including improvement in self-confidence, concentration ability and efficacy in intellectual tasks. The effects of caffeine on performance and memory were more indirect.

- **Headache/migraine**

12. The caffeine contained in coffee decreased pain in headaches and migraines. Caffeine alone could be found in analgesic medication and strengthened the analgesic properties of some drugs (aspirin, ibuprofen, paracetamol). 130mg of caffeine provided significant adjuvant therapy when combined with aspirin or paracetamol/aspirin in a variety of pain symptoms, such as toothache. In such circumstances, the advice was to take a pain relief tablet with coffee, rather than water.

- **Sleep**

13. Sleep was one of the functions most sensitive to coffee and caffeine intake. A 2007 study showed that 100 to 200mg of caffeine (one to two cups) at bedtime increased sleep latency and decreased sleep quality (mainly deep sleep), while REM sleep (dream state) was not affected. This effect persisted for three to four hours, sometimes longer. The impact varied among subjects and was linked to a polymorphism of the adenosine A2A receptor.

- **Anxiety**

14. Coffee and caffeine could generate anxiety, but usually only at very high doses, far above habitual consumption. This effect could occur at lower doses in some sensitive individuals (linked with a polymorphism of the adenosine A2A receptor). This increased sensitivity could also lead some individuals to reduce their coffee consumption.

### **Pathological effects of coffee on the brain**

- **Age-related cognitive decline**

15. The FINE study, conducted over ten years on 676 healthy men born between 1900 and 1920 from Finland, Italy and Netherlands, examined levels of cognition using the MMSE (Minimal State Examination) scale (0-30). People who drank no coffee experienced a cognitive decline of 2.5 points. This was reduced to 0.5 when a maximum of three cups were consumed daily. Coffee consumption was inversely related to age-related effects on cognition. This effect was different in men and women.

- **Parkinson's disease**

16. Parkinson's disease resulted from the degeneration of dopaminergic neurons on the substantia nigra and striatum of the brain, leading to motor disturbance. A 2010 study found a causal link between caffeine intake and decreased probability of developing Parkinson's disease, although this was less marked in women than in men.

- **Alzheimer's disease**

17. A 2010 meta-analysis found a reduction of 16% in the risk in developing Alzheimer's disease in consumers of three to four cups of coffee daily, compared to non-consumers. However, more studies were needed as the mechanism of action was unclear.

### **Other effects of coffee**

- **Mortality**

18. Many publications relating the intake of caffeine to mortality were available. In both men and women, all causes of death decreased in mortality with regular and decaffeinated coffee.

- **Cardiovascular system**

19. Coffee reduced mortality due to heart disease and stroke. Decaffeinated coffee was as effective as regular coffee. According to a 2014 meta-analysis of over one million subjects and 36,352 cases, there was a non-linear reduction of cardiovascular disease with a maximum intake of three to five cups daily. Other findings included a lack of negative effects of higher dosages and a reduction in mortality.

- **Blood pressure**

20. Coffee did not affect blood pressure, but caffeine by itself increased blood pressure. The antioxidants in coffee could help to decrease blood pressure. A number of research papers had shown that coffee consumption was inversely related to hypertension.

- **Type II diabetes**

21. Drinking coffee reduced the risk of developing Type II diabetes and its complications by 29%. This phenomenon was observed in men and women, as well as in obese and non-obese subjects. Decaffeinated coffee was as powerful as regular coffee, hence the effect mostly mediated by the antioxidants contained in coffee.

22. Changes over quite short periods (four years) modified the risk: every increase by one cup of coffee/day decreased the risk by 11% for the next four years, while every decrease by one cup of coffee/day increased the risk by 17% for the next four years. Daily consumption of three to four cups of coffee acted on the evolution of diabetes, preventing pre-diabetics from developing diabetes, provided that the coffee was consumed black without sugar or cream.

- **Metabolic syndrome**

23. Metabolic syndrome was the conjunction of various problems in carbohydrate, lipid and vascular regulation associated with being overweight. These problems could, in the long term, induce Type II diabetes and predispose to atherosclerosis and stroke.

24. Coffee consumption reduced by 25% the risk of metabolic syndrome, helping to reduce waist size, accumulation of abdominal fat, hypertension and concentration of triglycerides in blood.

- **Coffee and cancer**

25. Proposition 65 (formally titled The Safe Drinking Water and Toxic Enforcement Act of 1986) is a California law, passed by direct voter initiative in 1986, which could result in 'cancer warning' labels on all coffee cups and packaging. The State considered that every customer should be provided with labelling on food and drink with any negative effects.

26. Due to the presence of acrylamide in coffee, which was formed during the roasting process and had been found to be a carcinogen if administered alone in large amounts to rodents, there was the possibility that cancer warning labels on coffee cups and packaging would become a requirement. Coffee, however, was a complex mixture of numerous compounds and was not one of the foods with the highest concentration of acrylamide, which can also be found, for example, in cereals and crisps. This decision, if applied, could affect the whole coffee chain and go against the clinical evidence.

27. There was no evidence to show that coffee consumption had an effect on mortality related to cancer. In fact, coffee consumption was associated with a 46 to 71% reduction in risk of death from chronic liver disease.

28. The International Agency for Research on Cancer in 2016 categorized coffee as belonging to Group 3, which meant it was 'not classifiable as to its carcinogenicity to humans'. Coffee in fact protected against cancer in some organs (including liver, breast, prostate, pancreas, colorectal and skin) and had no effect on cancer of the bladder, kidney, larynx, oesophagus, stomach and lung.

**Limitations: observational vs interventional studies**

29. A 2017 review examined the evidence of observational and interventional meta-analyses of studies on coffee consumption and health outcomes. There were 201 observational studies (sample of population) and 17 interventional (select sample with different doses) studies. Coffee was more associated with beneficial, rather than harmful health effects. The only potential negative effects of coffee consumption related to pregnancy (low birth weight, preterm birth, pregnancy loss), and the risk of fracture in women, not men.

30. There was a regrettable lack of interventional studies to be able to show whether coffee was a causal factor, instead only associations had been studied.

- **Digestion**

31. Coffee increased the activity of hepatic enzymes, increasing the frequency of gall bladder contractions, pancreas secretion and intestinal contraction. However, coffee could increase the acid secretion of the stomach but only in individuals intolerant to coffee. It did not influence the development of gastro-duodenal ulcers, and inhibited the formation of gallstones.

- **Pregnancy**

32. In pregnant women, caffeine consumption should not exceed 200mg/day (two cups of coffee). Recent studies indicated that coffee had no effect on fertility, congenital malformations or postnatal development. Coffee could, however, increase the risk of low birth weight, preterm delivery and pregnancy loss. On the whole, no negative effects were associated with consumption of 200mg/day.

33. Consumption, however, needed to be reduced towards the end of pregnancy. The half-life of caffeine was prolonged during the third trimester (10.5 hrs vs 2.5-4.5 hrs) and was very high in the foetus (about 100 hrs).

- **Sports**

34. Moderate quantities of caffeine (3 to 6mg/kg) had beneficial effects in numerous sports activities, including endurance sports.

### **Conclusions**

35. In her conclusions, Dr Nehlig stressed that, according to published research, coffee had numerous benefits to health, including:

- Improved mood and performance
- Increased vigilance
- Prevention of age-related cognitive decline, mainly in women
- Prevention of Parkinson's disease and possibly Alzheimer's disease, liver cancer and diseases, as well as Type II diabetes
- Protection of the cardiovascular system.

36. She also emphasized that a moderate consumption of coffee/caffeine had positive effects on health and wellbeing and could be part of a well-balanced diet.

37. In response to a question from a delegate, Dr Nehlig was unaware of studies into the effects on health of the coffee flower or coffee cherries, which according to the delegate had been found to have had positive effects in terms of relaxing properties. Dr Nehlig explained that most studies did not differentiate between different types of coffee, but she thought this would be an interesting topic.



38. Dr Nehlig closed her presentation with details of her recently published book (available in French only): *'Café et santé: Vrai/Faux sur ce breuvage ... divin' (Coffee and health: True / False on this ...divine drink).*

### **Coffee, Health & Consumption: Reaching Coffee Drinkers**

#### **William 'Bill' Murray, President & CEO of the National Coffee Association, United States**

39. Mr Murray focused his presentation on the strategic communications of the health benefits of coffee. He opened by referring to what he saw as the regrettable decision of the Government of the United States to withdraw from the International Coffee Agreement (ICA 2007), while pledging the continued support of the US private sector to the ICO.

40. One of the objectives of the ICA 2007 was to 'promote the development of consumption and markets for all types and forms of coffee ...' The world of medicine was complicated, along with the impact of coffee on the human body. Most consumers in America knew very little about this, so the challenge was how to communicate the positive effects of coffee to consumers and in so doing increase levels of coffee consumption. In the USA alone, coffee consumption was growing every year, but further room for growth existed.

#### **What is important to consumers?**

41. The coffee sector needed to understand what was important to consumers. Over the last ten years a shift in the way consumers made decisions had taken place. Today, consumer values were driving changes in product choices, behaviour and attitudes. Coffee trends included convenience, customization, single origin and roast type. Consumers increasingly valued ethical sourcing, sustainability, certification and products that supported health. These changing values were seen most clearly when examining generational differences. According to research conducted by the National Coffee Association USA (NCA) into the percentage of consumers who would be 'much more/somewhat more likely to buy a brand', 25 to 39 year olds were more likely than all other age ranges to buy a brand of coffee: grown on farm that treats workers well, free from GMOs, sustainably grown, organically certified, supported charities, and having recycled or had compostable packaging.

42. One of the other values revolved around health and healthy lifestyles. For older people being healthy could mean going for screenings and check-ups, while for younger people being healthy was a lifestyle with good eating habits and regular exercise.

#### **What do consumers know about coffee and health?**

43. According to the NCA's National Coffee Drinking Trends 2018 survey, 26% of consumers in the United States had heard negative things about coffee, but 69% had not heard about coffee's beneficial effects on specific diseases.

44. Heart disease was the number one killer around the world. In the United States 22% of consumers had heard drinking coffee could have a positive effect, and when asked 47% said they would drink more coffee if they knew it was good for the heart.

### **Changing behaviour: Opportunities**

45. Coffee was one of the most heavily studied foods in history. The UN's World Health Organization studied coffee and cancer in 2015-16 examining over 1,000 studies solely on coffee and cancer. Literature reviews, meta-analyses or umbrella studies helped to look across this body of research.

46. If consumers knew the good news about coffee they would increase consumption. The challenge was that the public were being bombarded with mixed messages from a multitude of sources. For example, in 2016 an article in the press caused much concern claiming that drinking coffee could lead to a loss in hearing. A more detailed examination revealed that the study in question involved 24 albino guinea pigs being force-fed 18 cups of coffee a day.

47. The Proposition 65 ruling from California could result in warnings on coffee cups associating coffee with cancer. However, study after study had shown that coffee did not cause cancer, and could in fact prevent certain types of cancer. No wonder consumers were confused.

### **Communicating the message**

48. Looking strategically at communicating the effects of coffee on health, the sector needed to consider the following:

- Tailor communications to targeted audiences in accessible and convenient forms/channels
- Keep messages simple and repeat them
- Target professionals who communicate about coffee, including medical professionals, the media, consumers, opinion leaders and the industry
- Identify and engage third-party independent experts and allies, e.g. research institutions.

49. The secondary message was that coffee was also good for the economy.

50. Mr Murray emphasized, however, that national requirements relating to labelling were often stringent, so it was important to observe local regulations and seek the advice of knowledgeable experts before communicating the science. It was also important to distinguish between reporting on research and making statements about health and coffee.

### **Conclusions**

51. In his final remarks, Mr Murray highlighted that consumer attitudes were changing, so the sector needed to know more about the value-related aspects of their food, including health. Values, such as promoting the good news on coffee and health, could help drive consumption.

52. Communication on coffee and health needed to separate the clutter from the credible science. Communication needed to be factually accurate, simple and straight-forward, and key messaging points should be developed and reinforced with examples, third-party experts and stories.

53. In response to questions about the legal case in California, Mr Murray feared the case could go on for some years, and have repercussions that went beyond California and impacted other markets worldwide. Mr Murray underlined that there was a positive story to tell on coffee and health, and called on all parties to help everyone in the coffee supply chain to grow consumption.

### **The impact of coffee on mental health**

#### **Professor Rui Daniel Prediger PhD – Department of Pharmacology, Federal University of Santa Catarina, Brazil**

54. In addition to thanking the ICO for inviting him to present, Professor Prediger expressed his thanks to the Brazilian Coffee Industry Association (ABIC), an organization which had supported him in the creation of a research group to disseminate information on the benefits of coffee and to conduct studies in the area.

55. There were benefits to human health with regular coffee consumption, particularly in relation to neurodegenerative diseases. The brain was very complex, with 100 billion neurons that could have up to 15,000 connections with other neurons via synapses. Coffee targeted the adenosine receptors of the brain. Caffeine blocked adenosine inhibitory actions leading to feelings of alertness, increased adrenaline release leading to a boost in feelings of wakefulness/physical energy, as well as releasing dopamine leading to feelings of pleasure and wellbeing.

56. Brain disorders included mental and neurological disorders. In the United States, with a population of 325 million: 60 million suffered from insomnia, 20 million from depression, 19 million from anxiety, 6.2 million from Attention Deficit Hyperactivity Disorder, 4 million from Alzheimer's disease, 3 million from schizophrenia and 1.5 million from Parkinson's disease – all disorders of the central nervous system. There were immense costs, not only to the patient and their families, but also to the public purse. Research into the costs of disorders of the brain in Europe found that, for example, 6.3 million subjects had been diagnosed with dementia, at a cost to the economy of over 100 million euros.

57. There were a number of challenges with studying such disorders. Currently treatments were palliative, when the disorder was quite advanced, so treatment was not designed to be preventative or promote cure. There was a need, therefore, for more studies on biomarkers to help with earlier diagnosis and lead to advances in the treatment of brain disorders.

## **Depression**

58. According to the World Health Organization, over 350 million people around the world suffered from depression, which affected individuals of all ages, nationalities, cultures, religions and financial circumstances. Depression affected more women than men and was the top cause of functional incapacitation (impacting on employment and productivity). There was also a failure of antidepressant treatment in 50% of patients.

59. A 2014 study in the journal Nature found that 76.4 million years were lost to disability caused by depression worldwide, which was 10.3% of the total burden of disease.

60. Several studies on large cohorts had associated daily coffee drinking (four cups of coffee) with a decreased risk of depression (9 to 20%) and suicide (53%). However, one study showed that there was an increased suicide risk (58%) in those drinking more than eight cups of coffee daily.

## **Ageing and neurodegenerative disease**

61. With an ageing world, neurodegenerative diseases were a growing area of interest. In the world, 1 to 2% of the population over 65 years had Parkinson's disease, with 5% over 65 years with Alzheimer's disease, increasing to 40% for those over 80 years.

62. A 2017 study of 521,330 adults, recruited in 10 European countries and followed for 16 years, showed that the intake of at least three cups of coffee per day was associated with a lower risk (7 to 12%) of all-cause mortality. Similar findings were found in a multi-ethnic prospective cohort study comprising of 185,000 subjects.

## **Alzheimer's disease**

63. Two-thirds of cases of dementia were caused by Alzheimer's, with a new diagnosis every three seconds, costing in the region of one trillion dollars a year. This would likely grow according to predictions by various institution/government reports into the increase in the ageing population.

64. Most epidemiological studies suggested that a lifetime of regular coffee/caffeine consumption reduced the risk (30 to 70%) of developing Alzheimer's disease. Caffeine improved attention and memory, decreased the production of amyloid beta (peptides of 36 to 43 amino acids that are crucially involved in Alzheimer's disease). However, coffee consumption was not able to reverse the symptoms of Alzheimer's disease patients.

65. A study on 124 subjects aged 65 to 88 years reported that persons 'evolving from moderate cognitive decline to Alzheimer's disease during the two to four years follow-up' had 51% lower blood caffeine concentrations than those who stayed at moderate cognitive decline.

### **Parkinson's Disease**

66. Parkinson's disease affected brain areas associated with motor function, however its symptoms were often accompanied by non-motor symptoms including depression and memory impairments and the side effects of the medication taken for the disease. Preclinical studies indicated that caffeine conferred neuroprotection against the underlying dopaminergic neuron degeneration and could influence the onset and progression of Parkinson's disease.

67. In one clinical trial, 121 patients with one to eight years' disease duration were randomized to take caffeine-containing capsule of 200mg twice-daily versus placebo capsules over 6 to 18 months. The conclusion was that caffeine did not provide clinically important improvement of motor manifestations of Parkinson's Disease, and the epidemiologic links between caffeine and lower Parkinson's Disease risk did not appear to be explained by symptomatic effects.

### **Attention Deficit Hyperactivity Disorder**

68. Attention Deficit Hyperactivity Disorder (ADHD) was a chronic neurobehavioural disorder beginning in childhood and was characterized by a persistent pattern of inattention, hyperactivity and impulsivity.

69. The estimated prevalence worldwide was 5% in children and 2.5% in adults. While symptoms did change, they often persisted into adolescence and adulthood for many patients, compromising quality of life and life outcomes.

70. ADHD was associated with structural, functional and neurotransmitter alterations in many brain regions, including cortical and subcortical structures. Adenosine receptors were widely distributed in brain areas with marked alterations in ADHD and, while not extensive, some studies showed that caffeine had a positive effect on the symptoms of ADHD, although more research was needed.

### **Conclusions**

71. Professor Prediger concluded that, according to research, caffeine consumption improved attention, memory and mood, and decreased the risk of depression and suicide. Lifelong coffee/caffeine consumption prevented age-related cognitive decline and increased longevity. Despite not being as effective in the improvement of Alzheimer's and Parkinson's disease symptoms, lifelong coffee/caffeine consumption decreased the risk of these diseases and may represent a blood marker of the disease's progression. ADHD symptoms in children, adolescents and adults may be improved by coffee/caffeine consumption and future controlled trials would be very welcome.

72. In response to a question about the use of Prozac and coffee, while there was research into the positive effects of coffee on depression, coffee was not yet replacing medication, instead it was more of a case of co-administration. Professor Prediger also extended a warm invitation to delegates to visit his research centre in Brazil and to know the initiatives of ABIC to disseminate information on the benefits of coffee and to conduct studies in the area.

### **Closing remarks**

73. Ms Martínez formally closed the workshop by thanking all presenters and participants. The workshop had clearly been of immense interest and value, highlighting the need to disseminate information within the sector, support more research studies and explore how best to communicate findings to the consumer in order to increase coffee consumption across the world.

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## **BIOGRAPHICAL DETAILS OF PRESENTERS**

### **Ms Yunyune Martínez (Moderator)**



Ms Yunyune Martínez has a degree in International Relations from the Tecnológico de Monterrey, and has a Masters in Strategic Design and Innovation from the Universidad Iberoamericana and a Diploma in Integral Project Management from the same university. Her career has been focused on the design, development and implementation of projects in the legislative field, public administration, international development and civil society.

She is currently Director of Documentary Control and adviser to the Undersecretary of Agriculture at the Secretary of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA), developing projects on issues of sustainability, food security, internal migration and monitoring the objectives of Sustainable development.

### **Dr Astrid Nehlig PhD (Keynote presenter)**



Dr Astrid Nehlig, Ph.D., earned a master's degree in Physiology, one Ph.D. degree in physiology and one Science degree in functional neurochemistry at Henri Poincaré University in Nancy, France. She holds presently an emeritus Research director position at the French Medical Research Institute, INSERM in Paris/Strasbourg. Her main research interests are brain metabolism, brain development, epilepsy, and the effects of coffee and caffeine on health. She has authored or co-authored approximately 280 articles, books and book chapters and has edited three books, one on epilepsy and two on coffee. She has been invited to deliver over 200 lectures, including many on coffee and health. She received several grants for her work mainly from Medical Research Foundations, NATO, and private companies, a 2002 award from the American Epilepsy Society and a 2006 award from the Gordon Research Conference.

Dr Nehlig headed an INSERM research team of 10-15 persons for 30 years, resulting in the education of about 25 M.D. and Ph.D. students and several post-doctoral fellows. She is the co-Editor-in-Chief of *Epilepsia*, the official journal of the International League Against Epilepsy (ILAE) and belongs to the editorial board of several journals. She acts as an expert for a large number of scientific journals and international societies.

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She is also the president of ASIC (Association for Science and Information on Coffee), scientific advisor of ISIC SC (Institute for Scientific Information on Coffee, Scientific Committee) and works as an expert for the French Coffee Roasters Association.

### Mr Bill Murray



Mr William “Bill” Murray, CAE, is President & CEO of the National Coffee Association (NCA), the trade group representing all industry segments, with a membership weighted toward small and mid-sized companies and representing over 90% of US coffee commerce. Previously, he served as CEO of the Public Relations Society of America (PRSA), and as EVP and Co-COO of the Motion Picture Association of America (MPAA.)

### Professor Rui Daniel Prediger PHD



Professor Rui Daniel Prediger (PhD), is a full Professor at the Department of Pharmacology (UFSC, Brazil). He is the leader of the team entitled “Laboratory of Neurodegenerative Diseases – LEXDON”. The goal of his research team is to investigate the pathological mechanisms and new therapeutic agents for Parkinson's disease and Alzheimer's disease, as well as the aetiology and treatment of psychiatric disorders such as depression, anxiety and addiction.

He is an associate member of the Brazilian Academy of Science (ABC) and he is author of more than 150 papers and reviews in international journals (h index=38). Projects of the team have been and are still supported by national and international funding agencies. He has concluded the supervision of more than 40 PhD and Master’s students. He is currently a consultant of ABIC, Michael G. Fox Foundation and Alzheimer's Association. He acts as Associate Editor at Journal of Alzheimer's disease and Frontiers in Pharmacology.

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**Disclaimer:** The views expressed in this document are those of the speakers and do not necessarily reflect the views of the ICO. This document has been produced based on the recording and presentations of the Dissemination Workshop on Coffee and Health. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat, or its economic system or degree of development. Mention of names or products does not constitute an endorsement by the ICO. This document has been produced without formal ICO editing.