AUSTRALIAN BEVERAGES COUNCIL

Submission to Proposal P1010 – *Formulated supplementary sports foods* Call for Data

9 September 2021

Table of Contents

About the Australian Beverages Council Limited

The Australian Beverages Council Limited (ABCL) has been the leading peak body representing the non-alcoholic beverages industry for more than 70 years, and the only dedicated industry representative of its kind in Australia.

The ABCL represents approximately 90 per cent of the non-alcoholic beverages industry's production volume and our Member companies are some of Australia's largest drinks manufacturers. The ABCL also represents many small and medium-sized companies across the country. Collectively, the ABCL's Members contribute more than $7 billion to the Australian economy and they employ over 50,000 people across the nation. The industry also pays $1.2 billion in taxes per annum and for every one direct employee who works in the beverage manufacturing industry, there are 4.9 jobs required elsewhere in the economy to produce and retail beverages.

The ABCL strives to advance the industry as a whole, as well as successfully representing the range of beverages produced by our Members. These include carbonated soft drinks, energy drinks, sports and electrolyte drinks, frozen drinks, bottled and packaged waters, fruit juice and fruit drinks, cordials, iced teas, ready-to-drink coffees, flavoured milk products and flavoured plant milks.

The unified voice of the ABCL offers Members a presence beyond individual representation to promote fairness in the standards, regulations, and policies concerning non-alcoholic beverages. The ABCL plays a role in educating consumers on making informed choices which encourage balance, moderation and common sense.

The ABCL advocates on issues such as portion sizes, nutritional labelling, responsible industry marketing and advertising, and canteen guidelines, among others. Our Members listen to consumers and adapt their products accordingly by making positive changes and standing by a commitment to promote greater choice, appropriate portions and by developing an ever increasing range of low and no kilojoule products.

The ABCL is an important conduit between the non-alcoholic beverages industry and governments, supporting the Australian Government, State and Territory Governments and Local Councils.

1.0 Introduction

The ABCL continues to support Food Standards Australia New Zealand (FSANZ) work to provide certainty to consumers regarding food quality and safety and the provision of information through nutritional labelling to enable consumers to make informed choices, and enabling industry to do so under a transparent and effective regulatory framework.

The ABCL welcomes the opportunity to provide a submission to FSANZ's P1010 Formulated Supplementary Sports Foods *Call for data*, which seeks technical data and manufacturing process data, proposed usage, dietary exposure, function and benefit and any additional supporting literature, published or unpublished, that can inform risk assessment.

2.0 The proposed ingredient

Caffeine is a stable alkaloid that is naturally found in various plants such as coffee and cocoa beans, tea leaves, guarana berries and kola nut having a long history of human consumption as a component of such foods. It is one of the most commonly consumed stimulants and the mechanism of its function as a stimulant is well understood. There are many studies and claims to support that caffeine consumption can improve reaction time, concentration and motor coordination, as well as improving mental and physical performance.

3.0 Current permissions in the Code for the ingredient in beverages

As a pure extracted substance, the Australia New Zealand Food Standards Code (the Code) permits its use as a flavouring substance in cola type drinks (Schedule 15 – 5, food class 14.1.3.0.2) and as a stimulant in formulated caffeinated beverages (Standard 2.6.4).

3.1 Caffeine as a flavouring food additive

The Code permits the use of caffeine in cola type drinks at a maximum permitted level (MPL) of 145 mg/kg as listed in the table to section 5 of Schedule 15. Caffeine is performing the technological purpose of a flavouring when added to cola type drinks and is considered a food additive in this instance.

Similar permissions exist at an international level. For example, the US Food and Drug Administration (FDA) has a specific permission for caffeine as a GRAS (Generally- Recognised-As-Safe) substance that can be added to cola-type beverages at a level up to 0.02% (200 mg/kg)[1]. In Europe, caffeine is also

considered as a flavouring substance with specific permissions of a maximum level of 150 mg/kg in foods (non-alcoholic beverages would fall under this category), as well as other permissions for dairy products and analogues (70mg/kg), edible ices (70 mg/kg) and confectionary (100 mg/kg)[2].

3.2 Caffeine as a stimulant

Standard 2.6.4 – Formulated caffeinated beverages of the Code, permits the addition of caffeine as a stimulant to a beverage specifically to enhance mental performance. This standard was an outcome of Application A394 (2001) – Formulated caffeinated beverages (Energy drinks), which demonstrated the science to support caffeine consumption in these types of beverages as a means for improving concentration and mental performance. Although caffeine is scientifically supported to also improve physical performance such as sprint and endurance and with reduced perceived exertion, the assessment reports of A394 noted that physical performance was not included in the definition of formulated caffeinated beverages (standard 2.6.4), to distinguish these types of products from sports and electrolytes drinks whose purpose is related to physical performance.

Formulated caffeinated beverages (FCBs) are currently permitted in the FSC to contain up to 320 mg/kg (Litre).

4.0 Caffeine as an ingredient in a formulated supplementary sports food

4.1 Function and benefit of caffeine on exercise performance

The interest of caffeine in the sporting world has increased remarkably in recent years due to its recognised performance enhancing benefits[3]. Caffeine consumption through energy drinks and co-ingestion of caffeine via 'pre-workouts' with other caffeine-containing supplements has become increasingly popular[4,5,6]. There is an abundance of evidence to suggest that supplementation with caffeine can enhance various aspects of exercise performance. Historically, caffeine has demonstrated consistent ergogenic effects predominately on aerobic performance, like running and or cycling, but more recently it has become clear that caffeine may also have beneficial effect on anaerobic performance or power[7]. Some of the specific benefits of caffeine and exercise performance include:

- muscular endurance[8,9,10,11,12];
- movement velocity and muscular strength[13, 14,15];
- sprinting, jumping[16,17];
- throwing performance[18,19]; and
- wide range of aerobic and anaerobic sport-specific actions[3].

A recent review (2021) by The International Society of Sports Nutrition (ISSN)[3] critically analysed available literature to date on caffeine and exercise performance and identified commonly reported mechanisms of action of caffeine and subsequent effects on exercise performance. These functions included, but are not limited to:

- muscle contraction through calcium ion (Ca^{2+}) mobilisation;
- attenuation of muscle fatigue by gradual reduction of Ca^{2+} release;
- support of the central nervous system (CNS); and
- alter rate of perceived exertion, muscle pain and ability of skeletal muscle to generate force.

From this review, the ISSN developed a position stand on caffeine and exercise performance with several determinations confirming the performance – enhancing benefits of caffeine in various activities and conditions. The ISSN also noted that the most commonly used timing of caffeine supplementation is 60 minutes pre-exercise.

4.2 Caffeine and exercise performance in Australia

Sports Dietitians Australia (SDA) recognises the benefits of caffeine for athletes in a variety of sporting situations including team and intermittent sports; endurance sports and high intensity, short duration sports. SDA also recommend that a low dosage in the range of 1-3 mg caffeine per kg body weight is sufficient to improve performance[20].

4.3 Caffeine and exercise performance in international jurisdictions

The Academy of Nutrition and Dietetics, Dietitians of Canada and the American College of Sports Medicine also recognise the benefits of caffeine in reducing perception of fatigue and allowing exercise to be sustained at optimal intensity/ output for longer[21]. These benefits are also understood to be linked to the adenosine antagonist with effects on many body targets, including the central nervous system and promoting calcium ion release from sarcoplasmic reticulum[22,23].

5.0 ABCL Recommendation

The ABCL recommends that FSANZ consider the inclusion of caffeine as a permitted substance that may be used as nutritive substance in formulated supplementary sports foods (Schedule 29-19), as there is strong scientific evidence to support its performance-enhancing benefits in exercise and sports.

6.0 Conclusion

The ABCL thanks FSANZ for the opportunity to provide data on the inclusion of caffeine as a permitted nutritive substance in a formulated supplementary sports food in this submission. The ABCL welcomes any further opportunities to engage with FSANZ or provide further data to support this proposal.

Further queries

Should you have further queries regarding this submission, please do not hesitate to contact:

Cathy Cook
Head of Corporate Affairs
T: 02 8313 7761
E: cathy@ausbev.org

Lianna McGeary
Technical, Scientific and Regulatory Affairs Manager
T: 02 8313 7762
E: lianna@ausbev.org

References

[1] USFDA 2020 United States Code of Federal Regulations CFR Title 21, section 182.1180 – Caffeine.
[2] Commission Regulation (EU) 2018/1482 of 4 October 2018 amending Annex I to Regulation (EC) No 1334/2008 of the European Parliament and of the Council as regards caffeine and theobromine
[3] International society of sports nutrition position stand: caffeine and exercise performance J Int Soc Sports Nutr . 2021 Jan 2;18(1)**:1.**
[4] Trexler ET, Smith-Ryan AE. Creatine and caffeine: considerations for concurrent supplementation. Int J Sport Nutr Exerc Metab. 2015;25(6):607–23.
[5] Kendall KL, Moon JR, Fairman CM, Spradley BD, Tai CY, Falcone PH, et al. Ingesting a preworkout supplement containing caffeine, creatine, betaalanine, amino acids, and B vitamins for 28 days is both safe and efficacious in recreationally active men. Nutr Res. 2014;34(5):442–9.
[6] Tarnopolsky MA. Caffeine and creatine use in sport. Ann Nutr Metab. 2010; 57(Suppl 2):1–8.
[7] Grgic J, Grgic I, Pickering C*, et al* Wake up and smell the coffee: caffeine supplementation and exercise performance—an umbrella review of 21 published meta-analyses *British Journal of Sports Medicine* 2020;**54:**681-688.
[8] Del Coso J, Estevez E, Mora-Rodriguez R. Caffeine effects on short-term performance during prolonged exercise in the heat. Med Sci Sports Exerc. 2008;40(4):744.
[9] Ganio MS, Johnson EC, Lopez RM, Stearns RL, Emmanuel H, Anderson JM, et al. Caffeine lowers muscle pain during exercise in hot but not cool environments. Physiol Behav. 2011;102(3–4):429–35.
[10] Graham TE. Caffeine, coffee and ephedrine: impact on exercise performance and metabolism. Can J Appl Physiol. 2001;26(Suppl):S103–19.
[11] Warren GL, Park ND, Maresca RD, McKibans KI, Millard-Stafford ML. Effect of caffeine ingestion on muscular strength and endurance: a meta-analysis.
Med Sci Sports Exerc. 2010;42(7):1375–87.
[12] Polito MD, Souza DB, Casonatto J, Farinatti P. Acute effect of caffeine consumption on isotonic muscular strength and endurance: a systematic review and meta-analysis. Sci Sports. 2016;31(3):119–28.
[13] Berglund B, Hemmingsson P. Effects of caffeine ingestion on exercise performance at low and high altitudes in cross-country skiers. Int J Sports Med. 1982;3(4):234–6.
[14] Fulco CS, Rock PB, Trad LA, Rose MS, Forte VA Jr, Young PM, et al. Effect of caffeine on submaximal exercise performance at altitude. Aviat Space Environ Med. 1994;65(6):539–45.
[15] Stadheim HK, Nossum EM, Olsen R, Spencer M, Jensen J. Caffeine improvesperformance in double poling during acute exposure to 2,000-m altitude. J Appl Physiol (1985). 2015;119(12):1501–9
[16] Schneiker KT, Bishop D, Dawson B, Hackett LP. Effects of caffeine on prolonged intermittent-sprint ability in team-sport athletes. Med Sci Sports Exerc. 2006;38(3):578–85.
[17] Grgic J. Caffeine ingestion enhances Wingate performance: a meta-analysis. Eur J Sport Sci. 2018;18(2):219–25.
[18] Del Coso J, Perez-Lopez A, Abian-Vicen J, Salinero JJ, Lara B, Valades D. Enhancing physical performance in male volleyball players with a caffeine containing energy drink. Int J Sports Physiol Perform. 2014;9(6):1013–8.
[19] Perez-Lopez A, Salinero JJ, Abian-Vicen J, Valades D, Lara B, Hernandez C, et al. Caffeinated energy drinks improve volleyball performance in elite female players. Med Sci Sports Exerc. 2015;47(4):850–6.
[20] Caffeine - Sports Dietitians Australia (SDA) https://www.sportsdietitians.com.au/factsheets/supplements/caffeine/ Accessed online on 8 September 2021.
[21] Position of the Academy of Nutrition and Dietetics, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and Athletic Performance (2016). Vol 116 (3).
[22] Tarnopolsky MA. Caffeine and creatineuse in sport. Ann Nutr Metab.2010;57(suppl 2):1-8.
[23] Burke L, Desbrow B, Spriet L. Caffeine for Sports Performance. Champagne, IL: Human Kinetics; 2013.