

SENSORY LEXICON

FIRST EDT.
2016

咖啡感官词典

完整定义 以及 校准参考



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《World Coffee Research 咖啡感官词典》制订于 Edgar Chambers IV 实验室，实验室坐落于 Kansas State 大学的感官分析中心内，且被验证于 Texas A&M 大学的 Rhonda Miller 实验室。

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INTRODUCTION

简介

咖啡是当今世上消费类产品最具复杂化学成分的商品，它那极其微妙的香气、口感和风味体现，尚没有一种食品能与之相比、而且，它的风味似乎还是无限的，但实际上，并非如此。

咖啡，跟其他生活中的食品和饮品一样，我们通过同样的方式如品尝，闻 / 嗅，去感受它的味道，因为在咖啡豆当中所蕴含的复杂的分子组成，以及它的基因代码已经决定了我们将会怎么样的感官体验。每一种风味、香气、口感都源于它™一系列的咖啡豆内部的化学变化，反过来推论，从源头上说，以上的感官体验来取决于它的：咖啡种子的基因，如何种植，地理产区，摘离咖啡树之后所经历的一切过程（如处理法，干燥，脱壳 / 皮，储存，运输，烘焙，冲煮等等）

World Coffee Research 咖啡感官词典，率先使用感官科学的工具和技术，以了解，命名和分类咖啡的主要感官品项，并以此创建一套可参考并复制的标准及方法，来测量并衡量这些咖啡品项。

正如每一门语言的词典中，所收纳的字 / 词，其简介以及用法都反映了其广泛且专业的用法，本书当中所包含有关于咖啡现有的味道，香气，口感，都由感官专家以及行业领头者共同制定。

为什么我们需要 World Coffee Research 咖啡感官词典

创建 World Coffee Research 咖啡感官手册——一个通用的语言和工具以描述并衡量咖啡的感官项。对于了解什么原因造就咖啡从味觉，嗅觉，和感官上的体验，这是非常必要的第一步。

比方说，什么基因使得咖啡更苦，或者没那么苦？

是什么因素让咖啡有鲜橙的酸味而不是酸橙（青柠）的酸？

是否更换一种肥料会导致咖啡风味产生变化？

雨水代替灌溉还是坚持人工浇灌？

发酵过程当中在达到某一个 Ph 值（酸碱度）停止，亦或是到达某个发酵时长才停止？又或是用某种特定的酵母来维持发酵？

我们都知道，要把咖啡生豆储存在袋子中或者另一种可减少木质化的容器，但到底当中的变量又有多少改变呢？

你可以像以上一样列出一系列的问题，然后开始对其一一作答，当你有了工具去量化咖啡的味道以及风味，那几乎是无限的。

本词典由 WCR 创建，以使咖啡科学家们能引导实验用于制作更好的咖啡——从咖啡种子着手，为了生产出新的咖啡品种，它不仅具有高产量，抗病性，环境适应力（气候，水土），还能有非常惊人的味道体验。我们需要知道什么分子成分决定了咖啡的什么风味，然后再了解这些化学分子怎么生产。要完成上述的工作，你需要有一个可靠的，可重复试验的方式去测量这些风味和与之相对应的数据。

尽管我们有很多的好的工具来评估咖啡，如严谨规范的杯测规范，但他们间没有任何一个适用于科学研究。

本词典有三个本质性的点区别于其他的感官评价工具。

1. 描述性：

World Coffee Research 咖啡感官词典没有分类什么是“好风味”或是“坏风味”，同时也不允许对咖啡质量进行排名。

本词典纯粹的只是一个描述工具，它可以让你使用一套具有高度认可且专业准确的词汇去描述咖啡的味道（味觉，嗅觉）。

就正如我们使用坐标系 x,y,z 去描述，确定，空间中的某一个位置点一样。

2.具有可量化性：

World Coffee Research 咖啡感官词典，它允许我们不仅仅只是描述为咖啡的风味，还可以量化它的具体数值。比方说，我们面前有一杯具有蓝莓的风味或者香气的咖啡，但它在蓝莓风味上的强度只有4（评分表具有15个分项）这意味着我们可以以一种标准化且高精度的方式去对比咖啡之间的风味的强弱。

3.具有可靠性：

当本词典被两位通过感官训练的专业人员用于评价同一杯咖啡时，无论他们在哪里，他们的品尝经验如何，他们的文化背景如何，或者他们之间任何的不同，最终结果每一个分项都会获得同样的分值。比方说，一个【美国德州】的评测者跟来自【印度班加罗尔】的评测者，都会获得同样的分数如：“蓝莓，风味：4”

以上三个因素允许我们去询问以及解答科学上的问题，就如被给出任意的【X因素】（咖啡品种，农场管理实务，冲泡方法等）如何影响到咖啡的风味。只要尽可能多的控制除了【X因素】以外的咖啡变量，我们就可以通过给出一组咖啡样品给熟练使用该词典的感官专家，让他们通过感官分析评定咖啡的样品，并列出具体的结果以解决这一系列的问题。感官专家们通常都会以小组的方式进行工作，通常叫审议组，以确保没有任何一个品测人员偏离结果。一个常规的审议组会有5-7个品测员，每个品测员至少经过6-9个月的训练，以确保每个人在开始评测咖啡样品的时候使用的是同一套的系统进行分项的校准。

非用于科研用途的使用咖啡感官词典

当一个研究问题被提出的时候，咖啡的样品必须被训练有素的感官审议组去进行评估。在WRC 咖啡感官词典出版的时候，有两个训练有素的感官审议组在使用这一套标准进行评估，这两个小组都在美国。很显然，科学的问题日渐成为咖啡馆平常出品的问题。当这词典被创立时，我们都知道咖啡行业的各位朋友们都会对本词典会怎么帮助到他们的日常工作感兴趣。而实际上，那些更大型的咖啡公司，早已自己定制相似的工具以及自己一套的标准去把控品质，以及相关的研发工作。（不单单指咖啡行业，红酒、啤酒、芝士，肉类甚至是大麻都有属于它们自己的感官词典以及味觉评价标准）

比方说：一个咖啡的烘焙商可使用本词典去决定采用怎么样的烘焙曲线，在烘焙上如何更好的表达咖啡的坚果或者巧克力的风味。而一个咖啡采购者可以用本词典去选用何种咖啡来进行拼配，以获得他们想要的，并且稳定如一的风味。质量把控人员可以用其来校正他们的味觉。也可以用这本手册来愉快的玩耍咖啡哈哈。

直到现在，这样的工具并还没有被广泛使用于在咖啡行业里的众多从业者。

严谨的说，本书的创建来源于各位从业者心中日渐提升的国际规范化需求。加入咖啡可以从源头到杯中——种植者到烘焙师到咖啡师，都可以使用同一套感官标准去评价一杯咖啡，那么咖啡行业就会有一套共同的通用的国际化规范语言去交流相关的咖啡风味。这将会为整个咖啡行业来一个强大的助推，使得这个行业的产业链获得更大的提升，无论是质量以及价值上的。

咖啡感官词典的并不是要代替以往的评测体系，也不是想象中的全球适用

本手册并不是用于代替杯测或者其他感官工具。杯测是一个非常规范且重要的评测过程。它对于咖啡种植者，咖啡采购者，或其他咖啡的从业人员去评价咖啡的缺点和生豆质量都具有重要的作用。

本手册可以是一个对于咖啡售卖或采购人员的一套附加的咖啡评价工具，但它并不是一个现有工具的替代品。

现时的咖啡感官词典并不是**真正意义上全球可用**。我们一开始就将本词典定位为一个国际化的工具供咖啡专家和从业人员使用，而实际上，它现在还不具有国际性。本书中所采用的具体参考物都是在美国广泛可用的物品，这意味着在其他国家并不能完整或者完全一致的采用所有相同的参照物。这也是本词典在将来会着重去做的事，以提供统一的咖啡风味校正标准。

我们期望可以使本词典可以在更多不同的地区提供本地化的版本。我们也致力于解决现时不能国际化使用的限制性，在每个不同的地区我们可以通过学习并且收纳更多的咖啡相关的信息，以使本词典更加专业且权威。

World Coffee Research™ 咖啡感官词典并未真正完成，正如一本本词典，词汇会顺应着时代以及文化的更替有更多释义补充进去，本书亦是如此。每当新的咖啡品种被发现或被培育出来，或者生豆的加工处理，烘焙的工艺，又或是制作咖啡的方法出现了改变或者扩充，这都会使得本词典得到扩充。你所阅读的本词典，撰写于105只经过综合选择的阿拉比卡咖啡豆，但并不意味当中的词汇就是最终的或者是完整的定义。撰写本词典的科学家们，对这些样品进行试验，并对每一个在它们身上发现的风味项进行命名，不过很显然，科学家们不可能对每一种可能存在的咖啡做品测分析（毕竟再牛的咖啡狗都不可能完成的哈哈）。当然，我们同样会有位置去扩充我们的词典，以用于表示在风味强度上的强弱，假如市面上会有更好的参考物，可以更广泛的使用的话，我们也会作出相应的替换或扩充。获取更多有关你如何对我们扩充本词典进行帮助，请看文后的“这是一本动态更新的档案”。

World Coffee Research™ 咖啡感官词典并不是一个评析咖啡的瑕疵风味的工具，你所看到的本书，该版本的词典撰写于非瑕疵的咖啡豆。某种程度上说，风味(flavor)或者香气(aroma)中，我们传统上认为瑕疵风味(如：苯酚、陈腐/霉味)应该包含在词典当中，因为我们的科学家在创建本词典的时候，我们从评测样品的环节中发现了这些瑕疵风味项。而当中某些缺陷，瑕疵风味有可能使得一款咖啡不能进入市场当中，我们就没有把它记载到本书当中。

在未来，本词典将会扩充更多我们一般认为是瑕疵风味的风味项。以提供更多风味上更全面的涵盖性。

如何使用World Coffee Research™ 咖啡感官词典

黑莓¹

甜味，深沉的味道，水果般的味道，花香，微酸，略带些与黑莓混合在一起的木质类的香气²

REFERENCE | 参照物

Smucker's Blackberry Jam³
盛美家黑莓果酱

INTENSITY | 强度

Flavor: 5.5⁴
风味: 5.5

PREPARATION | 准备

Serve jam in a 1-ounce cup. Cover with a plastic lid.⁵
把果酱倒入一个 1 盎司的杯中，并用盖子盖起来

上面是一则本词典的示例。词典中的每一个元素的释义用法如下：

1. 风味项的名字：这一项是感官科学家在撰写本词典时所确定存在于咖啡当中的感官风味项(味觉/taste, 嗅觉/smell, 或口感/mouthfeel)，并对其进行描述性命名。第一个版本的World Coffee Research™ 咖啡感官词典包含110个风味项。

2. 定义：每一个风味项都有一个定义，以清晰，并描述所列出风味项的意义给读者。

3. 参照物：对于每一个风味项，都会有相应的参照物提供衡量的标准。上文给出的例子只有一个参照物，但其他有可能有 2 到 3 个，甚至还会有4个。比方说，烟熏味的风味项有 3 个参照物：3 个参照物用于衡量香气/aroma (二苄基二硫/Benzyl disulfide, 木灰/ wood ashes, 和熏杏仁/smoked almonds)，一个参照物用于衡量风味/flavor (熏杏仁/smoked almonds)。参照物有可能用于评价 风味/flavor 和 香气/aroma, 又或是同时包含两者，如上文一样，熏杏仁同时用于香气，风味的参照。有时同一个参照物有可能用于超过一个风味项，比方说，【烤花生】这一参照物同时用于 花生 和 烘烤味的参照。

4.强度分值：每一个参照物都会有一个给出强度的分值 (0-15之间)。对于World Coffee Research 咖啡感官词典而言，强度的分值是一个非常关键性的属性。以使得本书不仅仅是一个可用于描述性的工具，且是一个衡量咖啡风味强度的工具。它可以允许评测者可以量化衡量咖啡样品中的 风味/flavor和 香气/aroma 风味项的分值。强度分值可使评测者通过参考已给出的参照物，并与其分值对应，对评测中的咖啡样品分配适当的分数。

比方说，【榛果】该风味项有两个关于 风味/flavor 的参照物：

- 第一项是用 1/8茶匙的 味好美牌/McCormick 榛果汁置入一杯牛奶当中搅匀，这一项可以为评测者提供 风味/flavor 强度分值3.5。
 - 第二项是采用同样的榛果汁，但用的是双份的量，1/4茶匙 置入一杯牛奶中，这一项可提供 6.0 的强度分值。
- 如果你在评测咖啡样品当中的【榛果】风味/flavor 的强度，但它的强度比第一项的参照物高，但又比第二项低一点，那这个风味强度的分值可以判定为5.5分。

15分的强度分值表 (见下图)，适用于对不同种类的食物做感官分析。



- 5.准备说明：每一个参照物都包含了相应的准备说明，包括了如何准备：盛放，放在什么容易，怎么放置。
- 举个例子：词典当中在进行 香气/aroma 的参照物准备时，都会建议使用小的玻璃杯（子弹杯 1Oz），并盖上玻璃片。这能很好地确保了参照物的香气不会污染到桌上的其他参照物。
- 遵循准备说明来准备参照物可以确保参照物所表述的强度为一个正确的强度分值。

感官科学家使用World Coffee Research 咖啡感官词典的方法

感官审议组的小组成员，对烘焙好的咖啡样品进行标准化冲煮，并在咖啡液的高温段对该咖啡样品进行分析。（除此之外，本词典可用于分析不同的冲煮方式，当然，每种冲煮方式的参数都会相应的有所不同）。通常情况下，一个受专业训练的审议组会用15分钟的时间去评测，分析一个具有35-40个风味项的咖啡样品。（如果咖啡样品中包含更多的风味项，这个时间将会更长）

由于咖啡与其他食品对比时，会感受到它明显的苦味，因此感官审议组通常只会在一个评测期(1.5-2小时)内对4-6个咖啡样品进行评测，以避免感官疲劳。而为了确保统计的有效性，每一个咖啡样品都会进行三次的盲测分析。（这意味着每一位评测的成员都不会确切的知道评测的是那一款咖啡）

在评测阶段开始之后，审议组都会有 2-3个的对咖啡样品的评测方向。当确保所有组员都做好了风味校准，且一致认为该风味项存在于咖啡样品当中时，审议组将对其进行更进一步的分析。

在评测咖啡样品时，审议组会安静，沉默的进行。开始时所有组员都会闻每一个咖啡样品的香气，对当下所感受到的风味进行讨论并确定，并对所确定的香气风味项进行强度分值的判定。然后审议组重复上述同样的过程，对 味道/taste 和 回甘/aftertaste 的各风味项进行强度分值的分配。一旦所有咖啡样品都完成评测，将对本次评测获得的所有数据进行统计分析，并用于解决研究的问题。

World Coffee Research 咖啡感官词典的撰写过程

本词典撰写于位于Kansas State大学内的感官分析中心的Edgar Chambers IV, Ph D. 实验室。这是现今世上最先进的感官科学研究中心之一。

创建本词典的第一步，通过查阅已有的咖啡感官科学文献，确定咖啡当中的基础风味项。第二步，建立一个经过感官训练的咖啡感官审议组。10个来自Kansas State大学的感官科学家组成小组，与来自Sensory Spectrum(国际知名的感官科学研究公司)的顾问团用超过50小时的时间进行咖啡风味的感官训练，以提高他们的咖啡品测的感官经验。

下一步，在感官分析中心的咖啡审议组委员会对咖啡样品(13个样品为一组)进行分析评测。他们会一起讨论决定一系列在咖啡样品中所品测到的风味项，也会根据以往的感官经验提出其他咖啡上的风味术语。在整个过程中，小组成员会采取达成共识这一方式来决定风味项，这意味着在审议组的所有成员都在同一风味项上达成一致前，这一个风味项不会被正式记载。同样地，达成共识这一方式都会被用于决定风味项的【定义】，【参照物】，【强度分值】。

咖啡样品的评测分析从咖啡 香气/aroma开始，然后到 风味/flavor, 回甘/aftertaste，再到 口感/texture, 丰沛度/amplitude。在 评测分析 香气的阶段，审议组会拿起一杯杯的咖啡样品，进行3-4次的快速的嗅探，以检测咖啡样品当中的香气。接下来审议组会啜吸咖啡液以检测咖啡当中的风味，口感，以及丰沛度。最后，他们会等待15秒，感受咖啡的回甘。评测阶段结束后，审议组对每一组被提出的风味项引入可复制的参照物，并一次次的内部商讨、更改，直至所有参与者都一致同意这个参照物通过并可以使用。

评测分析咖啡样品的第一阶段带领我们发现了 74个咖啡风味项，这一系列的风味包含了最常见的咖啡风味特性（在绝大部分样品中都能品测得到），但也有少数的独特的风味项仅仅只出现在 1个或少数的咖啡样品当中。第二阶段则开始于新增的咖啡样品，并由第二个训练有素的感官审议组于Texas A&M 大学的Rhonda Miller实验室进行后续的工作(包括之前第一阶段所发现的风味项的验证，以及最终词典风味的验证)。通过整个修订和确认的过程，很多的风味参照物也得到了更好的优化。比方说，对于【坚果】这一术语，参照物从一开始的混合杏仁榛果，到更改为之后的混合杏仁核桃，这使得参考项能给出更吻合【坚果】特性的辨析风味。

整个项目回顾，所有的审议组成员使用了超过100小时的时间对105个来自13个国家咖啡样品进行评测分析，最终在写下了本词典第一版的最终版本，一个包含了110个风味项的World Coffee Research 咖啡感官词典。

在撰写的过程当中，本书所发现的风味项也接受了来自各公司的咖啡业内资深人士的审查。正是这群先驱的贡献，才得以让我们的工作室充满讨论，才得以让这一个个的咖啡风味项得以被发现，也才得以让那一个个咖啡感官描述方法得到证明。Paul Songer, 超凡一杯的技术指导，没有他的对咖啡样品的筹备安排，以及与行内工作室的协调联系工作，本书的撰写也未能如愿的顺利。感谢以上这些可爱的咖啡人。

这是一本动态的词典

World Coffee Research 咖啡感官词典是一本动态的词典，它会随着新风味项和参考项的变化而作出更新。

如果你认为本词典有相关的风味项缺失了，我们欢迎您提交相关的审议资料给我们核实。我们同时也欢迎更好的风味参照物的提出，我们也会对其审查并进行替换。

新的风味项 提交审议必须符合以下的条件：

- 所提出风味项的【名称】
- 所提出风味项的【定义】以及相关【参照物】材料
- 一份详尽的解释——有关该风味项与其他词典中相似的风味项的不同之处
- 提供一份你认为可展示新的咖啡风味项的天然的咖啡豆样品，并确保你是按照我们的指引去处理该咖啡，从而发现新的咖啡风味项。

提出新的咖啡风味参照物或提出修订 提交审议必须符合以下条件：

- 书中存在相关的风味项
- 你所提交的参照物素材的名字/品牌，所提交风味项必须合理且可广泛的在美国市场中主要的连锁商店或在线商店有售
- 一份详尽的解释——有关于为什么新的参照物更好于现有参照物，或是新参照物如何提高感官体验

提交申请信件当中请提供以下信息——你联系方式(手机，邮箱)；以及咖啡样品或咖啡风味参照物信息。

以下为投递地址：

Rhonda Miller

Animal Science

Room 310 Kleberg

2471 Texas A&M University

College Station, TX 77843-2471

审查程序：我们的经专业训练的咖啡感官审议组会审查所提交的资料及样品。

对于新的咖啡风味项：审议组会商讨并决定被提出的咖啡风味项是否存在于咖啡样品当中，确保该风味项不是以其他术语进行描述的已有风味项；再而，审议组会对其进行最终定义，并为其参照物进行强度分值的分配。

对于被提出的新参照物：审议组会测试被提出的参照物，并与已有参照物对比，以检验新参照物是否提升感官体验。

只有在通过这一系列的认证过程，新的项目才会被添加到词典当中

咖啡的未来

本词典是一个理解咖啡，提高咖啡质量，并确保高品质咖啡时代存在的重要工具。他将大大的推进咖啡科学家的工作，包括那些正在为咖啡农研究如何让咖啡更具生产力且持续性，那些为了消费者喝到更好喝的咖啡，还有那些为了让以咖啡谋生的人更有而在努力的遗传学家，种植学家，和农业学家们。

我们World Coffee Research™的使命：

在种植，保护，提高高品质咖啡供应的同时提高种植咖啡的咖啡农的收入以及生活水平。

我们秉承着这样的使命来撰写本咖啡感官词典。支持我们使得未来的咖啡科学得到更多的创新——当然最终的目的。依然是让咖啡农得到更好的生计保障。如果你想支持我们的工作，成为World Coffee Research™的一员，欢迎访问我们的网站：

worldcoffeeresearch.org



**VERSION
2.0
—
2017**

SENSORY LEXICON

Unabridged Definition and References



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Members of the Sensory Lexicon Advisory Group include:

- Lindsey Bolger, *Keurig Green Mountain Coffee*
- Bruce Bria, *Royal Cup Coffee and Tea*
- Gail Vance Civile, *Sensory Spectrum*
- Brent Ginn, *The J.M. Smucker Company*
- Peter Giuliano, *Specialty Coffee Association of America*
- Chris Hallien, *Kraft Foods*
- Timothy Hill, *Counter Culture Coffee*
- Ali Johnston, *Keurig Green Mountain Coffee*
- Chris Kerth, *Texas A&M University*
- Doug Langworthy, *Starbucks*
- Rhonda Miller, *Texas A&M University*
- Thompsen Owen, *Sweet Maria's*
- Mark Romano, *Illycaffé*
- Trish Rothgeb, *Wrecking Ball Roasters & Coffee Quality Institute*
- Emma Sage, *Specialty Coffee Association of America*
- Christy Thorns, *Allegro Coffee*

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INTRODUCTION

Coffee is one of the most chemically complex things we consume, with subtleties of aroma, texture, and flavor rivaled by almost no other food, and it can seem as if its flavors are infinite. But they are not.

Coffee, like anything else we eat or drink, tastes, smells, and feels the way it does because locked inside the coffee bean is a complex molecular and genetic code that determines what we experience. Every flavor, every aroma, every texture originates in a set of chemicals, which in turn are determined by the seed's genes, by how and where the coffee was grown, and by everything it has experienced since leaving the tree (processing, drying, milling, storage, transport, roasting, brewing and so on).

The goal of the World Coffee Research Sensory Lexicon is to use for the first time the tools and technologies of sensory science to understand and name coffee's primary sensory qualities, and to create a replicable way of measuring those qualities.

Just like a dictionary reflects broad, expert agreement about the words that make up a given language, the lexicon contains the tastes, aromas, and textures that exist in coffee as determined by sensory experts and coffee industry leaders.

Why We Need the World Coffee Research Sensory Lexicon

Creating the World Coffee Research Sensory Lexicon—a universal language of coffee's sensory qualities, and a tool for measuring them—is the necessary first step to understanding what causes coffee to taste, smell, and feel the way it does. What are the genes that make a coffee more or less bitter? What are the environmental factors that give a coffee an orange acidity instead of a lime one? Does anything happen to the flavor of a coffee when you use one kind of fertilizer in place of another? Or rain water instead of irrigation? What if you stop the fermentation process at a certain Ph level instead of after a certain amount of time? Or use a particular yeast strain? We know that storing green coffee in one kind of bag versus another can decrease woodiness, but by how much? The list of questions you can pose—and begin to answer—when you have a tool to quantify coffee's tastes and flavors is almost endless.

The lexicon was created by World Coffee Research to enable coffee scientists to conduct research that will make coffee better—starting with the seed itself. For example, in order to breed new varieties of coffee that are not only productive, disease resistant, and climate resilient, but also taste amazing, we need to understand which molecules in a coffee are connected to which flavors, and then understand how those molecules are produced. To do that, you have to have a reliable and repeatable way to measure the flavors and their relative magnitude.

Despite the fact that we have many good tools for evaluating coffee, such as rigorous cupping protocols, none of them is suitable for scientific inquiry. There are three things about the lexicon that are fundamentally different from other sensory evaluation tools:

1. It is descriptive. The World Coffee Research Sensory Lexicon doesn't have categories for "good" and "bad" attributes, nor does it allow for ranking coffee quality. It is purely a descriptive tool, which allows you to say with a high degree of confidence that a coffee tastes or smells like X, Y, or Z.

2. It is quantifiable. The World Coffee Research Sensory Lexicon allows us not only to say that, for example, a given coffee has blueberry in its flavor or aroma, but that it has blueberry at an intensity of 4 on a 15-point scale. This allows us to compare differences among coffees with a significantly higher degree of precision.

3. It is replicable. When the World Coffee Research Sensory Lexicon is used properly by trained sensory professionals the same coffee evaluated by two different people—no matter where they are, what their prior taste experiences is, what culture they originate from, or any other difference among them—will achieve the same intensity score for each attribute. An evaluator in Texas will get “blueberry, flavor: 4” just the same as one in Bangalore.

These three factors allow us to ask and answer scientific questions, like how a given factor X (coffee variety, farm management practice, brewing method, etc.) impacts the flavor of a coffee. Controlling for as many factors other than the X factor as possible, we can submit the coffee samples for evaluation to a group of sensory scientists who have been trained in the use of the lexicon. They can assess the samples, and then analyze what the sensory assessment tells us about the research question. Sensory scientists trained on the coffee lexicon typically work in groups, called panels, to make sure that no one taster skews the results. A typical panel has 5 to 7 tasters, who train for six to nine months to achieve calibration with the lexicon and with each other before they begin evaluating samples.

Non-scientific Uses for the World Coffee Research Sensory Lexicon

When a research question is being posed, coffee samples should be evaluated by a trained sensory panel. At the time the World Coffee Research Sensory Lexicon was published, there were two sensory panels trained on its use in the United States. Obviously, scientific questions shade easily into questions that arise daily in the business of coffee. As soon as it was created, we knew there would be interest from the coffee industry about how the lexicon could help their work. And in fact, larger coffee companies already use similar tools in their quality control and R&D work. (Not to mention those in industries other than coffee. There are wine lexicons, beer lexicons, cheese lexicons—even meat and marijuana lexicons.) A coffee roasting company might use the lexicon to determine how a change in the roast profile of a coffee impacts the expression of nutty or chocolate flavors, for example. Coffee buyers might use it to source blend components that will give them a desired, consistent flavor profile. Quality control managers might use it to calibrate their tasters. It can also be used for fun.

Until now, such tools have not been widely available for broad use by the coffee industry. Critically, the World Coffee Research Sensory Lexicon was also developed with the goal of universal standardization in mind. If the industry as a whole—from producers to roasters—can make use of a single lexicon for sensory evaluation, coffee will have for the first time a universal language of flavor. It would be a powerful tool for increasing both quality and value up and down the supply chain.

A Note on What the World Coffee Research Sensory Lexicon Is Not

The World Coffee Research Sensory Lexicon is not a replacement for cupping or other sensory tools.

Cupping is a very specific and important evaluation process. It is extremely useful for coffee producers, buyers, and others in the coffee business for evaluating coffee defects and coffee quality. The Lexicon can be an additional evaluation tool in the toolbox of coffee sellers and buyers, but it is not a replacement for existing tools.

The World Coffee Research Sensory Lexicon is not truly global. While we aim for the lexicon to be a universal tool for coffee scientists and industry, in its present form, it is not truly global. Many of the references used in the lexicon are only widely available in mass market grocery store chains in the United States, where

the lexicon was developed and where World Coffee Research will do most of its sensory evaluations in the near future (for example, Lorna Doone brand cookies or Green Giant brand cut green beans). However, for this second edition of the lexicon published in 2017 an important new set of globally available references was added to the lexicon. FlavorActiV, a global sensory company and supplier to 9 out of 10 of the world’s largest beverage companies, has created pharmaceutical grade, shelf-stable, food-safe, flavor references for 24 attributes in the lexicon.

Even though references for some attributes are still not easy to come by outside the US, this limitation of the lexicon doesn’t mean it isn’t globally relevant or useful. The research being conducting using the lexicon will be used to study and improve coffee from every part of the world.

The World Coffee Research Sensory Lexicon is not finished. A sensory lexicon, like a dictionary of words, is by nature an evolving document. As new coffee varieties are discovered or developed, and processing, roasting, and preparation methods change or expand, the universal vocabulary for coffee’s sensory attributes will necessarily grow. The version of the World Coffee Research Sensory Lexicon you are reading was developed based on the review of 105 Arabica coffee samples—a comprehensive selection, but by no means a definitive or complete one. The scientists who developed the lexicon looked at these samples and named the attributes they found present in them, but they obviously did not evaluate every possible coffee. There is also room to expand the references in the lexicon to include some with higher and lower intensities, and some that might be more widely available than the ones currently listed, as in this second edition. For information on how you can contribute to the expansion of the lexicon, see “A Living Document” below.

The World Coffee Research Sensory Lexicon is not a tool for evaluating defective coffees. The lexicon is completely value-neutral. It only describes the flavors and aromas present in coffee and helps to measure their intensity. It doesn’t assign a value to those flavors or aromas. To the extent that a flavor or aroma traditionally considered a defect (for example, Phenol or Musty) is included in the lexicon, it is because the scientists who created the lexicon found some amount of those attributes in the samples they evaluated. It’s possible the lexicon will expand in the future to provide more comprehensive coverage of attributes commonly considered to be defects.

Blackberry¹

The sweet, dark, fruity, floral, slightly sour, somewhat woody aromatic associated with blackberries.²

REFERENCE	INTENSITY	PREPARATION
Smucker’s Blackberry Jam ³	Flavor: 5.5 ⁴	Serve jam in a 1-ounce cup. Cover with a plastic lid. ⁵

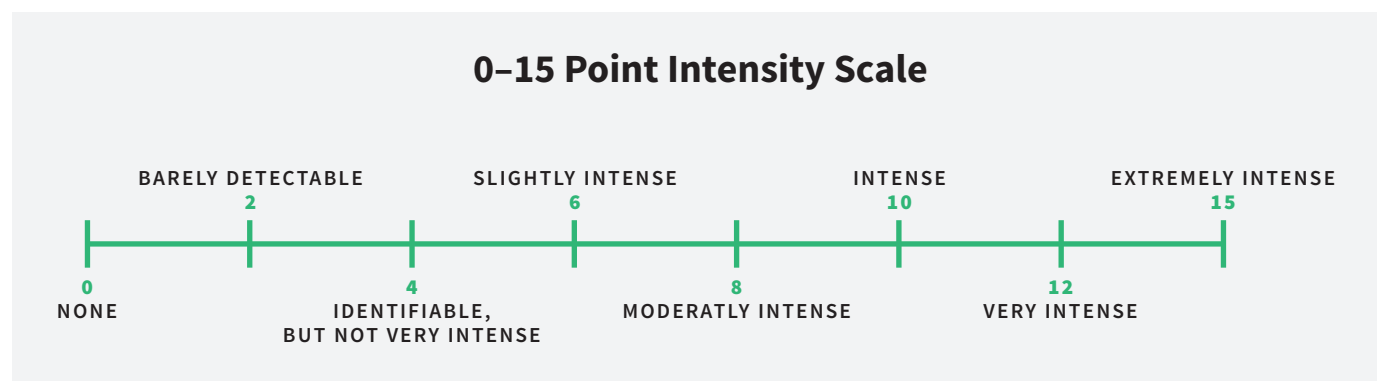
Using the World Coffee Research Sensory Lexicon

Above is a diagram of a sample lexicon entry. The elements of the lexicon are as follows:

- 1. Attribute name:** This is the descriptive name given to the sensory attribute (taste, smell, or mouthfeel) that sensory scientists determined are present in coffee over the course of developing the lexicon. The first edition of the World Coffee Research Sensory Lexicon contains 110 attributes.
- 2. Definition:** Each attribute has a definition that clarifies and describes what the attribute name means.

3. References: For each attribute, references are provided that serve as the standard against which that attribute is measured. The above example has only one reference. But others might have two or three or even four. For example, the Smoky attribute has three references: three references for aroma (benzyl disulfide, wood ashes, and smoked almonds) and one reference for flavor (smoked almonds). References may be used to evaluate either flavor or aroma (or both), as indicated. Sometime the same reference is used for more than one attribute. For example, roasted peanuts are used as a reference for the attributes Peanut and Roasted.

4. Intensity score: Most references have been given an intensity score on a scale of 1 to 15 and labeled as either an aroma or a flavor reference. The intensity score is the critical factor that makes the World Coffee Research Sensory Lexicon not just a descriptive tool but a measurement one—it allows evaluators to measure the amount of a given flavor or aroma attribute in a coffee sample. The intensity score allows evaluators to compare the strength of the attribute in the sample against the strength in the reference(s) and to assign the appropriate score to the sample. For example, Hazelnut has two flavor references. The



first is a solution of 1/8 teaspoon of McCormick Imitation Hazelnut Extract in 1 cup of milk, which gives an intensity of 3.5. The second is double strength (1/4 teaspoon in 1 cup milk), which has an assigned intensity score of 6.0. If you are evaluating the intensity of hazelnut flavor in a coffee sample, and it's notably higher than the first reference and a little below the second, it might receive an intensity score of 5.5. The 15-point intensity scale (see above) is used for many kinds of foods in sensory analysis.

Some references do not possess an intensity score (for example, FlavorActiV 0920 "sour," a reference for the attribute Sour). In these cases, the reference has been validated and approved for use as a quality representation of the flavor attribute, but has not undergone assessment to determine a *World Coffee Research Sensory Lexicon* intensity score.

5. Preparation instructions: Each reference includes instructions for preparation, including serving instructions. For example, it's always preferable to use covered glass sniffers for aroma references so that aromas don't contaminate one another on the table. Following the preparation instructions will ensure that each reference represents the correct intensity. For FlavorActiV references, please follow instructions on flavor standard use, which can be found at <https://www.flavoractiv.com/coffee-sensory-solutions/>

Steps

- Before evaluations begin, the panel has two to three orientation sessions with the sample coffees, during which they ensure that all panelists are calibrated and discuss which of the lexicon attributes are present in the samples and will be evaluated in the formal analysis.
- The panelists prepare the references for the identified attributes following the preparation instructions outlined in the lexicon.
- Panelists brew the roasted coffees using assigned brewing protocol, storing coffee in a thermally protective container until panelists are ready for the evaluation.
- In the sample analysis, panelists *smell* references labeled aroma, and *taste* references labeled flavor, and then either smell or taste the coffee sample to compare it against the aroma or flavor of the reference.
- Panelists assign each sample an intensity score for each attribute being evaluated.

The Way Sensory Scientists Use the World Coffee Research Sensory Lexicon

Sensory panelists brew the roasted coffees they are evaluating using a standard set of instructions and evaluate the samples hot. (Unless, of course, the lexicon is being used to evaluate different brewing methodologies, which case the brewing parameters would vary.) Typically, it takes a trained panel about 15 minutes to evaluate one coffee sample on 35-40 attributes (it would take longer to evaluate more attributes). Because coffee has significant bitterness compared with other food products, panelists usually only evaluate four to six samples in a session (1.5-2 hours) to avoid sensory fatigue. In order to ensure statistical validity of sensory evaluations, each sample coffee is evaluated three times in a blinded process (meaning that panelists are not aware which coffee is which). Before evaluations begin, the panel will have two to three orientation sessions with the sample coffees, during which they ensure that all panelists are calibrated and discuss which attributes are present in the samples and will be evaluated in the formal analysis.

The evaluation of samples is usually silent. Panelists smell each coffee, consulting references as appropriate, and assign aroma intensity scores. They repeat the process for taste and aftertaste. Once all samples are complete, statistical analyses are run to answer the research questions being addressed by the evaluation.

How the World Coffee Research Sensory Lexicon Was Developed

The lexicon was developed in the lab of Edgar Chambers IV, Ph.D., at the Sensory Analysis Center at Kansas State University, one of the world's premier sensory science centers.

The first step in creating the lexicon was to identify the basic attributes present in coffee by consulting the published literature of coffee sensory science. The next step was to create a trained sensory panel for coffee. A group of 10 sensory scientists from Kansas State University spent more than 50 hours training with a coffee consultant from Sensory Spectrum with the purpose of increasing their experience in coffee tasting.

Next, the panelists at the Sensory Analysis Center evaluated a group of 13 coffee samples. They determined every attribute that was detectable in any quantity. Researchers also proposed other terms based on previous experience. Throughout the process, the panelists used a consensus process to determine the attributes, meaning the entire panel had to agree on an attribute before it could be included. Consensus was also required to determine the definitions, references, and intensity scores for references for each attribute.

The evaluation of coffee samples began with aroma, then flavor, aftertaste, and texture and amplitude. For aroma evaluation each panelist lifted a glass snifter of the sample coffee and took 3 to 4 short sniffs to detect the smells that were present. Next, panelists sipped the samples to evaluate flavor, texture and amplitude. And finally, they waited 15 seconds to determine aftertaste. For each group of attributes that was proposed, references were introduced and then modified until each of the participants agreed on them.

The first phase of development led to the detection of 74 attributes, a list that included most of the commonly found characteristics in coffee but also some unique ones found in only one or a few coffee samples. Subsequent sessions were held with additional coffee samples, and the entire lexicon was validated by a second trained sensory panel in the lab of Rhonda Miller at Texas A&M University. Through this process of revision and confirmation, many of the references also evolved. For example, for the term Nutty the reference was changed from a blend of almonds and hazelnuts to a blend of almonds and walnuts, which gave a closer match to the overall nutty character. In total, the panelists spent more than 100 hours evaluating 105 coffee samples from 13 countries to create the final World Coffee Research Sensory Lexicon, which grew to 110 attributes.

The process was also vetted by coffee industry veterans from both large and small companies in a workshop where the full list of attributes were presented and discussed, and the sensory descriptive

method demonstrated. Paul Songer, technical director of the Cup of Excellence program, coordinated the preparation of coffee samples and industry workshop.

A Living Document

The World Coffee Research Sensory Lexicon is a living document, and will be updated to include new attributes and references over time. If you believe there is an attribute missing from this lexicon, we invite you to submit it for consideration. We will also consider the submission of new references to replace existing ones.

New attributes for consideration must be submitted with the following:

- The proposed attribute name
- A proposed definition and reference material
- An explanation of how the term is different from similar terms in the lexicon
- A sample of unflavored coffee beans that you believe exhibit the new attribute, processed according to our guidelines

New or revised references for consideration must be submitted with the following:

- The existing attribute term
- The name/brand of your proposed new reference material, which must be reasonably/widely available for purchase in the United States through major chain stores or online
- An explanation of how the new reference is better than or enhances the existing references

To submit your suggestions for changes, please send an email to info@worldcoffeeresearch.org, with your name and contact information (including email and phone number), and information about the coffee sample or reference you are submitting (see above). We will respond within one week with instructions on how to submit your sample.

Review process: A trained sensory panel will review submissions and samples. For new attributes, the panel will determine if the proposed attribute exists in the sample, ensure that it doesn't duplicate information in other terms, determine a final definition, and determine an intensity for the reference. For proposed new references, the panel will test the proposed reference against the existing reference and verify that it is an improvement. Only after this verification process will new terms be added to the lexicon.

A Note on the Second Edition

The main addition to the second edition of the World Coffee Research Sensory Lexicon is the addition of new, globally available references for 24 attributes: Sour, Bitter, Salty, Apple, Grape, Coconut, Pineapple, Acetic acid, Butyric acid, Isovaleric acid, Fermented, Peapod, Fresh, Papery, Musty/Earthy, Musty/Dusty, Moldy/Damp, Phenolic, Petroleum, Brown Spice, Almond, Vanillin, Floral, and Jasmine.

While non-grocery-store references have been available for coffee *aroma* commercially for many years (primarily from Le Nez du Cafe), shelf-stable, food-safe, globally available references for *flavor* have never been available for coffee before. The references, created by UK-based flavor standards company FlavorActiV, will substantially expand the global applicability of the coffee lexicon. A portion of sales of FlavorActiV products supports World Coffee Research. They can be ordered at <https://www.flavoractiv.com/product-category/beverages/coffee-flavour-standards/>

The Future of Coffee

The lexicon is an essential tool for understanding—and increasing—coffee quality and for ensuring that high-quality coffee exists for generations to come. It will significantly advance the work of coffee scientists, including molecular geneticists, breeders, and agronomists, who are studying how to make coffee more productive and resilient for coffee farmers, better tasting for coffee drinkers, and more valuable for everyone who earns a living from coffee.

The mission of World Coffee Research is:

To grow, protect, and enhance supplies of quality coffee while improving the livelihoods of the families who produce it.

We created the World Coffee Research Sensory Lexicon with that mission in mind. Supporting World Coffee Research enables future innovation in coffee science—and, ultimately, better livelihoods for coffee farmers. If you would like to support our work by becoming a World Coffee Research member, visit worldcoffeeresearch.org.



**WORLD COFFEE
RESEARCH**

SENSORY LEXICON



SWEET

A fundamental taste factor of which sucrose is typical.

REFERENCE	INTENSITY	PREPARATION
1.0% sucrose solution	Flavor: 1.0	Serve juice in a 1-ounce cup. Cover with a plastic lid.

SOUR

The fundamental taste factor associated with a citric acid solution.

REFERENCE	INTENSITY	PREPARATION
0.015% citric acid solution	Flavor: 1.5	Serve solution in a 1-ounce cup. Cover with a plastic lid.
0.05% citric acid solution	Flavor: 3.5	Serve solution in a 1-ounce cup. Cover with a plastic lid.
FlavorActiV "sour" (citric acid) https://www.flavoractiv.com/product/sour-flavour-standard-2/		Prepare according to FlavorActiV package instructions.

BITTER

The fundamental taste factor associated with a caffeine solution.

REFERENCE	INTENSITY	PREPARATION
0.01% caffeine solution	Flavor: 2.0	Serve solution in a 1-ounce cup. Cover with a plastic lid.
0.02% caffeine solution	Flavor: 3.5	Serve solution in a 1-ounce cup. Cover with a plastic lid.
0.035 % caffeine solution	Flavor: 5.0	Serve solution in a 1-ounce cup. Cover with a plastic lid.
0.05% caffeine solution	Flavor: 6.5	Serve solution in a 1-ounce cup. Cover with a plastic lid.
FlavorActiV "bitter" (iso-alpha-acids) https://www.flavoractiv.com/product/bitter-flavour-standard-sensory-kit/		Prepare according to FlavorActiV package instructions

*A portion of sales of this product support World Coffee Research. This reference has been validated and approved for use as a quality representation of the named flavor attribute, but has not undergone assessment to determine a Sensory Lexicon intensity score.

SALTY

A fundamental taste factor of which sodium chloride is typical.

REFERENCE	INTENSITY	PREPARATION
0.15% sodium chloride solution	Flavor: 1.5	Serve solution in a 1-ounce cup. Cover with a plastic lid.
FlavorActiV "salty" (sodium chloride) https://www.flavoractiv.com/product/salty-flavour-standard/		Prepare according to FlavorActiV package instructions.

*A portion of sales of this product support World Coffee Research. This reference has been validated and approved for use as a quality representation of the named flavor attribute, but has not undergone assessment to determine a Sensory Lexicon intensity score.



FRUITY

A sweet, floral, aromatic blend of a variety of ripe fruits.

REFERENCE	INTENSITY	PREPARATION
Juicy Juice 100% Juice Kiwi Strawberry	Aroma: 3.0	Mix 1 part water and 1 part juice. Place ¼ cup of mixture in a medium snifter. Cover.
	Flavor: 4.0	Serve juice in a 1-ounce cup. Cover with a plastic lid.
Le Nez du Café n.17 “apple”	Aroma: 7.0	Place 1 drop of essence on a cotton ball in a large snifter. Cover.

BERRY

The sweet, sour, floral, sometimes heavy aromatic associated with a variety of berries such as blackberries, raspberries, blueberries, or strawberries.

REFERENCE	INTENSITY	PREPARATION
Private Selection Triple Berry Preserves	Aroma: 10.0	Place 1 teaspoon of jelly in a medium snifter. Cover.
	Flavor: 9.0	Place 1 teaspoon in a 1-ounce cup. Cover with a plastic lid.
Welch’s Unfiltered 100% Juice Blackberry	Flavor: 7.5	Serve juice in a 1-ounce cup. Cover with a plastic lid.

Strawberry

The somewhat sweet, slightly sour, floral, fruity, frequently winey aromatic associated with strawberry.

REFERENCE	INTENSITY	PREPARATION
Dole Whole Strawberries All Natural	Aroma: 13.0	Thaw strawberries in refrigerator overnight. Serve at room temperature in 3.25-ounce cup. Cover with a plastic lid.
	Flavor: 6.0	Thaw strawberries in refrigerator overnight. Serve at room temperature in 3.25-ounce cup. Cover with a plastic lid.

Raspberry

The lightly sweet, fruity, floral, slightly sour and musty aromatic associated with raspberries.

REFERENCE	INTENSITY	PREPARATION
Jell-O Raspberry (dry gelatin powder)	Flavor: 6.5	Served dry powder in a 1-ounce cup. Cover with a plastic lid.

Blueberry

The slightly dark, fruity, sweet, slightly sour, musty, dusty, floral aromatic associated with blueberry.

REFERENCE	INTENSITY	PREPARATION
Oregon Fruit Products Blueberries in Light Syrup (canned)	Aroma: 6.5	Put 1 teaspoon of syrup from canned blueberries in a medium snifter. Cover.
	Flavor: 6.0	Serve blueberries in a 1-ounce cup. Cover with a plastic lid.

Blackberry

The sweet, dark, fruity, floral, slightly sour, somewhat woody aromatic associated with blackberries.

REFERENCE	INTENSITY	PREPARATION
Smucker's Blackberry Jam	Flavor: 5.5	Serve jam in a 1-ounce cup. Cover with a plastic lid.

DRIED FRUIT

An aromatic impression of dark fruit that is sweet and slightly brown and is associated with dried plums and raisins.

REFERENCE	INTENSITY	PREPARATION
Sunsweet Amaz!n Prune Juice	Aroma: 3.0	Mix 1 part juice with 2 parts water. This may be prepared 24 hours in advance and refrigerated. Bring to room temperature for serving. Serve 1 tablespoon in a medium snifter. Cover.
	Flavor: 4.5	Mix 1 part juice with 2 parts water. This may be prepared 24 hours in advance and refrigerated in coded, lidded 1-ounce cups. Bring to room temperature for serving.
Mixture of Sun-Maid Raisins and Sun-Maid Prunes	Aroma: 5.0	Mix 1/4 cup raisins (whole) and 1/4 cup prunes (chopped). Add 3/4 cup water and cook in microwave on high for 2 minutes. Filter with a sieve. Place 1 tablespoon of liquid juice in a medium snifter. Cover.

DRIED FRUIT *Cont.*

REFERENCE	INTENSITY	PREPARATION
	Flavor: 6.0	Mix ¼ cup raisins (whole) and ¼ cup prunes (chopped). Add ¾ cup water and cook in microwave on high for 2 minutes. Filter with a sieve. Place the mixture in a blender and mix for 1 minute at medium speed. Serve the paste of raisins and prunes in a 1-ounce cup. Cover with a plastic lid.

Raisin

The concentrated, sweet, somewhat sour, brown, fruity, floral aromatic characteristic of dried grapes.

REFERENCE	INTENSITY	PREPARATION
Sun-Maid Raisins	Aroma: 6.0	Chop 1/2 cup of raisins. Add ¾ cup water and cook in microwave on high for 2 minutes. Filter with a sieve. Place 1 tablespoon of liquid juice in a medium snifter. Cover.
	Flavor: 5.5	Chop 1/2 cup of raisins. Add ¾ cup water and cook in microwave on high for 2 minutes. Filter with a sieve. Serve juice in a 1-ounce cup. Cover with a plastic lid.

Prune

The sweet, slightly brown, floral, musty and overripe aromatic impression of dark fruit associated with dried plums.

REFERENCE	INTENSITY	PREPARATION
Sun-Maid Prunes	Aroma: 4.5	Chop 1/2 cup prunes. Add ¾ cup of water and cook in microwave on high for 2 minutes. Filter with a sieve. Place 1 tablespoon of juice in a medium snifter. Cover.
	Flavor: 5.0	Chop 1/2 cup prunes. Add ¾ cup of water and cook in microwave on high for 2 minutes. Filter with a sieve. Pour juice into a 1-ounce cup. Cover with plastic lid.

OTHER FRUIT

A sweet, light, fruity, somewhat floral, sour, or green aromatic that may include apples, grapes, peaches, pears, or cherries.

REFERENCE	INTENSITY	PREPARATION
Le Nez du Café n.17 “apple”	Aroma: 7.0	Place 1 drop of essence on a cotton ball in a large snifter. Cover.

Apple

A sweet, light, fruity, somewhat floral aromatic commonly associated with fresh or processed apples.

REFERENCE	INTENSITY	PREPARATION
Le Nez du Café n.17 “apple”	Aroma: 5.0	Place 1 drop of essence on a cotton ball in a large snifter. Cover.
Gerber 2nd Foods Applesauce	Flavor: 6.0	Serve applesauce in a 1-ounce cup. Cover with a plastic lid.
FlavorActiV “apple” (ethyl hexanoate) https://www.flavoractiv.com/product/ethyl-hexanoate-flavour-standard-2/	 *	Prepare according to FlavorActiV package instructions.

Pear

The sweet, slightly floral, musty, woody, fruity aromatic associated with pears.

REFERENCE	INTENSITY	PREPARATION
Jumax Pear Nectar (can)	Flavor: 7.5	Serve juice in a 1-ounce cup. Cover with a plastic lid.

Peach

The floral, perfuming, fruity, sweet, slightly sour aromatic associated with peaches.

REFERENCE	INTENSITY	PREPARATION
Fresh peach pit	Aroma: 8.0	Put clean peach pit in a medium snifter. Cover.
Jell-O Peach (dry gelatin powder)	Flavor: 7.0	Serve dry powder in a 1-ounce cup. Cover with a plastic lid.

Grape

The sweet, fruity, floral, slightly sour, musty aromatic commonly associated with grapes.

REFERENCE	INTENSITY	PREPARATION
Welch’s 100% Juice Unfiltered Concord Grape	Flavor: 5.0	Mix 1 part grape juice with 1 part water. Serve in a 1-ounce cup. Cover with a plastic lid.
FlavorActiV “grape” (methyl anthranilate) https://www.flavoractiv.com/product/grape-flavour-standard/	 *	Prepare according to FlavorActiV package instructions.

*A portion of sales of this product support World Coffee Research. This reference has been validated and approved for use as a quality representation of the named flavor attribute, but has not undergone assessment to determine a Sensory Lexicon intensity score.

Cherry

The sour, fruity, slightly bitter, floral aromatic associated with cherries.

REFERENCE	INTENSITY	PREPARATION
R.W. Knudsen Just Tart Cherry Juice	Flavor: 4.0	Mix 1 part cherry juice with 2 parts water. Serve in a 1-ounce cup. Cover with a plastic lid.

Pomegranate

A sour, sweet fruity aromatic that may be somewhat dark, musty and earthy, reminiscent of dark fruits and root vegetables such as beets and carrots; may also have an astringent mouthfeel.

REFERENCE	INTENSITY	PREPARATION
R.W. Knudsen Organic Just Pomegranate Juice	Aroma: 5.5	Serve 2 tablespoons of juice in a medium snifter. Cover.
	Flavor: 7.5	Serve the juice in a 1-ounce cup. Cover with a plastic lid.

Coconut

The slightly sweet, nutty, somewhat woody aromatic associated with coconut.

REFERENCE	INTENSITY	PREPARATION
Coconut imitation extract	Aroma: 7.5	Place 1 drop of coconut extract on a cotton ball in a medium snifter. Cover.
FlavorActiV “coconut” (whiskey lactone) https://www.flavoractiv.com/product/coconut-flavour-standard/	 *	Prepare according to FlavorActiV package instructions.

Pineapple

The sweet, slightly sharp, fruity aromatic associated with pineapple.

REFERENCE	INTENSITY	PREPARATION
Dole Pineapple Juice (canned)	Aroma: 6.5	Mix 1 part pineapple juice and 1 part water. Serve 1 tablespoon of juice in a medium snifter. Cover.
	Flavor: 6.0	Mix 1 part pineapple juice and 1 part water. Serve juice in a 1-ounce cup. Cover with a plastic lid.

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REFERENCE	INTENSITY	PREPARATION
FlavorActiV "pineapple" (ethyl butyrate) https://www.flavoractiv.com/product/ethyl-butylate-flavour-standard/	 *	Prepare according to FlavorActiV package instructions.

CITRUS FRUIT

A citric, sour, astringent, slightly sweet, peely, and somewhat floral aromatic that may include lemons, limes, grapefruits, or oranges.

REFERENCE	INTENSITY	PREPARATION
Peels of lemon and lime	Aroma: 4.5	Put 0.5 grams lemon peel and 0.5 grams lime peel in a medium snifter. Cover.
Grapefruit peel	Aroma: 7.5	Put 0.25 grams grapefruit peel in a medium snifter. Cover.
Five Alive Citrus (frozen concentrate)	Flavor: 6.5	Prepare the concentrate according to the package directions. Serve prepared juice in 1-ounce cups. Cover with a plastic lid.

Lemon

The citric, sour, astringent, slightly sweet, peely and somewhat floral aromatic associated with lemon.

REFERENCE	INTENSITY	PREPARATION
Fresh lemon juice	Aroma: 5.0	Juice a lemon. Dilute with water, 1 part juice to 4 parts water. Pour ¼ cup in a medium snifter. Cover.
	Flavor: 7.0	Juice a lemon. Dilute with water, 1 part juice to 4 parts water. Serve in a 1-ounce cup. Cover with a plastic lid.
Le Nez du Café n. 15 'lemon'	Aroma: 5.5	Place 1 drop of essence on a cotton ball in a large snifter. Cover.

Grapefruit

The citric, sour, bitter, astringent, peely, sharp, slightly sweet aromatic associated with grapefruit.

REFERENCE	INTENSITY	PREPARATION
Ocean Spray 100% White Grapefruit Juice	Flavor: 11.0	Serve juice in a 1-ounce cup. Cover with a plastic lid.
Kroger 100% White Grapefruit Juice	Flavor: 13.5	Serve juice in a 1-ounce cup. Cover with a plastic lid.

Orange

The citric, sweet, floral, slightly sour aromatic associated with oranges, which may include bitter, peely, and astringent notes.

REFERENCE	INTENSITY	PREPARATION
Tropicana Pure Premium Original 100% No Pulp Orange Juice	Flavor:10.0	Serve juice in a 1-ounce cup. Cover with a plastic lid.

Lime

The citric, sour, astringent, bitter, green, peely, sharp and somewhat floral aromatic associated with limes.

REFERENCE	INTENSITY	PREPARATION
Lime peel	Aroma: 6.5	Put 0.25 grams lime peel in a medium snifter. Cover.
RealLime 100% Lime Juice	Flavor: 7.0	Serve juice in a 1-ounce cup. Cover with a plastic lid.



SOUR

See “Taste Basics,” p. 13

SOUR AROMATICS

An aromatic associated with the impression of a sour product.

REFERENCE	INTENSITY	PREPARATION
Bush’s Pinto Beans (canned)	Aroma: 2.0	Drain beans and rinse with deionized water. Place 1 tablespoon in a medium snifter at room temperature. Cover.

ACETIC ACID

A sour, astringent, slightly pungent aromatic associated with vinegar.

REFERENCE	INTENSITY	PREPARATION
0.5% acetic acid solution	Aroma: 2.0	Serve in a 1-ounce cup. Cover with a plastic lid.
	Flavor: 2.0	Serve in a 1-ounce cup. Cover with a plastic lid.
1.0% acetic acid solution	Aroma: 2.5	Serve in a 1-ounce cup. Cover with a plastic lid.
	Flavor: 3.0	Serve in a 1-ounce cup. Cover with a plastic lid.
2.0% acetic acid solution	Aroma: 3.0	Serve in a 1-ounce cup. Cover with a plastic lid.
	Flavor: 4.5	Serve in a 1-ounce cup. Cover with a plastic lid.
FlavorActiV “acetic” (acetic acid)  https://www.flavoractiv.com/product/acetic-acid-flavour-standard/		Prepare according to FlavorActiV package instructions.

*A portion of sales of this product support World Coffee Research. This reference has been validated and approved for use as a quality representation of the named flavor attribute, but has not undergone assessment to determine a Sensory Lexicon intensity score.

BUTYRIC ACID

A sour, fermented-dairy aromatic associated with certain aged cheeses such as Parmesan.

REFERENCE	INTENSITY	PREPARATION
0.4 µl/l butyric acid solution	Aroma: 2.5	Serve in a 1-ounce cup. Cover with a plastic lid.
	Flavor: 3.0	Serve in a 1-ounce cup. Cover with a plastic lid.
FlavorActiV "butyric" (butyric acid) https://www.flavoractiv.com/product/butyric-acid-flavour-standard/		Prepare according to FlavorActiV package instructions.

ISOVALERIC ACID

A pungent, sour aromatic associated with sweaty, perspiration-generated foot odor and certain aged cheeses such as Romano.

REFERENCE	INTENSITY	PREPARATION
0.2 µl/l isovaleric acid solution	Aroma: 3.0	Serve in a 1-ounce cup. Cover with a plastic lid.
	Flavor: 4.0	Serve in a 1-ounce cup. Cover with a plastic lid.
FlavorActiV "isovaleric (cheese)" (isovaleric acid) https://www.flavoractiv.com/product/isovaleric-acid-flavour-standard/		Prepare according to FlavorActiV package instructions.

CITRIC ACID

A mild, clean, sour aromatic with slight citrus notes accompanied by astringency.

REFERENCE	INTENSITY	PREPARATION
0.025 % citric acid solution	Aroma: 0.0	Serve in a 1-ounce cup. Cover with a plastic lid.
	Flavor: 2.5	Serve in a 1-ounce cup. Cover with a plastic lid.
0.05 % citric acid solution	Aroma: 0.0	Serve in a 1-ounce cup. Cover with a plastic lid.
	Flavor: 3.5	Serve in a 1-ounce cup. Cover with a plastic lid.

*A portion of sales of this product support World Coffee Research. This reference has been validated and approved for use as a quality representation of the named flavor attribute, but has not undergone assessment to determine a Sensory Lexicon intensity score.

MALIC ACID

A sour, sharp, somewhat fruity aromatic accompanied by astringency.

REFERENCE

0.5 g/l malic acid solution

1.0 g/l malic acid solution

INTENSITY

Flavor: 3.0

Flavor: 5.0

PREPARATION

Serve in a 1-ounce cup. Cover with a plastic lid.

Serve in a 1-ounce cup. Cover with a plastic lid.



ALCOHOL

A colorless, pungent, chemical-like aromatic associated with distilled spirits or grain products.

REFERENCE	INTENSITY	PREPARATION
Absolut Vodka (80 Proof)	Aroma: 5.0	Dilute 16 milliliters of vodka with 64 milliliters of water. Serve in a large snifter. Cover.

WHISKEY

The aromatic associated with distilled products from fermented grain mash.

REFERENCE	INTENSITY	PREPARATION
Jack Daniel's Tennessee Whiskey Old No. 7	Aroma: 5.5	Serve ½ cup whiskey in a large snifter. Cover.

WINEY

The sharp, pungent, somewhat fruity, alcohol-like aromatic associated with wine.

REFERENCE	INTENSITY	PREPARATION
Yellow Tail Cabernet Sauvignon	Aroma: 10.0	Serve ½ cup of wine in a large snifter. Cover.

FERMENTED

The pungent, sweet, slightly sour, sometimes yeasty, alcohol-like aromatic characteristic of fermented fruits or sugar or over-proofed dough.

REFERENCE	INTENSITY	PREPARATION
Guinness Extra Stout beer	Aroma: 5.0	Fill 2-ounce aroma jars approximated 1/3 full. Prepare one jar for every three participants. This may be prepared 24 hours in advance and left at room temperature.

FERMENTED *Cont.*

REFERENCE	INTENSITY	PREPARATION
Fermented grass	Aroma: 7.0	Fill 2-ounce glass jars half full with grass and seal tightly with screw-on lids. Leave in airtight container for 2 weeks to ferment. Serve in jar; prepare one jar for every three panelists.
FlavorActiV "fermented" (ethyl isovalerate) https://www.flavoractiv.com/product/fermented-flavour-standard/		Prepare according to FlavorActiV package instructions.

OVERRIPE/NEAR FERMENTED

The sweet, slightly sour, damp, musty/earthy aromatic characteristic of fruit or vegetable past their optimum ripeness.

REFERENCE	INTENSITY	PREPARATION
Overripe banana	Aroma: 6.5	Freeze an overripe banana. Microwave the frozen banana for 1 minute. Mash the cooked banana. Serve 1 teaspoon of mash in a medium snifter. Cover.
	Flavor: 6.5	Freeze an overripe banana. Microwave the frozen banana for 1 minute. Mash the cooked banana. Place mash in a 1-ounce cup. Cover with a plastic lid.

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OLIVE OIL

A light, oily aromatic which may have buttery, green, peppery, bitter, and sweet notes.

REFERENCE	INTENSITY	PREPARATION
Bertolli Extra Virgin Olive Oil	Aroma: 8.5	Put 1 tablespoon in a medium snifter. Cover.

RAW

An aromatic associated with uncooked products.

REFERENCE	INTENSITY	PREPARATION
Fisher Natural Whole Almonds	Flavor: 3.0	Serve the almonds in a 1-ounce cup. Cover with a plastic lid.

UNDER-RIPE

An aromatic found in green/under-ripe fruit.

REFERENCE	INTENSITY	PREPARATION
Grapefruit peel	Aroma: 7.5	Put 0.25 grams of grapefruit peel in a medium snifter. Cover.

PEAPOD

Green aromatic that is sweet, beany, fresh, raw, and musty/earthy.

REFERENCE	INTENSITY	PREPARATION
Le Nez du Café, no. 3 “garden peas”	Aroma: 7.0	Place 1 drop of essence on a cotton ball in a large snifter. Cover.
FlavorActiV “under-ripe fruit” (acetaldehyde) https://www.flavoractiv.com/product/peapod-flavour-standard/	 *	Prepare according to FlavorActiV package instructions.

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GREEN

An aromatic characteristic of fresh, plant-based material. Attributes may include leafy, viney, unripe, grassy, and peapod.

REFERENCE	INTENSITY	PREPARATION
Parsley water	Aroma: 9.0	Rinse and chop 25 grams of fresh parsley. Add 300 milliliters of water. Let sit for 15 minutes. Filter out the parsley. Serve 1 tablespoon of the water in a medium snifter. Cover.
	Flavor: 6.0	Rinse and chop 25 grams of fresh parsley. Add 300 milliliters of water. Let sit for 15 minutes. Filter out the parsley. Serve 2 teaspoons of the water in a 1-ounce cup. Cover with a plastic lid.

FRESH

A green aromatic associated with newly cut grass and leafy plants, characterized by a sweet and pungent character.

REFERENCE	INTENSITY	PREPARATION
Fresh green grass	Aroma: 7.0	Break in half 5 pieces of grass and place into a medium snifter. Cover. Prepare one snifter for every three panelists. Prepare on the day of evaluation so the grass does not ferment and change aroma.
FlavorActiV “freshly cut grass” (cis-3-hexanol) https://www.flavoractiv.com/product/fresh-flavour-standard/		Prepare according to FlavorActiV package instructions.

DARK GREEN

The aromatic commonly associated with cooked green vegetables such as spinach, kale, or green beans that may include bitter, sweet, dusty, musty, or earthy elements, and may have a dark, heavy impression.

REFERENCE	INTENSITY	PREPARATION
Green Giant Cut Green Beans (canned, liquid of)	Aroma: 5.0	Place 1 tablespoon of liquid from canned vegetables in a medium snifter. Cover.
	Flavor: 6.0	Serve liquid from canned vegetables in 1-ounce cup. Cover with a plastic lid.
Del Monte Leaf Spinach (canned, liquid of)	Aroma: 7.0	Place 1 tablespoon of liquid from canned vegetables in a medium snifter. Cover.
	Flavor: 6.0	Serve liquid from canned vegetables in 1-ounce cup. Cover with a plastic lid.

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VEGETATIVE

Sharp, slightly pungent aromatic associated with green plant or vegetable matter such as parsley, spinach, or peapod.

REFERENCE	INTENSITY	PREPARATION
Cut Asparagus Spears (canned)	Flavor: 6.0	Drain liquid from can, saving vegetable water. Place approximately 3 pieces of asparagus and 1 tablespoon of liquid into 1-ounce cups. Cover with a plastic lid. This may be prepared 24 hours in advance and refrigerated. Bring to room temperature for serving.

HAY-LIKE

The lightly sweet, dry, dusty aromatic with slight green character associated with dry grasses.

REFERENCE	INTENSITY	PREPARATION
McCormick Parsley Flakes	Aroma: 7.5	Place 1 teaspoon of flakes in a medium snifter. Cover.

HERB-LIKE

The aromatic commonly associated with green herbs that may be characterized as sweet, slightly pungent, and slightly bitter. May or may not include green or brown notes.

REFERENCE	INTENSITY	PREPARATION
Mixture of McCormick Bay Leaves, McCormick Ground Thyme, and McCormick Basil Leaves	Aroma: 6.0	Mix together 0.5 grams of each herb. Break the bay leaves into smaller pieces with your hands first, and then grind all the herbs together using a mortar and pestle. Add 100 milliliters of water. Mix well. Put 5 milliliters of herb water in a medium snifter, and add 200 milliliters of water. Cover.
	Flavor: 5.0	Mix together 0.5 grams of each herb. Break the bay leaves into smaller pieces with your hands first, and then grind all the herbs together using a mortar and pestle. Add 100 milliliters of water. Mix well. Mix 5 milliliters of herb water with 200 milliliters of water and serve in a 1-ounce cup. Cover with a plastic lid.

BEANY

An aromatic characteristic of beans and bean products that contains musty/earthy, musty/dusty, sour aromatic, bitter aromatic, starchy, and green/peapod, nutty or brown elements.

REFERENCE	INTENSITY	PREPARATION
Bush's Pinto Beans (canned)	Aroma: 7.0	Drain beans and rinse with de-ionized water. Place 1 tablespoon in a medium snifter at room temperature. Cover.
	Flavor: 7.5	Drain beans and rinse with de-ionized water. Serve in 1-ounce cups. Cover with a plastic lid.



STALE

The aromatic characterized by a lack of freshness.

REFERENCE	INTENSITY	PREPARATION
Mama Mary's Gourmet Original Pizza Crust	Aroma: 4.5	Serve cut a 2-inch square of crust and serve in a medium snifter. Cover.
	Flavor: 4.0	Serve cut a 2-inch square and serve in a 3.25-ounce cup. Cover with a plastic lid.

PAPERY

The aromatic associated with white paper cups.

REFERENCE	INTENSITY	PREPARATION
Pure Brew coffee filters	Flavor: 2.5	Submerge a stack of 15 coffee filters in 48 ounces boiling water overnight. Remove filters and place remaining water into 1-ounce cups. Cover with a plastic lid. This may be prepared in 24 hours advance and stored at room temperature.

FlavorActiV "papery"
(trans-2-nonenal)
<https://www.flavoractiv.com/product/papery-flavour-standard-2/>

Prepare according to FlavorActiV package instructions.

CARDBOARD

The aromatic associated with cardboard or paper packaging.

REFERENCE	INTENSITY	PREPARATION
Cardboard	Aroma: 7.5	Cut a 2-inch square of cardboard. Place in 1/2 cup water. Serve in a medium snifter. Cover.

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WOODY

The sweet, brown, musty, dark aromatic associated with a bark of a tree.

REFERENCE	INTENSITY	PREPARATION
Diamond Shelled Walnuts	Aroma: 4.0	Chop walnuts. Place 1 tablespoon of chopped walnuts in a medium snifter. Cover.
	Flavor: 4.0	Serve walnuts in a 1-ounce cup. Cover with a plastic lid.
Popsicle sticks	Aroma: 7.5	Break popsicle sticks to fit in sample cups of any size. Cover with a plastic lid. This may be prepared in advance.

MUSTY/EARTHY

The somewhat sweet, heavy aromatic associated with decaying vegetation and damp, black soil.

REFERENCE	INTENSITY	PREPARATION
Miracle-Gro Potting Mix soil	Aroma: 9.0	Fill a 2-ounce glass jar half full with potting soil and seal tightly with screw-on type lid. Prepare one jar for every three panelists.
Le Nez du Café no. 1 “earthy”	Aroma: 12.0	Place 1 drop of essence on a cotton ball in a large snifter. Cover.
FlavorActiv “wet earthy” (2-ethyl fenchol) https://www.flavoractiv.com/product/musty-earthy-coffee-flavour-standard/		Prepare according to FlavorActiv package instructions.

MUSTY/DUSTY

The aromatic associated with dry, closed-air spaces such as attics and closets. May have elements of dry, musty, papery, dry soil, or grain.

REFERENCE	INTENSITY	PREPARATION
Kretschmer Wheat Germ	Aroma: 5.0	Serve 1 tablespoon wheat germ in a medium snifter. Cover.
2, 3, 4 – Trimethoxybenzaldehyde	Aroma: 10.0	Place 0.1 gram in a medium snifter. Cover.

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MUSTY/DUSTY *Cont.*

REFERENCE	INTENSITY	PREPARATION
FlavorActiV "dry earth" (geosmin) https://www.flavoractiv.com/product/musty-dusty-flavour-standard/	 *	Prepare according to FlavorActiV package instructions.

MOLDY/DAMP

The aromatic associated with damp, closed spaces or basements. May be musty, sharp, and slightly green.

REFERENCE	INTENSITY	PREPARATION
2-Ethyl-1-Hexanol 10,000 ppm	Aroma: 6.0	Place 1 drop on a cotton ball and serve in a medium snifter. Cover.
2,3,5,6 – Tetrachloroanisole	Aroma: 10.0	Place 0.1 gram in a medium snifter. Cover.
FlavorActiV "moldy-damp" (2, 4, 6 trichloroanisole) https://www.flavoractiv.com/product/mouldy-damp-flavour-standard/	 *	Prepare according to FlavorActiV package instructions.

PHENOLIC

The aromatic described as damp, musty, and like animal hide. Reminiscent of a tack room.

REFERENCE	INTENSITY	PREPARATION
Phenylacetic acid	Aroma: 6.0	Serve 0.15g of phenylacetic acid in a medium snifter. Cover.
FlavorActiV "medicinal (o-cresol)" (Methyl Phenol) https://www.flavoractiv.com/product/medicinal-flavour-standard/	 *	Prepare according to FlavorActiV package instructions.

ANIMALIC

A combination of the aromatics associated with farm animals and live-animal habitation.

REFERENCE	INTENSITY	PREPARATION
Unflavored gelatin	Aroma: 3.0	Dissolve 1 bag of gelatin (1/4 ounce) in 2 cups distilled water. Place ¼ cup of gelatin water in a medium snifter. Cover.

MEATY/BROTHY

The aromatic associated with boiled meat, soup, or stock, with weak meaty notes.

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**BITTER**

See “Taste Basics,” p. 14

SALTY

See “Taste Basics,” p. 14

MEDICINAL

A clean, sterile aromatic characteristic of antiseptic-like products such as Band-Aids, alcohol, and iodine.

REFERENCE	INTENSITY	PREPARATION
Iodine	Aroma: 3.0	Serve 1/4 cup iodine in a medium snifter. Cover.
Alcohol	Aroma: 5.0	Serve 1/4 cup alcohol in a medium snifter. Cover.
Le Nez du Café no. 35 “medicinal”	Aroma: 6.0	Place 1 drop of essence on a cotton ball in a large snifter. Cover.
Band-Aid Plastic Strips adhesive bandage	Aroma: 6.0	Place 1 bandage in a medium snifter. Cover.

RUBBER

A dark, heavy, slightly sharp, and pungent aromatic associated with rubber.

REFERENCE	INTENSITY	PREPARATION
A&W Rubber Bands	Aroma: 5.0	Place 10 grams of rubber bands in a medium snifter. Cover.

PETROLEUM

A specific chemical aromatic associated with crude oil and its refined products, which have heavy oil characteristics.

REFERENCE	INTENSITY	PREPARATION
Vaseline petroleum jelly	Aroma: 3.0	Place a teaspoon of jelly in a medium snifter. Cover.
FlavorActiV "diesel/motor fuel" (p-cymene) https://www.flavoractiv.com/product/petroleum-flavour-standard/		Prepare according to FlavorActiV package instructions.

SKUNKY

A combination of aromatics associated with skunks.

REFERENCE	INTENSITY	PREPARATION
Latex balloon	Aroma: 2.5	Place 2 balloons in a 2-ounce glass jar with screw-type lid. This may be prepared several days in advance and stored at room temperature. Prepare one jar for every three panelists.

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TOBACCO

The brown, slightly sweet, slightly pungent aromatic associated with cured tobacco.

REFERENCE	INTENSITY	PREPARATION
Le Nez du Café no. 33 “pipe tobacco”	Aroma: 5.0	Place 1 drop of essence on a cotton ball in a large snifter. Cover.
Camel cigarettes (Turkish and Domestic blend)	Aroma: 7.0	Break cigarette and place 0.1 grams tobacco in a medium snifter. Cover.
Cigar tobacco	Aroma: 10.5	Split cigar into a 2-ounce glass jar with screw-on type lid. Fill jars approximately 1/3 full. Prepare 1 jar for every three panelists.
Unscented pipe tobacco	Aroma: 10.5	Fill a 2-ounce glass jar with screw-on type lid approximately 1/3 full with tobacco and seal tightly. Prepare 1 jar for every three panelists.

PIPE TOBACCO

The brown, sweet, slightly pungent, fruity, floral, spicy aromatic associated with cured tobacco.

REFERENCE	INTENSITY	PREPARATION
Carter Hall Pipe Tobacco	Aroma: 6.5	Put 1 teaspoon of tobacco in a medium snifter. Cover.

ACRID

The sharp, pungent, bitter, acidic aromatic associated with products that are excessively roasted or browned.

REFERENCE	INTENSITY	PREPARATION
Alf's Natural Nutrition Red Wheat Cereal	Aroma: 3.0	Serve 2 tablespoons cereal in a medium snifter. Cover.
	Flavor: 3.0	Serve 1 tablespoon cereal in a 1-ounce cup. Cover with a plastic lid.
Wright's Liquid Smoke Mesquite	Aroma: 9.5	Place 1 drop of liquid smoke on a cotton ball in a large snifter. Cover.

ASHY

The dry, dusty, dirty, smoky aromatic associated with the residual of burnt products.

REFERENCE	INTENSITY	PREPARATION
Gerkens 10/12 Midnight Black heavily alkalized cocoa powder	Aroma: 2.5	Put ½ teaspoon of cocoa powder in a medium snifter. Cover.
	Flavor: 3.5	Mix ¼ teaspoon cocoa powder with 100 milliliters water. Serve in a 1-ounce cup. Cover with a plastic lid.
Benzyl disulfide	Aroma: 4.0	Place 0.1 gram of benzyl disulfide in a medium snifter. Cover.
Paper ashes	Aroma: 4.0	Obtain ashes from burned white paper and place in 2-ounce glass jars with screw-on type lids. Fill jars approximately 1/3 full. This may be prepared several days in advance and stored at room temperature, tightly sealed. Prepare one jar for every three panelists.

BURNT

The dark brown impression of an over-cooked or over-roasted product that can be sharp, bitter, and sour.

REFERENCE	INTENSITY	PREPARATION
Benzyl disulfide	Aroma: 4.5	Place 0.1 gram of benzyl disulfide in a medium snifter. Cover.
Raw peanuts, over-roasted/burnt	Flavor: 7.5	Preheat oven to 425°F. Place raw, blanched peanuts in a single layer on a baking sheet lined with parchment paper. Roast for 20 minutes. Peanuts will be burnt. Serve in a 1-ounce cup. Cover with a plastic lid.
Alf’s Natural Nutrition Red Wheat Cereal	Aroma: 8.0	Serve 1 tablespoon of cereal in a medium snifter. Cover.
	Flavor: 3.0	Place 1 tablespoon of cereal in a 1-ounce cup. Cover with a plastic lid. Cereal should be tasted two at a time.

SMOKY

An acute, pungent aromatic that is a product of the combustion of wood, leaves, or a non-natural product.

REFERENCE	INTENSITY	PREPARATION
Benzyl disulfide	Aroma: 3.5	Place 0.1 gram of benzyl disulfide in a medium snifter. Cover.
Diamond Smoked Almonds	Aroma: 6.0	Place 5 almonds in a medium snifter. Cover.
	Flavor: 5.0	Place 1 tablespoon of almonds in a 3.25 ounce cup. Cover with a plastic lid.

SMOKY Cont.

REFERENCE	INTENSITY	PREPARATION
Wood Ashes	Aroma: 5.0	Obtain ashes from burned wood (from fireplace or outdoor fire pit). Place ashes in 2-ounce glass jars with screw-on type lids. Fill jars approximately 1/3 full. This may be prepared several days in advance and stored at room temperature, tightly sealed. Prepare one jar for every three participants.

ROASTED

Dark brown impression characteristic of products cooked to a high temperature by dry heat. Does not include bitter or burnt notes.

REFERENCE	INTENSITY	PREPARATION
Raw blanched peanuts, lightly roasted	Flavor: 2.5	Preheat oven to 425°F. Place peanuts in a single layer on a baking sheet lined with parchment paper. Roast for 7 minutes. Peanuts will not show any color. Serve in a 1-ounce cup. Cover with a plastic lid.
Raw blanched peanuts, medium-roasted	Flavor: 6.5	Preheat oven to 425°F. Place peanuts in a single layer on a baking sheet lined with parchment paper. Roast for 10 minutes or until peanuts are medium brown in color. Serve in a 1-ounce cup. Cover with a plastic lid.
Raw blanched peanuts, dark-roasted	Flavor: 9.5	Preheat oven to 425°F. Place peanuts in a single layer on a baking sheet lined with parchment paper. Roast for 15 minutes or until peanuts are dark brown in color. Serve in a 1-ounce cup. Cover with a plastic lid.
Raw blanched peanuts, over-roasted/burnt	Flavor: 15.0	Preheat oven to 425°F. Place peanuts in a single layer on a baking sheet lined with parchment paper. Roast for 20 minutes. Peanuts will be burnt. Serve in a 1-ounce cup. Cover with a plastic lid.

BROWN, ROAST

A rich, full, round aromatic impression always characterized as some degree of darkness, generally associated with attributes such as toasted, nutty, roasted, and sweet.

REFERENCE	INTENSITY	PREPARATION
Bush’s Pinto Beans (canned)	Aroma: 6.0	Place 1 tablespoon in a medium snifter at room temperature. Cover.
	Flavor: 3.0	Drain beans and rinse with de-ionized water. Serve in a 1-ounce cup. Cover with a plastic lid.
C&H Pure Cane Sugar, Golden Brown	Aroma: 3.0	Place 1 teaspoon of sugar in a medium snifter. Cover.
	Flavor: 7.0	Place 1 teaspoon of sugar in a 1-ounce cup. Cover with a plastic lid.



GRAIN

The light brown, dusty, musty, sweet aromatic associated with grains.

REFERENCE	INTENSITY	PREPARATION
Mixture of General Mills Rice Chex, General Mills Wheaties and Quaker Quick Oats cereals	Aroma: 5.0	Mix together ½ cup of each kind of cereal. Put in a blender and “pulse” blend into small particles. Place 1 tablespoon in a medium snifter. Cover.
	Flavor: 8.0	Mix together ½ cup of each kind of cereal. Put in a blender and “pulse” blend into small particles. Serve 1 teaspoon in a 1-ounce cup. Cover with a plastic lid.

MALT

The light brown, dusty, musty, sweet, sour and or slightly fermented aromatic associated with grains.

REFERENCE	INTENSITY	PREPARATION
Post Grape-Nuts cereal	Aroma: 3.5	Place 1 tablespoon of cereal in a medium snifter. Cover.
	Flavor: 8.0	Serve cereal in a 1-ounce cup. Cover with a plastic lid.



PUNGENT

A sharp, physically penetrating sensation in the nasal cavity.

REFERENCE	INTENSITY	PREPARATION
Majestic Mountain Sage Orange Essential Oil, Brazil	Aroma: 5.0	Mix 1 drop essential oil into 1 tablespoon 3% sucrose solution. Serve in a medium snifter. Cover.

PEPPER

The spicy, pungent, musty, and woody aromatic characteristic of ground black pepper.

REFERENCE	INTENSITY	PREPARATION
McCormick Ground Black Pepper	Aroma: 13.0	Place ½ teaspoon pepper in a medium snifter. Cover.

ANISE

A pungent, sweet, brown, caramelized aromatic that may contain petroleum, medicinal, and floral notes.

REFERENCE	INTENSITY	PREPARATION
Tone's Pure Anise Extract	Aroma: 7.5	Place 1 drop of anise extract on a cotton ball in a large snifter. Cover.

NUTMEG

A wet, brown, woody, pungent, petroleum-like, heavy aromatic with a slightly lemony impression.

REFERENCE	INTENSITY	PREPARATION
McCormick Ground Nutmeg	Aroma: 9.0	Place ¼ teaspoon nutmeg in a covered medium snifter. Cover.

BROWN SPICE

The sweet, brown aromatic associated with spices such as cinnamon, clove, nutmeg, and allspice.

REFERENCE	INTENSITY	PREPARATION
Private Selection Cinnamon Sticks	Aroma: 3.0	Place 1 cinnamon stick in a 2-ounce glass jar with screw-on type lid. Prepare one per every four panelists. May be prepared 24 hours in advance and stored with tightly sealed lid.
Private Selection Nutmeg (whole) and Private Selection Clove (whole)	Aroma: 7.0	Place 1 whole nutmeg and 3 clove buds in a 2-ounce glass jar with screw-on type lid. Prepare one per every four participants. May be prepared 24 hours in advance and stored with tightly sealed lid. (Note: If unable to find whole nutmeg, substitute ¼ teaspoon of ground nutmeg.)
Ground cinnamon, allspice, nutmeg, and clove mixture	Aroma: 10.5	Mix together 0.25 grams ground cinnamon, 0.25 grams ground allspice, 0.25 grams ground nutmeg, and 0.06 grams ground cloves. Serve 1/4 teaspoon of spice mixture in a medium snifter. Cover.
FlavorActiV “phenolic” (4-vinyl guaiacol) https://www.flavoractiv.com/product/brown-spice-flavour-standard/		Prepare according to FlavorActiV package instructions.

CINNAMON

A sweet, brown, slightly woody, slightly pungent, spicy aromatic.

REFERENCE	INTENSITY	PREPARATION
McCormick Ground Cinnamon	Aroma: 13.0	Place ¼ teaspoon of cinnamon in a medium snifter. Cover.

CLOVE

A sweet, brown, spicy, pungent, floral, citrus, medicinal, and slightly minty aromatic.

REFERENCE	INTENSITY	PREPARATION
Le Nez du Café no. 7 “clove” n.7	Aroma: 6.5	Place 1 drop of essence on a cotton ball in a large snifter. Cover.

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NUTTY

A slightly sweet, brown, woody, oily, musty, astringent, and bitter aromatic commonly associated with nuts, seeds, beans, and grains.

REFERENCE	INTENSITY	PREPARATION
Le Nez du Café no. 29 “roasted hazelnuts”	Aroma: 7.5	Place 1 drop of essence on a cotton ball in a large snifter. Cover.
Mixture of Diamond Sliced Almonds and Diamond Shelled Walnuts	Flavor: 7.5	Puree the almonds and walnuts separately in blenders for 45 seconds on high speed. Combine equal amounts of the chopped nuts. Serve in 1-ounce cups. Cover with a plastic lid.

ALMOND

A sweet, light brown, woody, and buttery aromatic with floral and fruity notes that may include rose, cherry, and apricot. It is also astringent and may be slightly smoky.

REFERENCE	INTENSITY	PREPARATION
Le Nez du Café no. 27 “roasted almonds”	Aroma: 7.0	Place 1 drop of essence on a cotton ball in a large snifter. Cover.
FlavorActiV “almond” (benzaldehyde) https://www.flavoractiv.com/product/almond-benzaldehyde-flavour-standard/		Prepare according to FlavorActiV package instructions.

HAZELNUT

A woody, brown, sweet, musty/earthy, slightly cedar aromatic. May include floral, beany, oily, astringent, and bitter flavor notes.

REFERENCE	INTENSITY	PREPARATION
Le Nez du Café no. 29 “roasted hazelnuts”	Aroma: 5.5	Place 1 drop of essence on a cotton ball in a large snifter. Cover.

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HAZELNUT *Cont.*

REFERENCE	INTENSITY	PREPARATION
McCormick Imitation Hazelnut Extract, in milk	Flavor: 3.5	Place ⅛ teaspoon of hazelnut extract in 1 cup of whole milk. Cover with a plastic lid.
McCormick Imitation Hazelnut Extract, in milk	Flavor: 6.0	Place ¼ teaspoon of hazelnut extract in 1 cup of whole milk. Cover with a plastic lid.

PEANUTS

A sweet, light brown, oily, somewhat musty/dusty, beany aromatic that may be slightly astringent.

REFERENCE	INTENSITY	PREPARATION
Raw blanched bulk peanuts, roasted	Aroma: 8.5	Preheat oven to 425°F. Place raw, blanched peanuts in a single layer on a baking sheet lined with parchment paper. Roast for 10 minutes or until peanuts are medium brown in color. Chop peanuts and serve 1 tablespoon in a medium snifter. Cover.
	Flavor: 7.5	Preheat oven to 425°F. Place raw, blanched peanuts in a single layer on a baking sheet lined with parchment paper. Roast for 10 minutes or until peanuts are medium brown in color. Serve in a 1-ounce cup. Cover with a plastic lid.



CHOCOLATE

A blend of cocoa, including cocoa butter and dark roast aromatics at varying intensities.

REFERENCE	INTENSITY	PREPARATION
Nestle Toll House Semi-Sweet Chocolate Morsels	Aroma: 8.0	Chop the chocolate chips and place ¼ cup in a medium snifter. Cover.
	Flavor: 7.5	Place 1 teaspoon of chocolate in a 1-ounce cup. Cover with a plastic lid. During the tasting session, taste one chip per sample.

COCOA

A brown, sweet, dusty, musty, often bitter aromatic associated with cocoa bean, powdered cocoa and chocolate bars.

REFERENCE	INTENSITY	PREPARATION
Hershey's Cocoa Powder Natural Unsweetened, in water	Aroma: 7.5	Mix 1/4 teaspoon of cocoa powder with 100 milliliters of water. Serve in a medium snifter. Cover.
	Flavor: 5.0	Mix 1/4 teaspoon of cocoa powder with 100 milliliters of water. Serve in a 1-ounce cup. Cover with a plastic lid.

DARK CHOCOLATE

A high-intensity blend of cocoa and cocoa butter that may include dark roast, spicy, burnt, and musty notes with increased astringency and bitterness.

REFERENCE	INTENSITY	PREPARATION
Lindt Excellence 90% Cocoa Supreme Dark chocolate bar	Aroma: 6.0	Chop the chocolate and put 1 teaspoon in a medium snifter. Cover.
	Flavor: 11.0	Serve three 1/2-inch squares of chocolate in a 1-ounce cup. Cover with a plastic lid.
Dove Promises Silky Smooth Dark Chocolate (individually wrapped bite-sized bars)	Flavor: 8.5	Serve one chocolate in snack-size Ziploc bag.



SWEET

See “Taste Basics,” p. 14

MOLASSES

Dark, caramelized top notes that may include slightly sharp, acrid, and sulfur notes characteristic of molasses.

REFERENCE	INTENSITY	PREPARATION
Grandma’s Original Molasses, unsulphured	Aroma: 6.5	Mix 2 teaspoons of molasses in 250 milliliters of water. Serve ¼ cup in a medium snifter. Cover.
	Flavor: 6.5	Mix 2 teaspoons of molasses in 250 milliliters of water. Serve 1 teaspoon molasses in a 1-ounce cup. Cover with a plastic lid.

MAPLE SYRUP

A woody, sweet, caramelized, brown, slightly green aromatic associated with maple syrup.

REFERENCE	INTENSITY	PREPARATION
Le Nez du Café no. 24 “maple syrup”	Aroma: 7.0	Place 1 drop of essence on a cotton ball in a large snifter. Cover.
Maple Grove Farms Pure Maple Syrup Medium Amber	Flavor: 5.0	Serve 1 teaspoon maple syrup in a 1-ounce cup. Cover with a plastic lid.

BROWN SUGAR

A rich, full, round, sweet aromatic impression characterized by some degree of darkness.

REFERENCE	INTENSITY	PREPARATION
C&H Pure Cane Sugar, Golden Brown	Aroma: 6.0	Place 1 teaspoon brown sugar in a medium snifter. Cover.
	Flavor: 5.0	Mix 2 teaspoons sugar in 1 cup water. Serve in a 1-ounce cup. Cover with a plastic lid.

CARAMELIZED

A round, full-bodied, medium brown, sweet aromatic associated with cooked sugars and other carbohydrates. Does not include burnt or scorched notes.

REFERENCE	INTENSITY	PREPARATION
Le Nez du Café no. 25 “caramel”	Aroma: 8.0	Place 1 drop of essence on a cotton ball in a large snifter. Cover.
C&H Pure Cane Sugar, Golden Brown	Flavor: 2.5	Place 2 teaspoons sugar in 1 cup water. Serve 1 teaspoon in a 1-ounce cup. Cover with a plastic lid.
	Flavor: 4.5	Make 60% solution by dissolving 60 grams brown sugar in 1 liter water. Serve 1 teaspoon in a 1-ounce cup. Cover with a plastic lid.
Caramelized white table cane sugar	Flavor: 7.5	Place 1 cup white table sugar in a heavy saucepan. Cook over low-to-medium heat, stirring constantly with a wooden spoon, until sugar is melted. When it has turned light amber in color, remove from heat and pour onto wax paper. Be very careful—melted sugar is VERY HOT. Let harden. Break cooled, solidified sugar into pieces and store in a labeled airtight container. Serve a few small pieces in a 1-ounce cup. Cover with a plastic lid.

HONEY

Sweet, light brown, slightly spicy aromatic associated with honey.

REFERENCE	INTENSITY	PREPARATION
Busy Bee Pure Clover Honey	Aroma: 6.0	Dissolve 1 tablespoon honey in 250 milliliters of hot water. Serve ¼ cup in a medium snifter. Cover.
	Flavor: 6.5	Dissolve 1 tablespoon honey in 250 milliliters of hot water. Serve in a 1-ounce cup. Cover with a plastic lid.

VANILLA

A woody, slightly chemical aromatic associated with vanilla bean, which may include brown, beany, floral, and spicy notes.

REFERENCE	INTENSITY	PREPARATION
Le Nez du Café no. 10 “vanilla”	Aroma: 2.5	Place 2 drops of Le Nez du Café essence on a cotton ball in a large snifter. Cover.
Spice Islands Bourbon Vanilla Bean	Aroma: 5.5	Place 0.5 gram chopped vanilla beans in a medium snifter. Cover.
McCormick Pure Vanilla Extract, in whole milk	Flavor: 3.0	Stir 1/8 teaspoon of vanilla extract into ½ cup of whole milk. Serve in a 1-ounce cup. Cover with a plastic lid.

VANILLIN

An extremely sweet, non-natural aromatic associated with vanilla, cotton candy, and marshmallows.

REFERENCE	INTENSITY	PREPARATION
Fisher Scientific Vanillin	Aroma: 6.0	Mix 2 grams vanillin powder into 250 milliliters of water. Place in a large snifter. Cover.
FlavorActiV "vanilla" (vanillin) https://www.flavoractiv.com/product/vanilla-flavour-standard/		Prepare according to FlavorActiV package instructions.

SWEET AROMATICS

An aromatic associated with the impression of a sweet substance.

REFERENCE	INTENSITY	PREPARATION
Fisher Scientific Vanillin	Aroma: 5.0	Mix 0.5 grams of vanillin into 250 milliliters of water in a large snifter. Cover.
	Aroma: 7.0	Mix 2 grams of vanillin into 250 milliliters of water in a large snifter. Cover.
Nabisco Lorna Doone cookies	Flavor: 5.0	Serve 2 cookies in a 3.25-ounce cup. Cover with a plastic lid.

OVERALL SWEET

The perception of a combination of sweet taste and aromatics.

REFERENCE	INTENSITY	PREPARATION
Post Shredded Wheat	Flavor: 1.5	Serve 2 tablespoons in a 3.25-ounce cup. Cover with a plastic lid.
General Mills Wheaties	Flavor: 3.0	Serve 2 tablespoons in a 3.25-ounce cup. Cover with a plastic lid.
Nabisco Lorna Doone Cookies	Flavor: 5.0	Serve 2 cookies in a 3.25-ounce cup. Cover with a plastic lid.

*A portion of sales of this product support World Coffee Research. This reference has been validated and approved for use as a quality representation of the named flavor attribute, but has not undergone assessment to determine a Sensory Lexicon intensity score.



FLORAL

A sweet, light, slightly fragrant aromatic associated with fresh flowers.

REFERENCE	INTENSITY	PREPARATION
Welch's 100% White Grape juice	Aroma: 6.0	Mix 1 part water and 1 part juice. Place ¼ cup of mixture in a medium snifter. Cover.
	Flavor: 5.0	Mix 1 part water and 1 part juice. Serve mixture in a 1-ounce cup. Cover with a plastic lid.
Carnation essence oil	Aroma: 7.5	Place 1 drop of Carnation essence oil on a cotton ball in a large snifter. Cover.
Le Nez du Café n.12 "coffee blossom"	Aroma: 8.0	Place 1 drop of Le Nez du Café essence on a cotton ball in a large snifter. Cover.
FlavorActiv "rose/floral" (geraniol) https://www.flavoractiv.com/product/floral-flavour-standard-2/		Prepare according to FlavorActiv package instructions.

ROSE

A sweet, soft, slightly musty/dusty floral fragrance associated with fresh or dried roses.

REFERENCE	INTENSITY	PREPARATION
Rose water	Aroma: 5.0	Place 2 drops of rose water on a cotton ball in a medium snifter. Cover.

JASMINE

An intense, slightly pungent, sweet, floral aromatic with underlying green, musty/dusty notes.

REFERENCE	INTENSITY	PREPARATION
Jasmine extract	Aroma: 8.5	Place 1 drop of jasmine extract on a cotton ball in a medium snifter. Cover.

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JASMINE *Cont.*

REFERENCE	INTENSITY	PREPARATION
FlavorActiV “indole” https://www.flavoractiv.com/product/jasmine-flavour-standard/	*	Prepare according to FlavorActiV package instructions.

CHAMOMILE

The sweet, slightly floral/fruity, somewhat woody green associated with chamomile.

REFERENCE	INTENSITY	PREPARATION
Celestial Seasonings Chamomile Tea	Aroma: 5.0	Place 1 tea bag in 1 cup of boiling water. Brew for 5 minutes. Let cool. Serve 1/4 cup of the brewed tea in a medium snifter. Cover.
	Flavor: 5.0	Place 1 tea bag in 1 cup of boiling water. Brew for 5 minutes. Let cool. Serve brewed tea in a 1-ounce cup. Cover with a plastic lid.

BLACK TEA

A somewhat brown, musty, dried plant and dried bark aromatic associated with the oxidization of tea leaves.

REFERENCE	INTENSITY	PREPARATION
Lipton Black Tea	Aroma: 8.0	Cut open 1 tea bag. Pour the tea leaves into medium snifters. Place 1 teaspoon of hot water over leaves immediately before serving.
	Flavor: 7.0	Place 1 tea bag in 1 cup of boiling water. Brew for 5 minutes. Let cool. Serve brewed tea in a 1-ounce cup. Cover with a plastic lid.



AMPLITUDE

Amplitude measures the overall impression of a product judged on the following aspects: overall impact, blended (the extent to which the flavors and aromas of the product blend together), longevity, and body/fullness. The amplitude reflects the degree to which the characteristics of the product adhere together.

OVERALL IMPACT

The maximum overall sensory impression.

REFERENCE	INTENSITY	PREPARATION
Gevalia Kaffe Traditional Roast, ground	Flavor: 7.5	Begin brewing 1 hour before test. Use 30 grams ground coffee and 48 ounces deionized water and an autodrip coffee maker that meets SCAA Certified Brewer standards. Brew. Transfer coffee to clean, insulated airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.
Folgers Classic Roast Coffee, ground	Flavor: 9.0	Begin brewing 1 hour before test. Use 30 grams ground coffee and 48 ounces deionized water and an autodrip coffee maker that meets SCAA Certified Brewer standards. Brew. Transfer coffee to clean, insulated airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.
Folgers Classic Roast, instant coffee crystals	Flavor: 12.0	Begin preparing 1/2 hour before the test. Weigh 30 grams of instant coffee and add to 48 ounces deionized water at 165°F. Mix well. Transfer to clean, insulated coffee airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.

BLENDED

The melding of individual sensory notes such that the products present a unified overall sensory experience as opposed to spikes or individual notes.

REFERENCE	INTENSITY	PREPARATION
Folgers Classic Roast, instant coffee crystals	Flavor: 3.0	Begin preparing 1/2 hour before the test. Weigh 30 grams of instant coffee and add to 48 ounces deionized water at 165°F. Mix well. Transfer to clean, insulated coffee airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.

BLENDED *Cont.*

REFERENCE	INTENSITY	PREPARATION
Folgers Classic Roast Coffee, ground	Flavor: 6.0	Begin brewing 1 hour before test. Use 30 grams ground coffee and 48 ounces deionized water and an autodrip coffee maker that meets SCAA Certified Brewer standards. Brew. Transfer coffee to clean, insulated airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.
Gevalia Kaffe Traditional Roast, ground	Flavor: 10.0	Begin brewing 1 hour before test. Use 30 grams ground coffee and 48 ounces deionized water and an autodrip coffee maker that meets SCAA Certified Brewer standards. Brew. Transfer coffee to clean, insulated airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.

LONGEVITY

The time that the full, integrated sensory experience sustains itself in the mouth and after swallowing.

REFERENCE	INTENSITY	PREPARATION
Gevalia Kaffe Traditional Roast, ground	Flavor: 7.5	Begin brewing 1 hour before test. Use 30 grams ground coffee and 48 ounces deionized water and an autodrip coffee maker that meets SCAA Certified Home Brewer standards. Brew. Transfer coffee to clean, insulated airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.
Folgers Classic Roast Coffee, ground	Flavor: 9.0	Begin brewing 1 hour before test. Use 30 grams ground coffee and 48 ounces deionized water and an autodrip coffee maker that meets SCAA Certified Home Brewer standards. Brew. Transfer coffee to clean, insulated airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.
Folgers Classic Roast, instant coffee crystals	Flavor: 12.0	Begin preparing 1/2 hour before the test. Weigh 30 grams of instant coffee and add to 48 ounces deionized water at 165°F. Mix well. Transfer to clean, insulated coffee airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.

FULLNESS

The foundation of flavor notes that gives substance to the product. The perception of robust flavor that is rounded with body.

REFERENCE	INTENSITY	PREPARATION
Folgers Classic Roast, instant coffee crystals	Flavor: 5.0	Begin preparing 1/2 hour before the test. Weigh 30 grams of instant coffee and add to 48 ounces deionized water at 165°F. Mix well. Transfer to clean, insulated coffee airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.

FULLNESS *Cont.*

REFERENCE	INTENSITY	PREPARATION
Folgers Classic Roast Coffee, ground	Flavor: 7.5	Begin brewing 1 hour before test. Use 30 grams ground coffee and 48 ounces deionized water and an autodrip coffee maker that meets SCAA Certified Home Brewer standards. Brew. Transfer coffee to clean, insulated airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.
Gevalia Kaffe Traditional Roast, ground	Flavor: 10.0	Begin brewing 1 hour before test. Use 30 grams ground coffee and 48 ounces deionized water and an autodrip coffee maker that meets SCAA Certified Home Brewer standards. Brew. Transfer coffee to clean, insulated airpot (140°F) in the evaluation room. Put empty 4-ounce Styrofoam cups (with lids) on tray. Serve cup 2/3 full.



MOUTH DRYING

A drying, puckering, or tingling sensation on the surface and/or edge of the tongue and mouth.

REFERENCE	INTENSITY	PREPARATION
0.05% alum solution	Flavor: 2.5	Serve in a 1-ounce cup. Cover with a plastic lid.
0.07% alum solution	Flavor: 3.5	Serve in a 1-ounce cup. Cover with a plastic lid.

THICKNESS

The thick feel of the beverage as you press your tongue through it.

REFERENCE	INTENSITY	PREPARATION
5% sucrose solution	Flavor: 2.0	Serve in a 1-ounce cup. Cover with a plastic lid.
Campbell's Tomato Juice	Flavor: 4.0	Serve in a 1-ounce cup. Cover with a plastic lid.

METALLIC

An aromatic and mouthfeel associated with tin cans or aluminum foil.

REFERENCE	INTENSITY	PREPARATION
0.10% potassium chloride solution	Flavor: 1.5	Serve in a 1-ounce cup. Cover with a plastic lid.

OILY

The amount of fat/oily film left on surfaces of mouth after swallowing or expectorating.

REFERENCE	INTENSITY	PREPARATION
Horizon Organic Low-Fat (1%) ultrapasteurized milk	Flavor: 3.0	Serve in a 1-ounce cup. Cover with a plastic lid.
Kroger Half & Half	Flavor: 6.0	Serve in a 1-ounce cup. Cover with a plastic lid.

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