

FKS PROCEDURE TO EVALUATE FLAVOR INGREDIENTS

1. Use room temperature water, and taste the water used for the evaluation
2. Document age of ingredient, supplier, and properties like natural, kosher and FCC
Only evaluate ingredients that are known to be within manufactures shelf life range, or try to use ingredients less than 6 months old if shelf life unknown. Always date ingredient container when received from supplier.
3. Document date of evaluation
4. Use the same temperature water for tasting various use levels of the same ingredient.

Flavor Chemicals:

5. Determine threshold of ingredient, and evaluate ingredient at incremental ppm use levels. Taste at a low ppm use levels to determine the threshold of the ingredient, and at high ppm level where the ingredient does not taste good. For most chemicals this is in a range of 0.1 to 10 ppm. Some chemicals may require use levels down to ppb range, or up to 50 ppm or 1000ppm (0.1%)
6. Normal use levels for flavor chemical evaluation are 0.1, 0.5, 1.0, 2.5, 5.0, 7.5 and 10 ppm.
7. Describe flavor and intensity at each ppm use level. Document all data for future retrieval. Normal foods we eat have an intensity rating of about 3 – 3.5. Spicy or citrus foods would have a rating above 3.5 This is a good reference for the intensity scale of 1 – 10.
8. Document in which flavors this ingredient may be useful.

Preparing taste solutions:

1 / 1,000,000 = 1 PPM or 0.000001

For our purposes 100 grams = 100 milliliters (mls). This is a subjective analysis and using volume instead of weight to make solutions is easier than weighing the water, and is adequate for tasting ingredients. The error in using volume instead on weight, is less than the subjectiveness of the analysis.

Prepare ingredient for evaluation:

Prepare a 1.0 % solution of the ingredient in ethyl alcohol. Weigh both the ingredient and alcohol. Ethyl alcohol is volatile and can leak as a gas through the cap or container closer. Screw tops with poly liners can also leak. Keep caps tightly closed.

10 ppm solution:

Weigh 1 gram of a 1% solution and add 100 mls of water = $0.01\text{g}/100\text{g} = 0.000100 = 100 \text{ ppm}$

Weigh 0.1 gram of a 1% solution and add 100 mls water = $0.001\text{g}/100\text{g} = 0.000010 = 10 \text{ ppm}$

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To make a 1 ppm taste solution, add 10 mls of a 10 ppm solution to 90 mls of water

For a 0.1 ppm solution, add 10 mls of a 1 ppm solution and add 100 mls of water.
Make other dilutions to make various ppm solutions, etc. See # 6 above.

Meat flavor ingredients like HVP, Autolyzed yeast extract, meat extracts, etc.

Savory flavor ingredients can usually be tasted in a range of 0.05% to 0.3%. Some ingredients may require lower and higher levels. Try to determine the threshold intensity level and a high intensity level. Many of these ingredient off at an intensity of about 3-4 and never get any stronger. Most flavor ingredients have an optimum flavor level, and when used below or above this level the flavor is not as desirable. More is not always better.

Use the same procedure as above for making solutions of savory ingredients for tasting. Make A 1% solution by adding 100 mls to 1 gram of ingredient. Dilute the 1% solution to 0.05 %, 0.1% 0.2%, and 0.3% for tasting.

Describe and determine the intensity at each % use level.

Determining ppm usage of Ingredients in Flavors

Determine actual ppm usage of ingredient in formula

- 1) Example: Using 0.2 grams of a 10% ingredient solution is actually 0.02 grams
(.2 X 10% = 0.02)
- 2) Divide actual usage of ingredients by flavor total. Example in a 10 gram formula
 $0.02 / 10 = .002\text{g/gram of flavor}$
- 3) Multiply .002 by use level of flavor. Example: If flavor was used at 0.1%,
 $0.002 \times 0.1\% = 0.000002$ or 2 ppm

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