





FLAVOR AND EXTRACT MANUFACTURERS'  
ASSOCIATION OF THE UNITED STATES  
1995 POUNDAGE AND TECHNICAL EFFECTS  
UPDATE SURVEY

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# FEMA 1995 POUNDAGE AND TECHNICAL EFFECTS UPDATE SURVEY

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# FEMA 1995 POUNDAGE AND TECHNICAL EFFECTS UPDATE SURVEY

## INTRODUCTION

### HISTORY

In 1970, the National Academy of Sciences-National Research Council (NAS/NRC) began conducting a series of surveys on the use of food additives, including FEMA GRAS and other flavoring substances. Data collected in the surveys have been used by industry and governments for performing evaluations of safety and nutrition, estimating changes in use over time, and identifying trends within the food industry. These surveys were conducted in five-year intervals (1970, 1975, 1982 and 1987) with financial support from the Food and Drug Administration (FDA) and with the involvement of the Flavor and Extract Manufacturers' Association (FEMA). Spanning 30 years, FEMA's involvement included recommending the participation of its members in the survey and review of completed surveys by its Flavor Ingredients Committee to identify errors in the reports.

The last survey was published by the NAS/NRC in 1989, and contained 1987 annual usage and technical effect data on GRAS additives and regulated additives in food. However, because of budgetary constraints, the NAS/NRC has been unable to continue updating their surveys. Nonetheless, updated poundage data on flavoring substances continue to be requested by the FDA, the FEMA Expert Panel, and international regulatory bodies such as the Joint WHO/FAO Expert Committee on Food Additives (JECFA). Therefore, FEMA initiated a poundage update survey of flavoring substances and flavor adjuncts used in the United States during the calendar year 1995. While previous surveys conducted by NAS/NRC included the entire U.S. food industry, FEMA's survey was limited to manufacturers of flavors and users of flavoring substances.

### 1995 SURVEY METHODOLOGY

#### *Participants*

The methodology utilized for the 1995 survey followed the methodology used in previous surveys and has been outlined in standard operating procedures developed by FEMA's Flavor Ingredients Committee (see Appendix 1). All members of FEMA involved in making or using flavors or flavoring substances\* were requested to participate in the survey. In addition, the National Confectioners Association (NCA), the Distilled Spirits Council (DISCUS), the National Association of Chewing Gum Manufacturers (NACGM), and the Grocery Manufacturers' Association (GMA) agreed to seek participation in the survey from their membership.

In total, 145 companies were identified as potential participants and were contacted to participate in the survey. Of the 145 companies initially contacted, 133 agreed to respond and were sent surveys, including 79 members of FEMA, 19 members of NCA, 17 members of GMA, 11 members of NACGM, 3 members of DISCUS, and 4 other companies. Upon receipt of the survey, 31 declined to participate or were deemed inappropriate participants, leaving a total of 102 participants. Of the 102 who agreed to respond, 63 individual companies actually responded. The response rate was determined to be 87% (total annual sales volume of FEMA-affiliated flavor manufacturers and users who responded compared to the total annual sales volume of all FEMA-affiliated flavor manufacturers and users).

The NACGM collected data from its own members and submitted a single aggregate response to FEMA.

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\* FEMA members involved only in the sale of individual flavoring substances to food companies or other companies were *not* surveyed in an effort to avoid double reporting.

### Scope

More than 2400 flavoring substances were included in FEMA's survey, including the FEMA GRAS substances published in GRAS publications 3-16 (Hall and Oser, 1965; Hall and Oser, 1970; Oser and Hall, 1972; Oser and Ford, 1973a; Oser and Ford, 1973b; Oser and Ford, 1974; Oser and Ford, 1975; Oser and Ford, 1977; Oser and Ford, 1978; Oser and Ford, 1979; Oser *et al.*, 1984; Oser *et al.*, 1985; Burdock *et al.*, 1990; Smith and Ford, 1993). Most substances were identified in the survey by their NAS numbers<sup>†</sup> consistent with past NAS/NRC surveys (see Table 1). Exceptions include brominated vegetable oil, which was reported in previous surveys as NAS# 2168 but is reported here as NAS# 7802, and some capsicums (see "Validation of the Data" below).

Participants were requested to specify the pounds and technical effect(s) of each ingredient used in 1995 to impart flavor to food either in the form of a compounded flavor *or* by direct addition to food (Appendix 2). The poundage of flavoring substances that were a) exported, or used in exported flavors or food products, b) used in pharmaceutical or over-the-counter drug products, c) used in oral hygiene products (such as toothpaste and mouthwash), d) used in tobacco products, e) used in pet foods, or f) used in fragrances was not requested. To avoid double reporting, participants were requested to exclude the following:

- The poundage of flavoring substances sold in 1995 to flavor companies, food manufacturers, or any other company
- The poundage of flavoring substances used to make other discrete ingredients, such as the use of butyric acid to make ethyl butyrate
- The poundage of flavoring substances used for non-flavor related purposes, such as the use of acetic acid as pickling brine, or the use of butylated hydroxyanisole (BHA) in foods, such as edible fats or breakfast cereal, as an antioxidant

- The poundage of an essential oil used to make a folded essential oil

Participants also were requested to report the poundage and technical effects of all other flavoring substances *not* listed in the survey.

### Format of the Survey

The majority of data were collected electronically using a customized computer program designed by FEMA. Participants either downloaded the poundage data directly from a mainframe or other computer into the survey program, or the data were entered into the program manually using the keyboard.

In an effort to simplify the reporting of technical effects data, the technical effect(s) reported for each substance in previous NAS/NRC surveys were included in the survey as default categories. Participants were required to report the poundage (in terms of percent) corresponding to each default technical effect category. If a particular default technical effect category was not relevant, participants were required to enter a "0". Participants were given the option to report other technical effects, in addition to those listed as defaults. Technical effect data were entered manually using the keyboard.

Survey responses were submitted to FEMA via diskette. Only a few participants were unable to meet the technological requirements for running the survey program and therefore submitted their response via hard copy.

### Validation of the Data

Following the data collection phase of the survey, a task force of industry experts was assembled to validate the aggregate results. Efforts focused on identifying specific cases of over- and under-reporting of poundage, correctness of technical effects, and verification of Code of Federal Regulations (CFR) references. In cases where results were questionable, respondents were

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<sup>†</sup> For FEMA GRAS substances, the FEMA number is the NAS number.

contacted for verification or correction of the poundage reported. Of the 16,986 poundage reports received, 233 were identified as questionable; FEMA received verification or correction for 191 (82%) of those reports.

The task force noted that 1995 reported poundage which is exceptionally lower than the poundage reported in previous surveys could be attributed to the fact that the 1995 survey was limited to the flavor industry; while the previous surveys included additional members of the food industry, where the preponderance of usage of these materials is found.

In an effort to clarify the confusing nomenclature and numbering associated with the various capsicums used as flavoring substances, the Task Force and other industry experts developed the classification scheme defined in Table 2.

FEMA's Flavor Ingredients Committee assembled definitions of the terminology used for naturals (see Table 3).

#### DESCRIPTION OF THE REPORT

The poundage and technical effect data collected in this survey are reported in Appendix 2. Following is an explanation of each data category presented in Appendix 2. An example of the format of the data in Appendix 2 may be found in Figure 1 of the Introduction.

##### *Substance Name and Number*

Substances are reported alphabetically by the traditionally used chemical or common name. Each substance name is preceded by its corresponding NAS (National Academy of Sciences) survey identification number (see Table 1 for the NAS numbering key) and Chemical Abstracts Services (CAS) number, if available.

Substances<sup>‡</sup> with no previously known use as flavoring substances were assigned a NAS number by the Task Force.

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<sup>‡</sup> *i.e.* Substances in either the NAS 0-1000, 6000 or 8000 series. NAS numbers for substances in other categories have regulatory significance and cannot be arbitrarily assigned.

##### *Total Poundage*

The total poundage reported in the 1995 FEMA survey is labeled "Poundage". Poundage values have been truncated based on the method used in the 1987 NAS Survey. Total poundage values <1 are truncated to one place following the decimal point; totals ≥1 but <100 are truncated to the nearest whole number; totals ≥100 but <1000 are truncated to the nearest ten of pounds; totals ≥1000 are truncated to three significant figures.

##### *Number of Reporting Companies*

The number of companies that provided a poundage response for each particular ingredient in the 1995 survey is reported in the column labeled "Total Companies".

##### *Code of Federal Regulations (CFR) Reference*

The CFR reference is the citation to Volume 21 of the U.S. Code of Federal Regulations that pertains to the intended use of the flavoring substance in food. Volume 21 of the CFR contains the Food and Drug Administration (FDA) regulations for flavoring substances and other food ingredients.

##### *Technical Effects*

The function of a substance in a flavor is referred to as its technical effect (T.E.). Flavoring substances may have one or more technical effects. The various technical effect categories are listed in Table 4. Technical effects beginning with an "F" are used for flavoring substances that are intentional constituents of the final food product and, in general, remain functionally active following processing. Technical effects beginning with a "P" are substances used in the preparation of flavors such that the substance is not present in the product or has no further effect in the final food. These substances (incidental additives) are used to facilitate the processing, storage, handling, or packaging of flavors.

The technical effects reported in the 1995 FEMA survey are presented as "T.E.". The poundage reported for each technical effect is presented as "Poundage per T.E.".

The percentage of poundage reported for each technical effect is presented as "% of Poundage".

#### SUMMARY AND CONCLUSIONS

The collection of updated poundage data is important to the flavor industry and regulatory bodies because it provides an estimate of the use and intake of flavoring substances. Poundage data have been used historically as a reliable means of estimating intake. Along with other criteria, FEMA's Expert Panel uses poundage data to estimate potential exposure in its evaluation of the GRAS status of flavoring substances (Woods and Doull, 1991).

Recently, the demand for such data has increased with the acceleration of efforts to harmonize the international marketplace. In 1996, the Joint WHO/FAO Expert Committee on Food Additives (JECFA) adopted a procedure for the safety evaluation of flavoring substances which relies heavily on estimates of intake (Munro *et al.*, 1999; JECFA 1996 a,b; JECFA, 1997). Use and intake data will be increasingly valuable as the global market continues its expansion, and as the international regulatory community turns its attention to flavors.

As with any data collected via survey, it is important to remember that poundage data are estimates and should be cautiously considered when used to formulate conclusions pertaining to consumption. Factors such as waste, spoilage, volatilization, and removal from the finished product by processing may not be reflected in the reported figures. While respondents were specifically requested to exclude any poundage used for exports and non-flavor related uses, such poundage may have been inadvertently reported. Validation efforts were undertaken specifically for addressing these possible cases of over-reporting, as well as under-reporting, but were obviously limited by the nature of the survey. FEMA believes that computerization of the data collection process has contributed significantly to the accuracy of results.

Previous surveys calculated a response rate based on the number of companies deemed appropriate for participation

compared to the number of companies that actually responded. However, the vast majority of flavors are produced by the largest firms, and therefore, it is most appropriate to calculate the survey response rate in terms of sales volume. For example, if Company A's annual sales totaled 25 million and Company B's annual sales totaled 3 million; and the total annual sales for the entire industry was 40 million; the response rate for the survey would be 70%, if both Company A and B participated. If only Company A responded to the survey, the response rate would be 62.5%, or if only Company B responded to the survey, the response rate would be 7.5%.

Based on the annual sales volume of all FEMA-affiliated flavor manufacturers and users, it is estimated that the 1995 FEMA survey response rate is 87%. Between 80-90% of the top flavor manufacturers and users (*i.e.*, annual sales  $\geq$  \$10 million) responded in the 1995 FEMA survey.

Previous surveys have provided an estimate of the correction factor (the percent of total flavor volume reported compared to the actual flavor volume used), and one is also reported here. The 1995 correction factor is estimated to be 80%<sup>§</sup>, which is an increase compared to the 60% correction factor estimated for the 1987 NAS Survey. FEMA believes the increase is warranted given the response rate reported above, the increased accuracy due to computerization of the survey, and the high level of response to poundage verification inquiries.

While matched poundage data have been reported in previous NAS/NRC surveys, they are not reported here because of the significant number of recent acquisitions and mergers and the corresponding decrease in the number of companies reporting. All of these factors have compromised their reliability. Furthermore, as previously noted, the 1995 FEMA survey was limited to flavor manufacturers and users, such that matched poundage data would not constitute a direct

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<sup>§</sup> For ease in calculations, 80% is the recommended correction factor instead of the actual response rate of 87%.

comparison to the data reported in previous surveys from the entire food industry.

The absence of reported poundage should not be interpreted as zero usage, but instead could reflect an extremely low level of use or no use in the year of the survey.

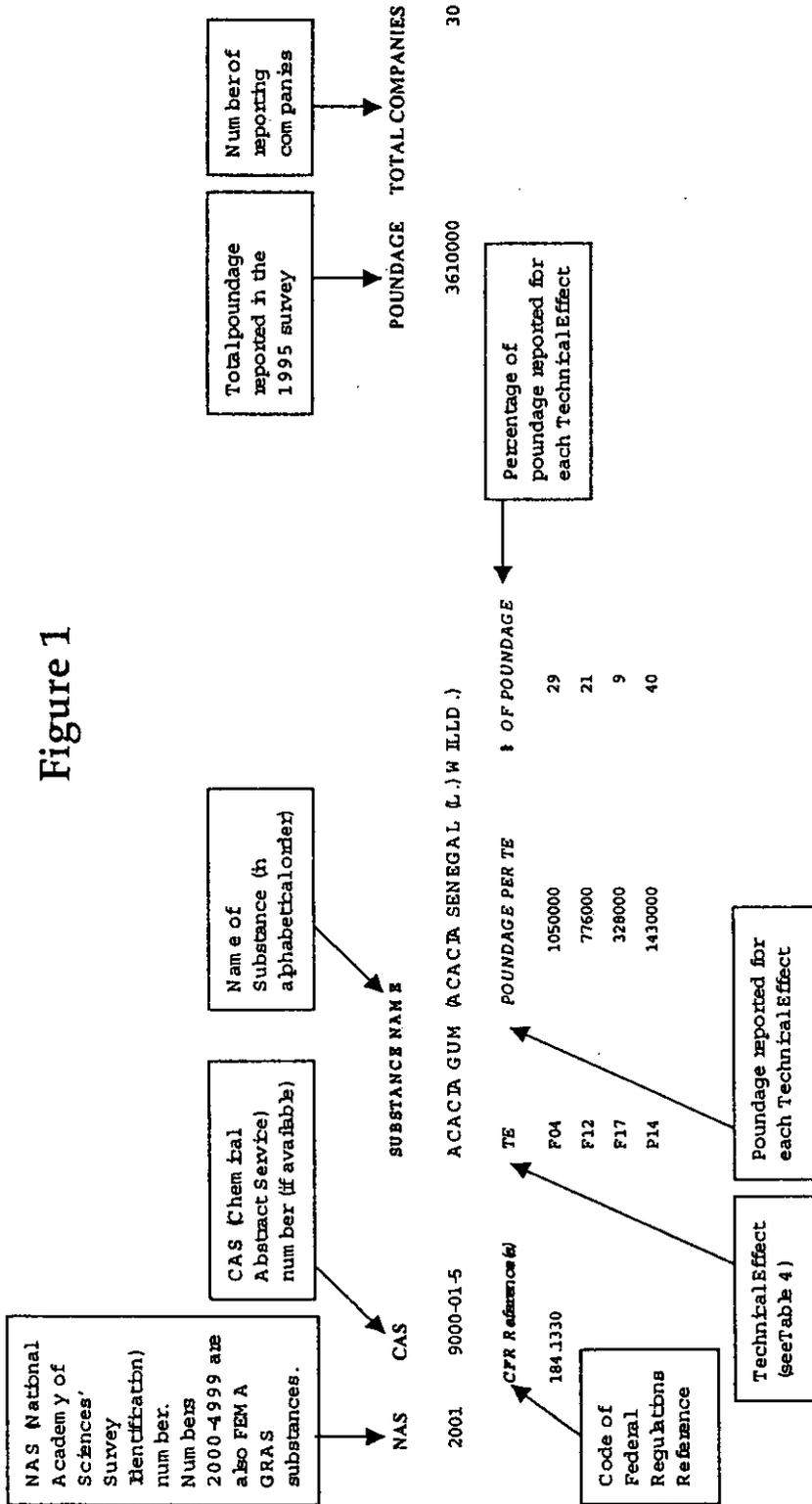
FEMA believes the data collected in this survey is of the same quality as the data collected in the previous surveys administered by NAS/NRC. The data presented here will provide sound estimates of exposure for use in safety evaluations of flavoring substances for many years to come.

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Figure 1



POUNDRAGE TOTAL COMPANIES 3610000 30

ACACIA GUM (ACACIA SENEGAL (L.) W. ILD.)

2001 9000-01-5

Table 1. NAS NUMBERING KEY<sup>1</sup>

NAS NUMBERS	DESCRIPTION
0 through 1,999	NAS Substances (used mainly by the food industry)
2,000 through 4,999	FEMA Substances
6,000 through 6,999	Natural Ingredients with no FEMA numbers (group contains particularly, but not exclusively, those ingredients which are regulated either as food additives or Generally Recognized as Safe (GRAS) substances under 21 CFR Paragraph 172.510, 182.10, or 182.20)
7,000 through 7,999	Synthetic Ingredients with no FEMA numbers (those ingredients which are regulated either as food additives or Generally Recognized as Safe (GRAS) substances under 21 CFR Paragraph 172.515, 180.30, or 182.60)
8,000 through 8,999 <sup>2</sup>	Natural Ingredients derived from Botanicals which presently have no official FEMA or FDA designation
8,700 through 8,999	Ingredients which can be identified, but which have no official FEMA or FDA designation
9,000 through 9,999	Not applicable to survey

<sup>1</sup> Respondents were requested to report poundage for materials which occur in varying concentrations (e.g. orange peel oil sweet) separately according to concentration using the NAS number followed by the appropriate letter (e.g., 2825A [Not Folded], 2825B [2X-5X Fold], 2825C [6X-10X Fold], 2825D [11X-20X]).

<sup>2</sup> No substances in this category were included in the survey.

Table 2. CLASSIFICATION OF CAPSICUMS<sup>3</sup>

CLASS	FUNCTION	GENUS/SPECIES	NAS	DESCRIPTION
PAPRIKA	COLOR	Capsicum annuum L. or Capsicum frutescens L.	2833	Paprika (Capsicum annuum L. or Capsicum frutescens L.)
			2834	Oleoresin Paprika
CAPSICUMS	HEAT	Capsicum frutescens L. or Capsicum annuum L.	2849	Red Pepper (Capsicum frutescens L. or Capsicum annuum L.)
			2233	Capsicum Extract
			2234	Capsicum Oleoresin
			6180	Capsicum
			6423	Chili Capsicum
PEPPERS	FLAVOR	All other capsicums, not exclusively for color or heat	6532	Green Pepper (Capsicum frutescens L.) Including "Jalapenos"
			6340	Chili Oleoresin
			6394	Chili, Sweet Including "Chili Pepper" Including "Red Bell Pepper"
			6424	Chilies, Ground

<sup>3</sup> All capsicums reported in the survey are included in this report according to the above classification.

Table 3. NATURAL INGREDIENTS TERMINOLOGY

TERM	DEFINITION
ABSOLUTE	A concentrated extract obtained by alcohol extraction of concretes, hydrocarbon or fat extracts of botanical matter. Waxes, terpenes, sesquiterpenes, and most odorless materials are removed (Mookherjee, 1996).
AROMA	Odor-giving portion of a flavor emanating from a food product. Synonym for fragrance or odor.
BRIX	Total solids content of a juice or beverage, usually very close to sugar content.
CONCENTRATE/ JUICE CONCENTRATE	Fruit juice in which the bulk of water has been removed by distillation, leaving viscous material, which is usually five to six times stronger than the original fruit juice. Essence is usually added back to the concentrate before use (Society of Flavor Chemists, 1996).
CONCRETE	A hydrocarbon extract of botanical material, almost exclusively of vegetable origin. These are usually solid, waxy, non-crystalline masses which contain higher fatty acids, e.g. lauric and myristic (Mookherjee, 1996).
DISTILLATE	The volatile portion of a mixture, usually clear, obtained through the process of distillation.
ESSENCE	The most volatile portion of fruit juices, which are recovered during the concentration of fruit juices (Society of Flavor Chemists, 1996).
ESSENTIAL OIL	Volatile oil, containing the essential flavor and aroma parts, derived from plants, herbs, roots, etc., such as peppermint oil, lemon oil etc. (Society of Flavor Chemists, 1996).
EXPRESSED OIL	Obtained by squeezing of a spice, fruit, etc.
EXTRACT	Matter taken out of plants, fruits, etc. to be used as flavoring material, often concentrated (Society of Flavor Chemists, 1996).
GUM	Colloidal polysaccharide substances of plant origin that are gelatinous when moist but harden on drying.
OLEORESIN	Either a natural or prepared material. Natural oleoresins are plant exudates. Prepared oleoresins present the most concentrated form of the botanical material and are the solvent extract of the botanical; thus, yielding both extract oil and resinous matter (Mookherjee, 1996).
RESIN	Natural resins are tree or plant exudates formed in nature by the oxidation of terpenes. Many resins are acids or acid anhydrides. Prepared resins are oleoresins from which the essential oil has been removed (Mookherjee, 1996).
RESINOID	Hydrocarbon type solvent extraction of a natural resin. The main constituents of resinoids are rosin acids, rosin acid anhydrides, sesquiterpenes, essential oils, plant colors, waxes, and other hydrocarbon-soluble matter (Mookherjee, 1996).
TERPENELESS	The less volatile portion found in essential oils, usually consisting of a mixture of carbonyls. The remaining portion of an essential oil from which the generally volatile liquid hydrocarbons have been removed through distillation.
TINCTURE	Aqueous alcoholic extractions of the botanical material. The solvent is left in the extract as a diluent. As a result of the method of preparation, tinctures do not always represent the total amount of natural raw material from which they are prepared (Mookherjee, 1996).

Table 4. TECHNICAL EFFECT CATEGORIES<sup>4</sup>

**FINAL PRODUCT ADDITIVES**

Substances that are intentional constituents of the final flavor product and, in general, remain functionally active following processing.

**F01 Anti-microbial agents.**

Substances that kill, inactivate, or retard the growth of microorganisms. Included in this category are substances that achieve these effects by control of water activity or pH.

**F02 Antioxidants.**

Substances that retard or prevent oxidative reactions that would result in undesirable changes, e.g. the development of off-flavors (oxidative rancidity), discoloration, and loss of nutritive value. Included in this category are antioxidant synergists, oxygen displacers (such as inert gases), and protective coatings.

**F03 Appearance control/agents- color and color modifiers.**

Substances that alter or preserve the color (hue, saturation, or lightness) of foods. Included in this category are color stabilizers and fixatives; antioxidants that prevent color change are excluded.

**F04 Appearance control agents- substances other than color and color modifiers.**

Substances that control or alter the appearance, other than color, of foods. Included in this category are agents (e.g. glazes, waxes, polishes) that are applied to solid foods to preserve or improve surface appearance including gloss; and turbidity promoters (e.g. Brominated Vegetable Oil, Ester Gum) that are added to fluid foods to produce or stabilize suspended materials and thereby influence turbidity, opacity, or "cloud".

**F05 Flavoring Substances.**

Substances with flavoring properties, or that may develop flavoring properties after processing, which are not intended to be consumed as such, and which are added to food, the primary purpose of which is to modify, enhance, or fortify the flavor and taste of the food. Not included are substances with only sweet, sour or salty taste.

**F06 Moisture control agents.**

Substances other than anti-microbial agents (F01) that maintain or decrease the moisture content of foods. Included in this category are substances that retain moisture (e.g. humectants, waterbinding agents, protective coatings, and anti-dusting agents), and substances that decrease moisture (e.g. anticaking agents, free-flowing agents, and drying agents).

**F07 Nutrients.**

Substances that are added to a food to restore or increase its nutrient content, other than calories. Substances contributing primarily calories are included in this category, however, when added to baby and infant foods.

**F08 pH control agents.**

Substances that maintain or alter the active acidity or alkalinity of foods. Included in this category are acids, bases, and buffers.

**F09 Sequestrants.**

Substances that combine with metal ions and prevent their adverse effects.

**F10 Surface tension control agents.**

Substances that enhance the compatibility of the physical phases of foods (e.g. liquid/solid, solid/gas) by affecting the

<sup>4</sup> Derived from National Academy of Sciences (1989) Appendix III. Technical Effect Categories of Final Product Additives and Processing Additives.

character of the interfaces. Included in this category are wetting agents, whipping agents, dispersants, and rehydration enhancers; excluded are emulsifiers (see F12) and stabilizers (see F17).

#### **F11 Sweeteners.**

Substances that are added to foods to impart a sweet taste. Included in this category are non-caloric sweeteners and caloric sweeteners (more than 2% of the caloric value of sucrose per equivalent unit of sweetening capacity). "Caloric" is defined in accordance with 21 CFR 170.3 (0) 21.

#### **F12 Emulsifiers.**

Substances that help form or stabilize dispersions of oil and water by accumulating preferentially at the oil-water interface and lessening the tendency of the dispersed particles to combine into a separate layer. Emulsifying salts used in cheese, although not true emulsifiers, are included in this category.

#### **F13 Firming agents.**

Substances that increase the firmness of plant tissues.

#### **F14 Leavening agents**

Substances that generate, or assist in generating, gases during the preparation and cooking of bakery products, and thereby help achieve an open-textured final product. Included in this category are yeast, chemical leavening agents and acids used as part of chemical leavening systems.

#### **F15 Masticatory substances.**

Substances that are responsible for the long-lasting, pliable properties of chewing gum.

#### **F16 Propellants.**

Substances used to pressurize fluid foods and enable them to be dispensed as foams or sprays. Propellants used to dispense foods in a non-aerated form are included in this category even though they do not alter product texture or consistency to a significant degree.

#### **F17 Stabilizers and thickeners.**

Substances that directly or indirectly control the mouth-feel of fluid or semi-solid foods, other than tissues. Included in this category are: 1) polymeric substances, such as starches, gums and proteins that increase viscosity, stabilize aqueous dispersions of solids, liquids or gases and / or regulate

crystal formation and crystal stability, and 2) nonpolymeric chemicals, mainly salts, that control the rheological characteristics of aqueous suspensions of proteins or other polymeric substances.

#### **F18 Texturizers.**

Substances that control the mouth-feel of low- to moderately low-moisture solid foods such as processed cheese, confectionery products, snack foods, breakfast cereals and processed meats or meat analogs.

#### **F19 Tracers.**

Substances added to a food constituent (as required by regulation) so that levels of this constituent can be detected after subsequent processing and/or combination with other food materials (at present, titanium dioxide added to reconstituted vegetable protein meat extenders is the only known example).

#### **F20 Salts.**

Neutral salts such as sodium chloride and its substitutes, intended to impart a salty taste to food.

#### **F21 Foods.**

Products traditionally consumed for their caloric value as a source of energy.

### **PROCESSING ADDITIVES**

Substances used in the preparation of flavors such that the substance in most cases is not present in the flavored product as consumed. These substances are used to facilitate the processing, storage, handling, or packaging of flavors and, in general, are not functionally active in the final flavor product.

**P01 Aerating/foaming agents.**

Gases or vapors that are used to control the density of a food or the composition of the atmosphere in contact with a food.

**P03 Catalysts.**

Enzymes and metals used to catalyze reactions that improve the characteristics of food or facilitate food processing.

**P04 Clarifying/flocculating agents.**

Substances other than enzymes that promote the clarity and/or stability of liquids by the removal of suspended or haze-producing materials. Included in this category are precipitants and refining agents.

**P06 Freezing/cooling agents.**

Substances that reduce the temperature of food materials through direct contact.

**P07 Malting/fermenting aids.**

Substances used to control the rate or nature of malting or fermenting processes, including microbial nutrients and suppressants and excluding acids and alkalis.

**P09 Oxidizing/reducing agents.**

Substances that cause or enhance oxidative or reductive changes, e.g. the prevention of darkening, the partial decoloration (bleaching) or maturation of flour, and the conditioning (protein modification) of dough.

**P11 Release/anti-stick agents.**

Substances applied to surfaces that contact food to prevent adhesion.

**P12 Sanitizing/fumigating agents.**

Biocidal and biostatic substances that are used to kill or inhibit the growth of pests, including rodents, insects, and microorganisms.

**P13 Separation/filtration aids.**

Materials used to separate, or assist in separating, matter from a liquid food product on the basis of size, charge, or adsorption. This category includes membranes, molecular sieve resins, and ion-exchange resins.

**P14 Solvents/carriers/encapsulating agents.**

Liquids or solids used to extract, dissolve, carry or encapsulate one or more food constituents (e.g. nutrients, colors, and flavors).

**P15 Washing/surface removal agents.**

Substances that are used to wash, or assist in the removal of unwanted surface layers from plant or animal tissue.

## POUNDAGE UPDATE SURVEY OPERATING PROCEDURES

*Completed by FEMA's Flavor Ingredients Committee on November 1, 1995*

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### PURPOSE:

To collect usage data of all known flavor ingredients intentionally added to foods during a specific period, usually a one-year period, and provide this information to interested parties.

To support FDA, and the FEMA Expert Panel, in their role to overview the flavor ingredients in food usage -

- Trend of use, existing and new ingredients
- Shift in quantities of certain ingredients
- Potential need to subject an ingredient to safety evaluation
- Disappearance calculations into the food supply
- Calculation of Consumption Ratios
- Poundage information may result in generating FCC Specifications

### NOTE:

Flavor ingredients used in pharmaceuticals, tobacco flavors, pet foods, oral hygiene products, fragrances or for export will not be included in the Survey.

By tradition, the National Association of Chewing Gum Manufacturers' and the brewing industry conducted their own flavor ingredients poundage survey. They will have to be contacted at time, when FEMA is conducting new Poundage Update Survey.

Ingredients which have been removed from the GRAS list should be included in the survey, it would confirm industry compliance.

### STEPS:

1. Advisement of membership to prepare for survey (best done during the year to be surveyed, so members can collect data)
2. Preparation and mailing of the survey to membership (in coded form to assure confidentiality)
3. Flavor Ingredients Committee, Subcommittee Use and Use Levels, reviews returned surveys
4. Data entry into the computer for final preparation of report
5. Distribution of Report to appropriate recipients and respective evaluation of the reported data