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## **Ingredient Definitions Committee Report 1/19/16**

First Meeting: 2016 AAFCO Midyear Meeting in South Carolina  
Tuesday, January 19th, 2015 1:20 pm – 5:00 pm EST

IDC recommendations to the Board and Association Members. Text for the OP is in attachment A.

1. Publish the modified feed term for Feed Grade in the OP.
2. Publish the new feed term, Suitable for use in animal food in the OP.
3. Publish the new feed term for Human Grade in the OP.
4. Publish the tentative definition in the OP for  $\beta$ -Mannanase from *Bacillus subtilis* for Table 30.1 Enzymes and Source Organisms
5. Publish the revised definition in the OP for 33.1 Animal Fat
6. Publish the tentative definition in the OP for T33.24 Used Cooking Oil, Feed Grade
7. Publish the tentative definition in the OP for T36.14 *Lactobacillus animalis*
8. Publish the Note to add under the header in Section 40 in the OP.
9. Publish the nine prior Section 60 ingredient definitions in Section 40 in the OP using new Section 40 numbering.
10. Publish the tentative definition in the OP for T40.100 Recovered Retail Food
11. Publish the modified definition in the OP for 57.163 Selenium Yeast
12. Publish the tentative definition in the OP for T87.35 Glucose Syrup
13. Publish the tentative definition in the OP for T60.117 Dried Black Soldier Fly Larvae

### **Minutes of 1/19/16 IDC Meeting:**

#### **Role:**

**Committee Members:** Richard Ten Eyck, Alan Harrison, April Hunt, Steve Gramlich, Ali Kashani, Charlotte Conway (new member), Shannon Jordre, David Dressler, Erin Bubb, Mark LeBlanc, Brett Groves, Jacob Fleig, Kent Kitade  
On phone: Mika Alewynse, David Phillips .

**Advisors:** Dave Dzanis, Kristi Smedley, Jean Hofve, Susan Thixton, David Meeker, Leah Wilkinson, Jon Nelson, Jason Vickers, Denise Fung, James Emerson, Jessica Meisinger, Vince Sewalt, Jan Campbell, Jonathan Goodson, On phone: Mollie Morrissette

The meeting was convened at 1:21 pm by Chairperson Ten Eyck.  
Announced at the end of the meeting: Plan to hold teleconference/webinar meeting on February 12 (Friday) to cover the topics not covered in today's session because



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of limited time. All Feed Bin users and General Public will be invited to attend. All interested are welcome to join.

The Committee and Advisors introduced themselves, and the chair asked the regulators if anyone would like to join the committee. Charlotte Conway volunteered to join and participated.

1) Definitions to move tentative to official

a) none

2) Work Group Reports

a) Feed Grade work group report -

The work group recommended new terms for Feed Grade, Suitable for use in animal feed, and Human Grade. Steve Gramlich moves, April Hunt seconds the motion to ACCEPT the report. Motion PASSES.

b) AAFCO GRAS Work group report.

(i) The AAFCO GRAS Work group report was posted in the Feed Bin. Motion was made to accept the report. Steve Gramlich moves. Al Harrison seconds. Motion PASSES. Discussion: Leah Wilkinson summarized the workgroup activities, specifically that they discussed GRAS as an accepted federal designation for ingredients. The initial focus was on GRAS Notifications on which FDA had issued a no-questions letter. Subsequent meetings will focus on state GRAS determinations and AAFCO GRAS determinations. As for the first topic, the work group developed Recommendation #1 which proposes an approach to include GRAS Notification ingredients in the AAFCO OP. The Work group proposed these ingredients (those that were subject of no-questions letter) be entered into the AAFCO OP in new Section 101, and that they also be listed in the relevant ingredient section, with the statement, "GRAS Notification received a No-question letter by FDA on mm/dd/yyyy". A question was raised how the ingredient definition language would be developed; the thinking of the workgroup is that the definition would come through the IDC process so would be reviewed first by FDA and then by IDC. Future GRAS Notifications would be able to include a proposed definition, to make this process more efficient. Dave Edwards commented on the Feed Bin that GRAS notices are not evaluated the same as food additives and AAFCO feed ingredients since in the former case, FDA reviews a summary of the firm's determination of GRAS for an intended use. He wondered if the submitting firm would mind their information being included in a general definition in the AAFCO OP. Industry replied that this same situation occurs for food additives and AAFCO ingredient definitions. Since the "no questions" letter issued by CVM is firm/product/process specific, who "owns" the definition? Can it be generically used? Is it okay for the definition to be expanded upon?

(ii) Motion made by Steve Gramlich to ACCEPT the GRAS Work group



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Recommendation #1. Al Harrison seconds. Motion **TABLED to** the next IDC face-to-face meeting. Discussion: Brett Groves believes that there are issues that are not resolved/addressed. Will these run through IDC? Will the company name be listed? Charlotte Conway and Mark LeBlanc agreed. Some discussion ensued around whether or not these GRAS ingredients should be double-listed. According to Dave Dzanis and Kristi Smedley, double listing makes it easier for users to find ingredients. Jason Vickers (PFI) and Jan Campbell (NGFA) asked if they can join Workgroup. Brett suggested surveying the states and Industry.

**(iii) Motion was made to survey the states and industry about accepting** Recommendation #1. Brett moves and Jacob Fleig seconds. Motion PASSED. The Work group will develop a survey and provide the results to the IDC.

- c) Recap of Sunday Ingredient Definition workshop and any resource lists generated from it. Susan Thixton felt that the workshop was a useful exchange of wants and needs of regulatory authorities to get ingredients approved. Consumers provided their input. Jean Hofve offered that the information was somewhat confusing. Richard Ten Eyck said that the ingredient definition workshop recording and presentations will be organized and then posted to the IDC public website and in the BIN. Kristi Smedley mentioned that it would be helpful for the IDC to do a follow-up on Utility data submission since this is a complex area and was not addressed by FDA at the workshop. This will be considered by FDA. E-Submitter training will be provided again later on according to Dave Edwards.
- 3) New Definitions, deletes & edits:
- a) New Term: Animal Food – Ali Kashani  
Steve Gramlich moves to ACCEPT. Shannon Jordre seconds. MOTION to **TABLE this definition to the next Meeting** was PASSED.  
Discussion: Ali Kashani mentioned that this term was developed from 21 CFR Part 507.3 language was altered for food for humans and to include specialty pet food. April Hunt said that Model Bill sent these definitions to the Feed Grade Workgroup and explained that some felt there should be consistency with the Part 507.3 language – so should use “man” rather than “human”. Specialty pets are a different category in the AAFCO OP. Jenny Murphy asked why AAFCO needs to modify the FSMA definition. Erin Bubb supports including specialty pet food and asked if it is clear that finished feed and ingredients and premixes are included. Shannon offered that we could use the FSMA language, cite it, and then add a second sentence to say that this term includes specialty pet food and supplements. April Hunt suggested another option to use the FSMA term and then add the AAFCO extras parenthetically. **Ali will offer a modification at the next meeting.**
- b) Modify term: Feed(s) – Ali Kashani



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Shannon Jordre moves to ACCEPT. Mark LeBlanc seconds. MOTION to TABLE and consider modifying this definition for consideration at the next AAFCO Meeting was PASSED. FDA acknowledges that this is the definition in the AAFCO OP. Charlotte Conway said that this is not a useful definition the way it is worded and offered that someone from FDA would work with Ali Kashani on this term. Food and feed are more “what” terms and food grade and feed grade include a “processing” component. Jan Jarman thought that the definitions should align with one another. Jenny Murphy said that FDA is moving away from the term “feed” except for “medicated feed” and is using the term, “animal food”; feed and animal food need to be the same. Dave Dzanis said that we could use, “Feed – see Animal Food”.

c) Modify term: Feed Grade. Ali Kashani

Brett Groves moves to ACCEPT the definition as modified in the IDC meeting (on screen). Mark LeBlanc seconds. MOTION PASSES. Discussion: Feed Grade definition and Suitable for use in animal feed need to be the same language. Various approaches to cross-referencing were discussed and it was agreed to define the Feed Grade term followed by the parenthetical, “suitable for use in animal feed”. Then the latter term would be referenced to Feed Grade. Judy Thompson asked if Human Food grade ingredients could not be used for animals since this term is not part of the Feed Grade definition. Charlotte Conway replied that human food grade is a higher standard than animal feed grade, so it is assumed that Human Food grade may qualify for use in animal feed. The caveat is that the Human Food grade ingredient must be, “safe, functional and suitable for its intended use...”

d) New Term: Suitable for use in animal feed – Ali Kashani

Shannon Jordre moves to ACCEPT the definition as modified in the IDC meeting (on screen). Steve Gramlich seconds. MOTION PASSES.

e) New Term: Human Grade – Ali Kashani

Shannon Jordre moves to ACCEPT as edited in the IDC meeting (on screen). Mark LeBlanc seconds. MOTION PASSES.

Discussion: Jenny Murphy said that not all Human Grade food meets cGMPs. Charlotte Conway said that because USDA does not cover all human food, then the FDA regulation takes over. Further processing to make the USDA-regulated food into pet food makes this food covered by FDA 21 CFR part 117 (Human GMP’s). For a meat product, it is produced in a USDA-inspected plant and then would need to travel to an FDA-inspected plant to make it into pet food. This is a high threshold and this is on purpose. It was suggested that the IDC consider adding a reference in this new definition to the draft Human Grade guideline in the model pet food regulations.

f) New Feed Term: “sprouted” -Ali Kashani

Brett Groves moves to ACCEPT. Jacob Fleig seconds. Motion FAILS.

Discussion: This came from Industry and Regulators. Sharon Benz had

suggested that the example seeds (flax, quinoa, corn, rice, wheat, and barley) be included in the new feed term. Charlotte Conway asked if we should include these seeds and whether this warrants a new feed term or rather should be new definition(s) because the nutritional value may be different for sprouted seeds. Jenny Murphy asked if preventative controls referred to the FSMA term. Mika Alewynse recalled that the original intention was to define sprouted and include the ingredient definition from the USDA human food database. This new feed term would be used predominantly in pet food as nutrients. According to Steve Gramlich, since this is a process, it would in theory need to be able to be added to any grain. Does it change the grain nutritionally? If there will be a nutritional change, then it should not be a feed term, but a definition. It was decided to find out who in industry supports this new term, and to understand what is their intention.

- g) Edit 30.1 Enzymes tables – Jan Jarman discussed that she is working on modifying Table 30.1 Enzymes and Source Organisms to a text from a table format. Jan had raised this topic with the Enzyme Technical Association (ETA) and they had requested that this topic be deferred until after their Table 30.1 initiative is completed. Emily Helmes explained that ETA -- in response to the FDA request that companies need to start looking at available data to categorize ingredients as GRAS or Food Additives – has started to work on this for the ingredients in Table 30.1. She continued that in the course of discussing the table to text project, some questions have arisen regarding the Enzymes Table and that ETA would work with Jan Jarman and Mika Alewynse to investigate a way to help resolve these questions.
- h) New organism editorial add to 30.1  $\beta$  -mannanase from Dried *Bacillus subtilis* fermentation solubles – Jan Jarman  
Brett Groves moves to ACCEPT. Mark LeBlanc seconds. MOTION PASSES.
- i) Edit 33.1 Animal Fat – Ken Bowers  
Steve Gramlich moves to ACCEPT. Erin Bubb seconds. MOTION PASSES.  
Discussion: FDA is proposing this and the following fat and grease definitions in response to the deletion of Fat Product, Feed Grade (approved by the AAFCO Membership on January 18, 2016). This particular one is a technical edit to the existing definition and encompasses information provided by the NRA.
- j) T33.21 Yellow Grease, Feed Grade –Ken Bowers  
Steve Gramlich moves to ACCEPT. Erin Bubb seconds. MOTION was TABLED to the next IDC Meeting. Discussion: Charlotte Conway asked if this definition needs a BSE caution statement in this definition. David Meeker said that this caution statement is not needed on this definition. Shannon said that for tallow it should be included.
- k) T33.22 White Grease, Feed Grade –Ken Bowers withdrew this definition.

- l) T33.23 Tallow, Feed Grade – Ken Bowers withdrew this definition
- m) T33.24 Used Cooking Oil, Feed Grade – Ken Bowers  
Shannon Jordre moves to ACCEPT as adjusted. David Dresslor seconds.  
MOTION PASSES. Discussion: Vegetable oil can come from multiple sources. Ross Hamilton, Darling Ingredients said that the level of 20% free fatty acid (FFA) maximum would exclude several products. The FFA level is generally disclosed by the producer to the buyer and may be over 20%. Charlotte said that the 20% described a typical analysis of cooking oil according to a trade publication; FDA had some concern about a higher level of FFA being problematic, with rancidity potential. Shannon would not object to changing the FFA provided that a guaranteed maximum level (not to exceed) is clearly stated. Does tallow need to be included in this definition? It was thought not because Used cooking oil is included in the FDA plate waste exemption. Concern expressed over the international (Canada) standards being met. It was agreed to amend language to strike the 20% max FFA and add, “Maximum free fatty acids must also be guaranteed.”
- ~~n) T33.xx Fatty acids/esters (placeholder) – Ken~~
- ~~e) Modify 33.3 Hydrolyzed \_\_\_\_\_ Fat, or Oil, Feed Grade (placeholder) – Ken~~
- p) T36.14 *Lactobacillus animalis* –Jan Jarman  
Shannon Jordre moves to ACCEPT. Alan Harrison seconds.  
MOTION PASSES. Discussion: This microorganism is to be added to the Direct Fed Microorganisms list due to a nomenclature change.
- q) Add note below the Section 40 Header– Dan Danielson.  
April Hunt moves to ACCEPT with original language plus an “a” to coco. Steve Gramlich seconds. MOTION PASSES.  
Discussion: Who is the “firm”? The intention is that this is the company placing the ingredient on the market; this is consistent with the FFDCA. And what is meant by “safety assessment”? This same company must be responsible for conducting a safety assessment to ensure that their by-products are suitable for use in animal food. This note was added because the firms responsible for these are not necessarily focused on animal food. So there is extra language to take this into account. According to Jenny Murphy, a lot of human by product food producers may not have the capability to make these determinations. The consensus was that the company placing the ingredient in the market for feed use is responsible for proving safety for the intended use prior to such marketing.
- r) Section 40 Sort human food by products – Dan Danielson.  
Erin Bubb moves to ACCEPT. David Dresslor seconds. MOTION PASSES.  
Discussion: Preference appears to be to use the new numbers, and not the old. Leah Wilkinson thinks that there are other definitions that will need to move to this Section. Richard Ten Eyck suggested the IDC deal with



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these now and others later.

- s) T40.100 Recovered Retail Food – Dan Danielson  
Dave Dresslor moves to ACCEPT. April Hunt seconds. MOTION PASSES.  
Discussion: Considerable effort has been made on this definition. All were in favor with no discussion.
- t) T54.xx Dried Milk Permeate – Catherine Marrier.  
Dr. Burkholder would like more information on the processing of this ingredient. Industry is asked to contact Catherine Marrier/Investigator.
- u) Technical correction to 57.163 Selenium Yeast – Jennifer Kormos.  
Brett Groves moves to ACCEPT. Mark LeBlanc seconds. MOTION PASSES.  
Discussion: This language aligns the definition with the CFR.
- v) ~~List of standard food names from USDA – Richard~~
- w) 87.1 Dried Algae Meal (out of time: deferred to Feb 12)
- x) 87.36 Phaffia yeast (out of time: deferred to Feb 12)

**Colorants:** (out of time: deferred to Feb 12)

Plan to take these as a group (with luck ☺)

- y) 87.100 FD&C Blue No 1.
- z) 87.102 FD&C Blue No 2.
- aa) 87.103 FD&C Green No 3.
- bb) 87.104 FD&C Red No 3.
- cc) 87.105 FD&C Red No 40.
- dd) 87.106 FD&C Yellow No 6.
- ee) 87.107 FD&C Yellow No 5.
- ff) 87.110 Annatto Extract
- gg) 87.112 Astaxanthin dimethyldisuccinate
- hh) 87.114 Astaxanthin
- ii) 87.116 Caramel
- jj) 87.118 Carmine
- kk) 87.120 Carrot Oil
- ll) 87.122 Cochineal Extract
- mm) 87.124 Corn Endosperm Oil
- nn) 87.126 Dehydrated Beets
- oo) 87.128 Fruit Juice
- pp) 87.130 Haematococcus algae meal
- qq) 87.132 Paprika Oleoresin
- rr) 87.134 Paprika
- ss) 87.136 Paracoccus pigment
- tt) 87.138 Riboflavin
- uu) 87.140 Saffron
- vv) 87.142 Synthetic Iron Oxide
- ww) 87.144 Tagetes (Aztec Marigold) Extract
- xx) 87.145 Tagetes (Aztec Marigold) Meal



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- yy) 87.146 Titanium Dioxide
- zz) 87.148 Toasted Partially Defatted Cooked Cottonseed Flour
- aaa) 87.150 Tomato Lycopene Concentrate
- bbb) 87.152 Tomato Lycopene Extract
- ccc) 87.154 Turmeric Oleoresin
- ddd) 87.155 Turmeric
- eee) 87.156 Ultramarine Blue
- fff) 87.158 Vegetable Juice
- ggg) 87.160  $\beta$ -apo-8' -carotenal
- hhh) 87.164  $\beta$ -Carotene
- iii) Renumber section 73 transfers – Richard (out of time: deferred to Feb 12)

jjj) T87.35 Glucose Syrup – Richard Ten Eyck/Mika Alewynse  
Mark LeBlanc moves to ACCEPT. Brett Groves seconds. MOTION PASSES.  
Discussion: Leah Wilkinson questioned the use of “must” in the AAFCO definition versus “may” in the CFR citation. FDA said that the meaning is the same.

kkk) T60.117 Dried Black Soldier Fly Larvae– Erin Bubb  
Brett Groves moves to ACCEPT. Mark LeBlanc seconds. MOTION PASSES.  
Discussion: Submission packet was complete. CVM has reviewed this packet and has agreed to this definition. This is only for use in salmonids. Typically CVM has not extrapolated from aqua species to terrestrial species. This is limited to larvae grown on feed grade materials. If industry is interested in non-salmonids, then they would need to submit safety and utility data on other species.

lll) Modify Dried Bovine Colostrum to 9.5% moisture – Catherine Marrier  
Would like more industry support on this definition. With Bovine Colostrum still in tentative status, this one is not yet ready to become a definition.

mmm) TXX.XXX Dried Colostral Cream – Catherine Marrier.  
Bill Burkholder asks Industry to provide substantiating information to these definitions and to submit this to Catherine Marrier.



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- 4) Discussions: (out of time all deferred to 2/12/16)
  - a) Hemp in Feed -- ~~National Hemp Growers Association~~
  - b) Values in Footer on Vitamin Table ; original source? Use human or animal bio-availabilities? - Tom
  - c) Montmorillonite update for Industry - Tom
  - d) Fabricated Meat background information. Term needed? - ATPF
  - e) ~~Gras notified section in the BIN or OP? — Mika, CVM covered by workgroup~~
  - f) Materials NOT suitable for animal feed list in the BIN or website - rt

Next Meeting will be 2/12/16 by webinar at 11:30am EST

### **IDC Meeting Feb 12 2016**

**Join us for a webinar on Feb 12, 2016 at 8:30 AM PST.**

**Register now!**

**<https://attendee.gotowebinar.com/register/487372095351291905>**

**Ingredient Definitions Committee meeting.**

**After registering, you will receive a confirmation email containing information about joining the webinar.**

**Erin Moves, Mark seconds Meeting was adjourned at 5:05 pm.  
Minutes and report were approved by IDC 2/12/16**



**Attachment A for the 1/19/16 IDC meeting:**

New Feed Terms:

**Feed Grade:** Material that has been determined to be safe, functional and suitable for its intended use in animal food, is handled and labeled appropriately, and conforms to the Federal Food, Drug and Cosmetic Act unless otherwise expressly permitted by the appropriate state or federal agency (Suitable for use in animal feed).

**Suitable for use in animal feed:** See *Feed Grade*.

**Human Grade:** Every ingredient and the resulting product are stored, handled, processed, and transported in a manner that is consistent and compliant with regulations for current good manufacturing practices (cGMPs) for human edible foods as specified in 21 CFR Part 117.

**New Definitions or Edits:**

**30.1 Add a Beta-Mannanase from Dried *Bacillus subtilis* fermentation solubles; edit enzyme table to show:**

| Classification/ Name | Source organism                 | Typical substrate                     | Function    | Current supported use                           |
|----------------------|---------------------------------|---------------------------------------|-------------|---|
| Beta-mannanase       | <i>Bacillus subtilis</i> , var. | distillers dried grains with solubles | (no change) | reduction of digesta viscosity with swine diets |

**33.1 Animal Fat** is obtained from the tissues of mammals and/or poultry in commercial processes of rendering or extracting. It consists predominately of glyceride esters of fatty acids and contains no additions of free fatty acids or other materials obtained from fats. It must contain, and be guaranteed for, not less than 90% total fatty acids, not more than 2.5% unsaponifiable matter, and not more than 1% insoluble impurities. Maximum free fatty acids and moisture must also be guaranteed. If the product bears a name descriptive of its' kind or origin; e.g. "beef", "pork", "poultry", it must correspond thereto. Rendered animal fat derived from only pork raw materials can be labeled as white grease. Rendered animal fat derived from only cattle raw materials can be labeled as beef tallow. Tallow containing greater than 0.15% insoluble impurities must be labeled with the BSE caution



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statement “do not feed to cattle or other ruminants.”

If an antioxidant is used, the common name or names must be indicated, followed by the words “used as a preservative”.

**T33.24 Used Cooking Oil, Feed Grade** is the product of used cooking or frying oil from human food preparation, consisting of animal and/or vegetable fats or oils, collected from commercial human food facilities then heated to reduce moisture. It must contain, and be guaranteed for, not less than 90% total fatty acids, not more than 1% unsaponifiable matter, not more than 0.5% insoluble impurities, and not more than 1% moisture. Maximum free fatty acids must also be guaranteed. This product may not include recovered trap grease or material recovered from sanitary sewer sources. If an antioxidant(s) is used, the common name or names must be indicated, followed by the words "used as a preservative".

**Add “Lactobacillus animalis” to the organism list in definition 36.14.**

#### **Section 40 Human Food By Products**

**NOTE:** All ingredients must be feed grade. Firms should perform a safety assessment of materials that may be included in the offered feed ingredient, at the maximum use level (including cocoa products and non-nutritive sweeteners), to determine safety for the intended animal species and the safety of milk, meat, or eggs from animals consuming the ingredient. The safety assessment should be archived in the firm’s files and provided to State or Federal Regulators upon request.

**Renumber and move the following to section 40:**

- 60.96 Food processing waste
- 60.35 Sugar Food By-Product
- 60.93 Pasta Product
- 60.14 Cereal Food Fines
- 60.29 Gelatin By Products
- 60.34 Dried Beans
- 60.15 Dried Bakery Product
- 60.97 Restaurant Food waste
- 60.107 Mixed feed nuts

**T40.100 Recovered Retail Food-** is composed of edible human food products safe and suitable for livestock feed that are collected from retail food establishments, domestic holding facilities, and domestic packing facilities. Permitted recovered retail foods are products from overstocks, lacking consumer acceptance, or beyond their sell-by date that include items such as bruised, cut, or overly-ripe produce (fruit and vegetables), bakery goods, eggs, and dairy products. It shall be safe and appropriately labeled for its intended use and shall be free of material harmful to



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animals. Materials excluded from this definition include pet foods, products containing: beef, lamb, pork, poultry, fish or shellfish. It must not contain packaging materials (e.g., plastics, glass, metal, string, styrofoam, cardboard, and similar materials), flowers, potted plants, or potting soil.

The recovered foods shall be collected and intermixed in secure holding containers to exclude unauthorized addition of trash, materials harmful to animals, or infestation and adulteration by pests. Egg and dairy products (and other products ordinarily held at refrigerator temperatures) must be kept in cold storage until the scheduled pick-up. To minimize spoilage, the recovered retail food shall be collected at least weekly, or more frequently if necessary. The establishment should have a sanitation plan in place, and the containers should be cleaned and sanitized as necessary. The collected material may be further processed or delivered as-is to an animal feeding facility. The product must be handled to preserve its safety and nutritional value.

**57.163 Selenium Yeast** is a dried non-viable yeast, *Saccharomyces cerevisiae*, cultivated in a fed-batch fermentation which provides incremental amounts of cane molasses and selenium salts in a manner which minimizes the detrimental effects of selenium salts on the growth rate of the yeast and allows for optimal incorporation of inorganic selenium into cellular organic material. Residual inorganic selenium is eliminated in a rigorous washing process and must not exceed 2% of the total selenium content in the final selenium yeast product. Guaranteed organic selenium content must be declared on the product label. The additive selenium yeast may be added to:

- 1) complete feeds for chickens, turkeys, swine, beef cattle, dairy cattle, bison, sheep, goats, llamas, alpacas, and horses at a level not to exceed 0.3 part per million of selenium, and to complete dog foods at a level not to exceed 0.333 part per million of selenium on a dry matter basis;
- 2) feed supplements for limit feeding for beef cattle, bison and horses at a level not to exceed an intake of 3 milligrams per head per day:
- 3) feed supplements for limit feeding for goats, llamas, and alpacas at a level not to exceed an intake of 0.7 milligrams per head per day:
- 4) salt-mineral mixtures for free-choice feeding of beef cattle, bison, and horses up to 120 parts per million in a mixture for free-choice feeding at a rate not to exceed an intake of 3 milligrams per head per day:
- 5) salt-mineral mixtures for free-choice feeding for goats, llamas and alpacas up to 90 parts per million in a mixture for free-choice feeding at a rate not to exceed an intake of 0.7 milligrams per head per day.

Selenium yeast shall be incorporated into each ton of complete feed by adding no less than 1 pound of a premix containing no more than 272.4 milligrams of added selenium per pound. 21 CFR 573.920. **The label or labeling of any selenium premix shall bear adequate directions and cautions for use including this statement: "Caution: Follow label directions. The addition to feed of higher**

**levels of this premix containing selenium is not permitted.** (Proposed 2002, Amended 2003, 2004, 2007\*, 2008, 2009, Adopted 2011).

**T60.117 Dried Black Soldier Fly Larvae** is the dried larvae of the Black Soldier Fly, *Hermetia illucens*, that has been raised on a feedstock composed exclusively of **feed grade materials**. The ingredient must contain not less than 34% crude protein and 32% fat on an as-fed basis. The ingredient is dried by artificial means to no more than 10% moisture. It is for use in **salmonid** fish feed as a source of protein and fat consistent with good feeding practices.

**T87.35 Glucose syrup** is the purified, concentrated, aqueous solution of nutritive saccharides obtained from edible starch. It shall meet the following specifications: total solids content not less than 70.0 percent mass/mass (m/m) and reducing sugar content (dextrose equivalent), expressed as D-glucose, not less than 20.0 percent m/m calculated on a dry basis. The sulfated ash content is not more than 1.0 % m/m (calculated on a dry basis) and the sulfur dioxide content is not more than 40 mg/kg. If the product bears a name descriptive of its kind or origin, e.g., "corn syrup", "grain sorghum syrup", it must correspond thereto. (21 CFR 168.120)