

METHODS COMMITTEE REPORTS

Committee on Feeds, Fertilizers, and Related Agricultural Topics

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Committee Actions

Although no committee teleconference was held this year, several collaborative study protocols are undergoing the review process. The General Referee recommendations are as follows:

Feeds, Nancy Thiex

(1) *Amylase-Treated Neutral Detergent Fiber*: Study Director David Mertens, U.S. Dairy Forage Research Center, Madison, WI, Tel: +1-608-264-5228, Fax: +1-608-264-5275; E-mail: davem@dfrc.dfrc.wisc.edu. Study Director is finalizing the study report and plans to submit it for review in the near future. Continue study.

(2) *Chelated (Organic) Minerals*: Study Director Grahame A. Leach, Chelated Minerals Corp., PO Box 27872, Salt Lake City, UT 84127, Tel: +1-801-973-4500, Fax: +1-801-972-4068, E-mail: keylated@biokeylate.com. No activity during the past year. Discontinue study.

(3) *Crude Protein*: Topic Advisor Peter F. Kane, Office of the Indiana State Chemist, Purdue University, 1154 Biochemistry Bldg, West Lafayette, IN 47907-1154, Tel: +1-765-494-1560, Fax: +1-765-494-4331, E-mail: kanep@isco.purdue.edu. No pending workload and no activity during the past year. Discontinue topic. Recommend Methods **990.02** and **990.03** for Final Action status.

(4) *Crude Protein in Animal Feeds, Forages, Cereal Grains, and Oilseeds; Block Digestion, Steam Distillation Method, I-3*: Study Directors Nancy Thiex and Harold Manson, Oscar E. Olson Biochemistry Labs, South Dakota State University, Brookings, SD 57007, Tel: +1-605-688-5466, Fax: +1-605-688-6295, E-mail: nancy_thiex@sdstate.edu; and harold_manson@sdstate.edu, Shirley Anderson, Foss North America, 7682 Executive Dr, Eden Prairie, MN 55344, Tel: +1-952-974-9892 ext.161, Fax: +1-952-974-9823, E-mail: sanderson@fossnorthamerica.com; and Jan-Ake Persson, Foss Tecator, Tecator AB, Box 70, SE-263 21 Höganäs, Sweden, Tel: +46-42-361500 or +46-42-361638, Fax: +46-42-340349, E-mail: jan-ake.persson@foss.tecator.se. Collaborative study report has been submitted to AOAC and is in the review process. Continue study.

(5) *Crude Fat, Diethyl Ether Extraction, in Feeds, Cereal Grains, and Forages (by Randall/Soxtec/Submersion Method, Ic-017)*: Study Directors Nancy Thiex and Bryan Gildemeister, South Dakota State University, Brookings, SD, Tel: +1-605-688-5466, Fax: +1-605-688-6295, E-mail: nancy_thiex@sdstate.edu and bryan_gildemeister@sdstate.edu; Shirley Anderson, Foss North America, 7682 Executive Dr, Eden Prairie, MN 55344, Tel: +1-952-974-9892 ext. 161, Fax: +1-952-974-9823, E-mail: sanderson@fossnorthamerica.com. Collaborative study protocol has been submitted to AOAC and is in the review process. Continue study.

(6) *Crude Fat, Hexanes Extraction, in Feeds, Cereal Grains, and Forages (by Randall/Soxtec/Submersion Method, Ic-028)*: Study Directors Nancy Thiex and Bryan Gildemeister, South Dakota State University, Brookings, SD, Tel: +1-605-688-5466, Fax: +1-605-688-6295, E-mail: nancy_thiex@sdstate.edu and bryan_gildemeister@sdstate.edu, Shirley Anderson, Foss North America, 7682 Executive Dr, Eden Prairie, MN 55344, Tel: +1-952-974-9892 ext. 161, Fax: +1-952-974-9823, E-mail: sanderson@fossnorthamerica.com. Collaborative study pro-

tozol has been submitted to AOAC and is in the review process. Continue study.

(7) *Inorganic Elemental Constituents of Plant Samples, Microwave Digestion*: Topic Advisors Robert Miller, Colorado State University, Fort Collins, CO, Tel: +1-970-493-4382, Fax: +1-970-416-5820, E-mail: rmiller@lamar.colostate.edu; and Nancy Thiex, South Dakota State University, Brookings, SD, Tel: +1-605-688-5466, Fax: +1-605-688-6295, E-mail: nancy_thiex@sdstate.edu. No activity during the past year. Continue topic.

(8) **999.13** *Lysine, Methionine, and Threonine in Pure Amino Acids (Feed Grade) and Premixes*: Study Directors Johannes Fontaine, Degussa AG, Hanau, Germany, Tel: +49-6181-593259, Fax: +49-6181-593908; and Marcelle Eudaimon, Customer's Laboratory, Zone Industrielle Nord, Rue de Vaux, F-80884 Amiens Cedex 2, France, Tel: +33-225470-11 or 17, Fax: +33-225470-38, E-mail: Johannes.Fontaine@degussa-huels.de. Method has Official First Action status. Continue study.

(9) *Microscopy*: Topic Advisor Mike Buckner, Division of Consolidated Lab Services (DCLS), 1 N 14th St, Rm 127, Richmond, VA 23219, Tel: +1-804-225-4070, Fax: +1-804-796-7795, E-mail: mbucker@dgs.state.va.us. No activity during the past year. Continue topic.

(10) *Water (Moisture)/Dry Matter in Animal Feed, Grain and Forage (Plant Tissue) by Karl Fischer Titration, I-28*: Study Directors Nancy Thiex and Terri Van Erem, South Dakota State University, Oscar E. Olson Biochemistry Labs, PO Box 2170, Brookings, SD 57007-1217, Tel: +1-605-688-5466, Fax: +1-605-688-6295, E-mail: nancy_thiex@sdstate.edu and terri_vanerem@sdstate.edu. Collaborative study report has been submitted to AOAC and is in the review process. Continue study.

(11) *Neutral Detergent Fiber, Acid Detergent Fiber, and Lignin Using Filter Bag Technology*: Study Director Andrew Komarek, ANKOM Technology Corp., Fairport, NY 14450, Tel: +1-716-425-3940, Fax: +1-716-425-3941, E-mail: akomarek@ankom.com. Continue study.

(12) **2000.12** *Phytase Activity in Feeds*: Study Director Peter H.G. Randsdorp, SDM Food Specialties, Department ISL/SP pp 010-0585, PO Box 1, Delft, 2613-MA, The Netherlands, Tel: +31-15-2793543, Fax: +31-15-2792357, E-mail: Peter.Randsdorp@dsm-group.com. Method has Official First Action status. Continue study.

(13) *Sample Preparation*: Topic Advisor George W. Latimer, Office of the Texas State Chemist, College Station, TX 77841-3160, Tel: +1-979-845-1121, Fax: +1-979-845-1389, E-mail: GWL@otsc.tamu.edu. Continue topic.

(14) **999.12** *Taurine in Pet Foods, Liquid Chromatographic Method*: Study Director Claudia Hischenhuber, NESTEC Ltd. Research Centre, Quality & Safety Assurance Department, Vers-Chez-Les-Blanc, Lausanne 26, 1000-CH, Switzerland, Tel: +41-21-7858352, Fax: +41-21-7858553, E-mail: claudia.hischenhuber@rdls.nestle.com. Method has Official First Action status. Continue study.

(15) *Vitamin A, LC Method*: Topic Advisor John L. MacDonald, Ralston Purina Co., St. Louis, MO. Retire Topic Advisor. Continue topic.

(16) A number of methods were never recommended for Final Action in the past. The following are recommend Official Methods for Final Action at this time: **990.03**, **990.02**, and **941.04**.

Antibiotics in Feeds, Hussein Ragheb

(1) *Apramycin in Feeds*: Study Director Candace Herrick, Elanco Animal Health, Drop Code GL 10, 2001 W. Main St, Greenfield, IN 46140, Tel: +1-317-433-3713, Fax: +1-317-277-4167, E-mail: candaceherrick/ar/lly@lilly.com. Continue study.

(2) **993.29** *Bacitracin in Feeds*: Elizabeth Luigs, Study Director for Zinc Bacitracin, and Linda Panazzo, Study Director for Bacitracin Methyl Disalicylate, reported no new studies. Both are from Alpharma Animal Health Division, 400 State St, Chicago Heights, IL 60411, Tel: +1-708-758-0111, Fax: +1-708-757-2510. Continue study.

(3) *Neomycin in Feeds*: Study Director Deeny Ferraro, Pennfield Animal Health, 14040 Industrial Rd, Omaha, NE 68144, Tel: +1-402-330-6000, Fax: +1-402-330-6004, E-mail: deeny@norcia.net. Will modify the neomycin microbiological Method **998.02** to improve the slope of neomycin reference standard. The General Referee concurs with the recommendation.

(4) *Low Level Chlortetracycline in Feeds*: Study Director Deeny Ferraro (see 3). Continue study.

(5) *Tylosin in Premix and Animal Feeds*: Study Director Mark R. Coleman, Eli Lilly and Co., 2001 W. Main St, GL 36, Greenfield, IN 46140-0108, Tel: +1-317-277-4613, Fax: +1-317-277-4993, E-mail: coleman_mark_r@lilly.com. Continue study.

(6) *Narasin*: Study Director, Mark R. Coleman (see 5). Continue study.

(7) *Penicillin*: Study Director Steven Holmes, Alpharma, 400 State St, Chicago Heights, IL 60411, Tel: +1-708-757-2505, Fax: +1-708-757-3510. Continue study.

(8) *Chlortetracycline*: Study Director Steven Holmes (see 7). Continue study.

(9) *Virginiamycin with Other Drugs*: Study Director Hussein Ragheb, Office of the Indiana State Chemist, 1154 Biochemistry Bldg, Purdue University, West Lafayette, IN 47907, Tel: +1-765-494-1572, Fax: +1-765-496-6349, E-mail: raghebh@purdue.edu. Continue study.

(10) *Bambermycin*: Study Director Denise Riley Moore, Woodson Tenent Laboratories, 345 Arbor Ave, Memphis, TN 38103, Tel: +1-901-521-4500, Fax: +1-901-521-4510, E-mail: Dmoore@wtlabs.com. Continue study.

(11) *Salinomycin*: The General Referee recommends the appointment of Steven Holmes (see 7) for the microbiological turbidimetric assay of salinomycin in feeds.

(12) *Hygromycin in feeds*: Vacant.

(13) *Direct-Fed Microbiological Products and Silage Inoculants*: Vacant.

Drugs in Feeds, Harold Campbell

(1) *Amprolium, LC Method*: Study Director Fred Armstrong, Canadian Food Inspection Agency, Ottawa Laboratory, Bldg 22, Central Experimental Farm, 960 Carling Ave, Ottawa, ON K1A 0C6, Canada, Tel: +1-613-759-1299, Fax: +1-613-759-1260, E-mail: farmstrong@inspection.gc.ca. Study Director reports that preliminary work to improve the LC separation is underway. An alternative LC column, which allows high pH mobile phases, shows promise but ideal conditions have not yet been obtained. Continue study.

(2) *Carbadox*: A new Study Director is required. There has been no reported activity. Continue study.

(3) *Chlortetracycline, LC Method*: Study Director Richard Larson, South Dakota State University, Chemistry Department, PO Box 2202, Shepard Hall, Brookings, SD 57007, Tel: +1-605-688-4258, Fax: +1-605-688-6364, E-mail: LarsonR@mg.sdstate.edu. No report was submitted. Continue study and initiate a collaborative study of the method of Houghlum and Larson, *J. AOAC Int.* **80**, 961-965(1997).

(4) *Ethopabate*: Study Director Joseph Hillebrandt, Cornell University Diagnostic Laboratory, Nutritional and Environmental Analytical Services, 777 Warren Rd, Ithaca, NY 14850. Tel: +1-607-257-2345, Fax: +1-607-257-5041, E-mail: jh119@cornell.edu. No report was received. Continue study.

(5) *Ivermectin*: Study Director David W. Fink, Merial Ltd., 2100 Ronson Rd, Mailstop NB, Iselin, NJ 08830-3077, Tel: +1-215-652-2800, Fax: +1-215-652-2821, E-mail: David.Fink@merial.com. LC method retains its Peer-Verified Status, and there is no new information to report on this topic.

(6) *Lasalocid*: Study Director Charles Focht, Nebraska Department of Agriculture, 3703 South 14th St, Lincoln, NE 68502-5399, Tel: +1-402-471-2176, Fax: +1-402-471-0091, E-mail: chaslf@agr.state.ne.us. The Study Director reports that plans are progressing for the collaborative study of a reversed-phase LC method.

(7) *Melengestrol Acetate in Feeds*: Study Director Dawn A. Merritt, Pharmacia & Upjohn, Inc., MR 7926-300-409, 7000 Portage Rd, Kalamazoo, MI 49001, Tel: +1-616-833-2382, Fax: +1-616-833-7721, E-mail: Dawn.A.Merritt@am.pnu.com. There is no new information to report. Continue study of LC method.

(8) *Monensin, Narasin, and Salinomycin, LC Method*: Study Director Harold Campbell, Canadian Food Inspection Agency, Ottawa Laboratory, Bldg 22, Central Experimental Farm, 960 Carling Ave, Ottawa, ON K1A 0C6, Canada, Tel: +1-613-759-1259, Fax: +1-613-759-1260, E-mail: hcampbell@inspection.gc.ca. The Study Director reports that a joint ISO/AOAC collaborative study of an LC method using post-column derivatization, similar to AOAC Official Method **997.04**, is in progress. It is expected that the study will be completed by early 2002.

(9) *Monensin, LC Method*: Study Director Mark R. Coleman, Elanco Animal Health, Eli Lilly and Co., 2001 W. Main St, Greenfield, IN 46140, Tel: +1-317-277-4613, Fax: +1-317-277-4167, E-mail: Coleman_Mark_R@lilly.com.

(10) *Morantel Tartrate*: A new Study Director is required. There has been no reported activity. LC method is desired. Continue study.

(11) *Narasin, LC Method*: Study Director Mark R. Coleman, Elanco Animal Health, Eli Lilly and Co., 2001 W. Main St, Greenfield, IN 46140, Tel: +1-317-277-4613, Fax: +1-317-277-4167, E-mail: Coleman_Mark_R@lilly.com.

(12) *Nicarbazin*: Study Director Noah Miller, Koffolk (1949) Ltd., PO Box 1098, Tel Aviv 61010, Israel, Tel: +972-3-9273150, Fax: +972-3-9273161, E-mail: noah@koffolk.co.il. No report was received. Continue study of LC method reported by Krael et al, *J. AOAC Int.* **83**, 1027-1037(2000).

(13) *Nifursol*: Study Director Ellen Jan de Vries, Solvay Pharmaceuticals BV, Fidelolaan 41, Amstelveen, 1183-PH, The Netherlands, Tel/Fax: +31-20-641-1211, E-mail: ej.devries@wxs.nl. As previously reported, Brand Specific Approval of sulfuride 50DF (commercial name for the dry preparation with 50% nifursol) was obtained. The method requires validation in the EU, and this work belongs to the Committee of Experts of Analytical Methods (CEMA). CEMA has assigned medium priority to this method.

(14) *Oxytetracycline, LC Method*: Study Director Luann Wetzler, Nebraska Department of Agriculture, 3703 S. 14th St, Lincoln, NE 68502-5399, Tel: +1-402-471-2176, Fax: +1-402-471-0091, E-mail: luannmw@agr.state.ne.us. The Study Director continues to collect method comparison data with the intention of conducting a collaborative study of the method of Houghlum et al., *J. AOAC Int.* **81**, 919-922(1998).

(15) *Pyrantel Tartrate*: A new Study Director is required. There has been no reported activity. LC method is desired. Continue study.

(16) *Roxarsone*: Study Director Margaret Pomeroy, Alparma, Inc., Animal Health Division, 400 State St, Chicago Heights, IL 60411-1242, Tel: +1-708-758-0111, Fax: +1-708-757-2510, E-mail: peggy.pomeroy@alparma.com. AOAC Official Method **971.47** is the most commonly used procedure for roxarsone (3-nitro-4-hydroxyphenyl arsonic acid) in feeds. LC method is being sought; however, no advances have been made during the last year. Continue study.

(17) *Sulfa Drug Residues*: The previous Study Director, Valerie Reeves, has resigned. The General Referee requests information from interested parties as to future activities with this topic.

(18) *Sulfamethazine, LC Post-Column Method*: Method Advisor Kendrick Albert, Office of the Indiana State Chemist, Purdue University, 1154 Biochemistry Bldg, West Lafayette, IN 47907-1154, Tel: +1-765-494-1563, Fax: +1-765-494-4331, E-mail: albertk@purdue.edu. No report was received. Method **999.16** received First Action status in 1999. The General Referee intends to recommend Final Action status in 2002. Comments on this recommendation are welcome. Continue study.

(19) *Tilmicosin*: Study Director Robin S. Readnour, Elanco Animal Health, Eli Lilly and Co., 2001 W. Main St., Greenfield, IN 46256, Tel: +1-317-277-5063, Fax: +1-317-277-4993, E-mail: R.S.Readnour@lilly.com. There are no active projects on this topic. The current method and

interlaboratory study information was published, *J. AOAC Int.* **80**, 1156–1170(1997). Continue study.

(20) *Tylosin, LC Method*: Study Director Mark R. Coleman, Elanco Animal Health, Eli Lilly and Co., 2001 W. Main St., Greenfield, IN 46140, Tel: +1-317-277-4613, Fax: +1-317-277-4167, E-mail: Coleman_Mark_R@lilly.com. Work continues slowly on the development of LC method. Continue study.

(21) *New Topics*: Study Directors are solicited for other topics such as clopidol, decoquinat, diclazuril, halofuginone, maduramicin, ormetoprim/sulfadimethoxine, and semduramicin. Interested scientists or organizations are encouraged to contact the General Referee or AOAC.

Fertilizers and Agricultural Liming Materials, Peter Kane

(1) **929.01 Sampling**: Method Advisor Douglas Caine, IMC Global, PO Box 491, Whiting, IN 46394, Tel: +1-219-659-3020, E-mail: dcaine19@msn.com. Mr. Caine recommends an editorial change to **929.01(a)**, second sentence, as follows: "Trier length, exclusive of handle, will be approximate length of filled bag to be sampled, but >25 in. (635 mm); length of slot >23 in. (584.2 mm); width of slot \geq 0.75 in. (19 mm), and id >0.875 in. (22 mm)." (Due to an oversight, the method currently mistakenly indicates an id of 1.125 in.)

Mr. Caine also recommends an editorial correction, for clarity, to **929.01 (b)**, as follows: "Draw 10 vertical cores distributed in standard concentric sampling pattern (Figure **929.01A**) of such design that core from each rectangle represents approximately equal fractions of lot."

Mr. Caine also indicates that he soon intends to propose a new study topic for sampling from 1 ton mini-bulk fertilizer bags.

(2) *Phosphorus*: Study Director Joseph E. Gliksman, IMC Agrico, PO Box 2000, Mulberry, FL 33860, Tel: +1-941-428-7140, Fax: +1-941-428-7312, E-mail: je_gliksman@imc-agrico.com. The Study Director reports no activity, and recommends the topic be discontinued.

The GR recommends an applicability note to **960.01**, available phosphorus by the indirect extraction method, on behalf of AAPFCO, the Association of American Plant Food Control Officials, as follows: "Note that the indirect method will give recovery of phosphite source materials as available phosphorus, even though AAPFCO does not recognize phosphite as a source of available phosphorus."

(3) **983.02 Potassium, Flame Photometric Detection**: Study Director Natalie Newlon, Office of the Indiana State Chemist, Purdue University, 1154 Biochemistry Bldg, West Lafayette, IN 47907-1154, Tel: +1-765-494-1563, Fax: +1-765-494-4331, E-mail: newlonn@purdue.edu. Ms. Newlon has done a study, and presents the data at this meeting, showing no difference extracting fertilizer samples for potassium analysis by **983.02B(a)**, the classic ammonium oxalate extraction, and **993.31C**, an updated version of **960.03B**. She therefore recommends that after paragraph **983.02B(b)**, a new paragraph be added as follows: "(c) *Ammonium citrate/EDTA extraction from direct available phosphorus extract*—Prepare extraction solution as in **993.31B(c)**. Extract samples as in **993.31C**."

(4) *Controlled Release Nutrient Extraction*: Study Director William Hall, IMC Global, PO Box 2000, 3095 County Rd, 640 W, Mulberry, FL 33860-1100, Tel: +1-863-428-7161, Fax: +1-863-428-7312, E-mail: wllhall@imcglobal.com. Collaborative study data were received, and review of the data and comments indicates the need for additional modifications in the procedure. Data and an update presentation were submitted to the AAPFCO Slow Release Task Force in February 2001. Based on TF input and the author's analysis, it was determined that another set of samples should be sent to participants. However, in order to incorporate the modifications to the procedure, additional developmental time was needed to evaluate the effects of the changes (if any) to the method. This work is underway, and final evaluation should be complete by the end of the year. It is anticipated a new study can begin in February 2002, with presentation at next fall's AOAC meeting. The Study Director recommends continued study.

(5) *Trace Elements in Fertilizers*: Study Director David W. Averitt, IMC Global, PO Box 2000, 3095 Country Rd 640 W, Mulberry, FL 33860-1100, Tel: +1-863-428-2675, Fax: +1-863-428-1563, E-mail: waveritt@imcglobal.com. The Study Director has conducted a survey study of present methodology for nonnutritive trace elements, with data presented at this meeting. Work continues in an effort to develop a method for these elements. The Study Director recommends continued study.

(6) *Determination of Urea in Fertilizers by LC, I-29*: Study Director Michael Hojjatie, Tessengerlo Kerley, Inc., 2480 W. Twin Buttes, Sahuarita, AZ 85629, Tel: +1-520-791-2940, Fax: +1-520-625-8091, E-mail: mhoggiatie@tkinet.com. The Study Director is conducting a collaborative study. He recommends continued study.

(7) **982.01 Boron in Fertilizers**: We are in the process of appointing Wesley Hsu as Study Director for the purpose of making an editorial change to the method. Continue study.

Nutrients in Soils, Charles Focht

(1) *Available Phosphorus in Soils, Bray P1 Method*: Study Director Bryan Hopkins, Servi-Tech Laboratories, Inc., 717 W. 300 St, Blackfoot, ID 83221, Tel: +1-208-785-4320, E-mail: bhopskins@micron.net, reports that he has completed the first draft of his study report. He anticipated completing the report before the meeting of the American Society of Agronomy in October 2001. Continue study.

(2) *Available Potassium in Soils, Ammonium Acetate Method*: Study Director Dr. Maurice Watson, Department of Natural Resources, Ohio State University, Wooster, OH 44691-4096, Tel: +1-330-263-3755, E-mail: Watson.8@osu.edu, reports data have been received from 26 of the 29 collaborators who participated in the study. Twelve soils in blind duplicate were used in the study. He is preparing to enter these laboratories' results in the new version of the AOAC statistics software. Continue study.

(3) *Plant Available Zinc, Manganese, Iron, and Copper in Soils, DTPA Method*: Study Director Donald Horneck, Agronomist, Oregon State University Extension Service, Hermiston Agricultural Research & Extension Center, PO

Box 105, Hermiston, OR 97838, Tel: +1-541-567-8321, Fax: +1-541-567-2240, E-mail: don.horneck@orst.edu reports data have been received from all 21 collaborators who participated in the study. Twelve soils in blind duplicate were used in the study. He is preparing to enter these laboratories' results in the new version of the AOAC statistics software. Continue study.

(4) *Available Phosphorus in Soils, Olsen Bicarbonate Method*: Study Director Brian Shreve, Servi-Tech Laboratories, Inc., 1602 Park W Dr, Hastings, NE 68901, Tel: +1-800-468-5411, Fax: +1-402-463-8132, E-mail: brians@servi-techinc.com, reports he has completed a method draft to be submitted with the study protocol, and has acquired 10 of the 12 study soils planned for use in the study. He hopes to have the protocol ready for submission to AOAC within the next few months. Continue study.

(5) *Lime Requirement Determinations in Soils*: Study Director Steve Harrold, Servi-Tech Laboratories, Inc., 1816 E. Wyatt Earp Blvd, Dodge City, KS 67801, Tel: +1-800 557-7509, Fax: +1-316-227-2047, E-mail: steveh@servi-techinc.com, reports he is reviewing several procedures, most notably the SMP buffer

procedure, in anticipation of writing a protocol for a collaborative study of this topic. Continue study.

(6) **994.16** *pH Measurement of Mineral Soils*; **994.17** *pH Measurement of Saline-Sodic Soils*; and **994.18** *pH Measurement of Organic Soils*: Study Director Yash Kalra, Canadian Forest Service, 5320-122 St, Edmonton, AB, T6H 3S5, Canada, Tel: +1-780-435-7220, Fax: +1-780-435-7359, E-mail: ykalra@nofc.forestry.ca. These 3 methods were approved for Final Action. Discontinue study.

Tobacco, Harold Burton

(1) *Nicotine in Environmental Tobacco Smoke*: Study Director Michael W. Ogden, RJ Reynolds Tobacco Co., Winston-Salem, NC. Continue study.

(2) *Moisture in Tobacco*: Study Director Cliff Bennett, U.S. Tobacco Co., Nashville, TN. Continue study.

(3) *Nicotine in Tobacco*: Study Director Richard Davis, Philip Morris USA, Richmond, VA. Continue study.

(4) *Nicotine in Tobacco Smoke*: Study Director Michael Borgerding, RJ Reynolds Tobacco Co., Winston-Salem, NC. Continue study.