Authent-Net Member State (MS) National Status Report

Country: The Netherlands

Please note that the information provided here below will be put on the Food Authenticity Research Network Hub (FARNH) which will be publically accessible. So please do not include any confidential information.

List of organisations that fund food anti- fraud/food authenticity research and the type of research they fund

Please provide a list of organisations (Government + NGO whatever the nationality) that are funding projects on food authenticity in your MS

1. *Name (Categorise into government/NGO, public/public-private)*
Address
Web site link
Type of research funded: APPLIED RESEARCH/DEVELOPMENT
Short description of the funder
Click here to privately contact the persons responsible for Food Authenticity funding.
(This would take you to a secure location [eg. LinkedIn private chat] to contact relevant funder, only once you are able to prove that you are from another funding organisation).

Government/Public

1. Ministry of Economic Affairs
https://www.rijksoverheid.nl/ministeries/ministerie-van-economische-zaken
Applied research and development

2. Ministry of Finances
https://www.rijksoverheid.nl/ministeries/ministerie-van-financien
Applied research (customs)

3. NWO, STW
http://www.nwo.nl/en
National scientific funding (Development)

4. SKAL Biocontrole
https://www.skal.nl/
National certification body for organic produce
Applied research (analyses)

5. BKD
http://www.bkd.eu/
National control body for the flower bulb sector
Development

6. COKZ
http://www.cokz.nl/Pages/default.aspx
National control body for the dairy sector
Applied research (analyses)

7. Chinese Scholarship Council
http://en.csc.edu.cn/
Finances studentships in the Netherlands
Development

Public-private

8. Topsector AgriFood
http://www.tki-agrifood.nl/
Finances public private partnerships
Applied research and development

Plan/Strategy in terms of Authenticity Research Funding

Please provide a web link to a plan/strategy on food authenticity for each specific funding organisation (see 1st box), provided there is one, or anything the funding organisations are able to provide (general plan/strategy on food). That should include policy documents, research/surveillance documents where possible.

***1.** Funding organisation name + web link to plan + Key decision making committees*

Plan/Strategy by institution numbered according to the previous list of funding bodies.

1. Ministry of Economic Affairs

- Kaderbrief; e.g. http://www.boci-office.nl/media/kaderbrieven/Kaderbrief_DLO_2011_Bijlage.pdf

- National statutory tasks programme food safety; http://www.wageningenur.nl/nl/Onderzoek-Resultaten/Projecten-EZ/Expertisegebieden/Wettelijke-onderzoekstaken.htm

- Topsector programme; http://www.tki-agrifood.nl/

Capabilities/Infrastructure of Authenticity research providers/relevant NRLs

Please provide details of national capabilities (public and private) in terms of food authenticity analysis (relevant National Reference Laboratories, certified laboratories etc.) and in terms of Food Authenticity Research.

***1.** Name (Categorise into academic/research, general proficiency, expertise in a specific technique and/or commodity)*
Address
Web site:
Contact available through: (Any web sites where contact details of key personnel are available)
Telephone:

Academic/research

1. Wageningen University and Research
Droevendaalsesteeg 2, 6708 PB Wageningen
Web site: http://www.wageningenur.nl/en/Expertise-Services/Research-Institutes/rikilt.htm
Contact available through: https://www.wewur.wur.nl/zoeken_naam/default.aspx; http://www.wageningenur.nl/en/Expertise-Services/Research-Institutes/rikilt.htm
Telephone: +31317480100

2. VU University Amsterdam
Boelelaan 1105, 1081 HV Amsterdam
Web site: http://www.rechten.vu.nl/en/
Contact available through: http://www.rechten.vu.nl/nl/organisatie/medewerkers/index.aspx
Telephone: +31205989898

Laboratories

3. Laboratory of the Dutch Food and Product Authority
Akkermaalsbos 2, 6708 WB Wageningen
Web site: https://english.nvwa.nl/
Contact available through: *https://www.nvwa.nl/*
Telephone: +31 8 82 23 33 33

4. Dutch Customs Laboratory
Kingsfordweg 1, 1843 GN Amsterdam
Web site: http://www.belastingdienst.nl/wps/wcm/connect/nl/douane/douane
Contact available through http://www.belastingdienst.nl/wps/wcm/connect/nl/douane/douane
Telephone: +31206877900

5. Meron BCL wijnlaboratorium (wine laboratory)
Markerkant 12 606, 1314 AK Almere
Web site: http://www.meron.nl
Contact available through: http://www.meron.nl
Telephone: +31365333286

6. QLIP (dairy laboratory)
Oostzeestraat 2a, 7202 CM Zutphen
Web site: http://www.qlip.nl/en/
Contact available through http://www.qlip.nl/en/
Telephone: +31887547000

7. Eurofins (general laboratory)
Among others: Leeuwarderstraatweg 129, 8441 PK Heerenveen
Web site: http://www.eurofins.nl/en.aspx
Contact available through: http://www.eurofins.nl/en.aspx
Telephone: +31 888310000

Others

8. Netherlands Society for Food Law (Nederlandse Vereniging voor Levensmiddelenrecht)

Recent key Cases/Reports/Reviews (after 2010)

Please provide a list of web links to public outputs, documents, papers, reports, databases on incidents, detection methods, ... in relation to food authenticity your MS is involved (see T1.1)

***1.** Title + web link*

1. Many brief work plans and reports of national projects among which are those focusing on food authenticity; http://www.wageningenur.nl/nl/Onderzoek-Resultaten/Projecten-EZ.htm

2. National journal with various contributions 'Justitiele Verkenningen';
http://www.bjutijdschriften.nl/tijdschrift/justitieleverkenningen/2014/2/JV_0167-5850_2014_040_002_002

3. Scientific peer-reviewed papers Wageningen UR 2010-2016:

Alewijn, M., van der Voet, H., van Ruth, S.M. (2016). New approach for the validation of multivariate classification methods for product authentication by analytical fingerprints – concept and case study on organic feed. Journal of Food Composition and Analysis. http://www.sciencedirect.com/science/article/pii/S088915751630076X.

Margraf, T., Neulyana Taborda Santos, E., Forville de Andrade, E., van Ruth, S.M., Granato, D. (2016). Effects of geographical origin, variety and farming system on the chemical markers and in vitro antioxidant capacity of Brazilian purple grape juices. Food Research International, 82, 145–155.

Acierno, V., Yener, S., Alewijn, M., Biasioli, F., van Ruth, S. (2016). Factors contributing to the variation in the volatile composition of chocolate: Botanical and geographical origins of the cocoa beans, and brand-related formulation and processing. Food Research International, 84, 86–95.

Nessen, M.A., Zwaan, D.J. van der, Grevers, S., Dalebout, H., Staats, M., Kok, E., Palmblad, M. (2016). Authentication of closely related fish and derived fish products using tandem mass

spectrometry and spectra library matching. Journal of Agricultural and Food Chemistry 64 (18), 3669-3677.

Bouzembrak, Y., Marvin, H.J.P. (2016). Prediction of food fraud type using data from Rapid Alert System for Food and Feed (RASFF) and Bayesian network modelling. Food Control, 61,180-187.

Granato, D., Mariana de Magalhaes Carrapeiro, M., Fogliano , V., van Ruth, S.M. (2016). Effects of geographical origin, varietal and farming system on the chemical composition and functional properties of purple grape juices: A review. Trends in Food Science and Technology, 52, 31-48.

Nenadis, N., Heenan, S., Tsimidou, MZ., van Ruth, S.M. (2016). Applicability of PTR-MS in the quality control of saffron. Food Chemistry, 196, 961-967.

Faria-Machado, A.F., Tres, A., van Ruth, S.M., Antoniassi, R,. Junqueira, N.T.V., Lopes, P.S.N., Bizzo, H.R., (2015). Discrimination of pulp oil and kernel oil from Pequi (Caryocar brasiliense) by fatty acid methyl esters fingerprinting, using GC-FID and multivariate analysis. Journal of Agricultural and Food Chemistry, 2015, 63 (45), 10064–10069.

Rogers, K.M., van Ruth, S.M., Alewijn, M., Somerton, K., Philips, A., Rogers, P. (2015). Verification of egg farming systems from the Netherlands and New Zealand using stable isotopes. Journal of Agricultural and Food Chemistry, 63 (38), 8372-8380 (http://pubs.acs.org/doi/pdf/10.1021/acs.jafc.5b01975).

Reinholds, I., Bartkevics, V., Silvis, I.C.J., van Ruth, S.M., Esslinger, S. (2015). Analytical techniques combined with chemometrics for authentication and determination of contaminants in condiments: a review. Journal of Food Composition and Analysis, 44, 56-72.

Muilwijk, M., Heenan, S., Koot, A., van Ruth, S.M. (2015). Impact of production location, production system, and variety on the volatile organic compounds fingerprints and sensory characteristics of tomatoes. Journal of Chemistry, http://dx.doi.org/10.1155/2015/981549.

Oliveira, G.B., Alewijn, M., Boerrigter-Eenling, R., van Ruth, S.M. (2015). Compositional signatures of conventional, free range and organic pork meat using fingerprint techniques. Foods, 4 (3), 359-375.

Vermeulen, Ph., Nietner, T., Haughey, S., Yang, Z., Tena, N., Chmelarova, H., van Ruth, S., Tomaniova, M., Boix, A., Han, L., Elliott, C., Baeten, V., Fauhl-Hassek, C. (2015). Origin authentication of distillers' dried grains and solubles (DDGS)—application and comparison of different analytical strategiesAnalytical and Bioanalytical Chemistry, 401 (21), 6447-6461.

Capuano, E., Grevink, R., Boerrigter-Eenling, van Ruth, S.M. (2015). Fatty acid and triglycerides profiling of retail organic, conventional and "weide"milk: Implications for health and authenticity. International Dairy Journal, 42, 58-63.

Granato, D., Koot, A., van Ruth, S.M. (2015). Geographical provenancing of purple grape juices from different farming systems by proton transfer reaction mass spectrometry using supervised statistical techniques. Journal of the Science of Food and Agriculture Food Chemistry, 95 (13), 2668-2677.

Granato, D., Margraf, T., Brotzakis, I., Capuano, E., van Ruth, S.M. (2015). Characterization of Conventional, Biodynamic, and Organic Purple Grape Juices by Chemical Markers, Antioxidant Capacity, and Instrumental Taste. Journal of Food Science, 80 (3), C55-C65.

Granato, D., Karnopp, A. R., van Ruth, S.M. (2015). Characterization and comparison of phenolic composition, antioxidant capacity and instrumental taste profile of juices from different botanical origins. Journal of the Science of Food and Agriculture, 95 (10), 1997-2006.

Granato, D., Koot, A., Schnitzler, E., van Ruth, S. M. (2015). Authentication of geographical origin and crop system of grape juices by phenolic compounds and antioxidant activity using chemometrics. Journal of Food Science, 80 (3), C584-C593.

van Wetten, I.A., van Herwaarden, A.W., Splinter, R., Boerrigter-Eenling, R., van Ruth, S.M. (2015). Detection of Sunflower Oil in Extra Virgin Olive Oil by Fast Differential Scanning Calorimetry. Thermochimica Acta, 603, 237-243.

van Ruth, S.M. & de Visser, R. (2015). Provenancing flower bulbs by analytical fingerprinting: Convallaria majalis. Agriculture, 5, 17-29.

Capuano, C., Boerrigter-Eenling, R., Koot, A., van Ruth, S. (2015). Targeted and untargeted detection of skim milk powder adulteration by Near Infrared Spectroscopy. Food Analytical Methods, 8, 2125-2134. DOI 10.1007/s12161-015-0100-3.

Kuś, P., van Ruth, S.M. (2015). Discrimination of Polish unifloral honeys using overall PTR-MS and HPLC fingerprints combined with chemometrics. LWT - Food Science and Technology 62, 69-75.

Granato, D., Grevink, R., Zielinski, A.A.F., Nunes, D.S., van Ruth, S.M. (2014). Analytical strategy coupled with response surface methodology to maximize the extraction of antioxidants from ternary mixtures of green, yellow, and red teas (Camellia sinensis var. sinensis). Journal of Agricultural and Food Chemistry, 62, 10283-10296.

Capuano, E., van der Veer, G., Boerrigter-Eenling, R., Elgersma, A., Rademaker, J., Sterian, A., van Ruth, S.M. (2014). Verification of fresh grass feeding, pasture grazing and organic farming by cows farm milk fatty acid profile. Food Chemistry, 164, 234-241.

Capuano, E., Boerrigter-Eenling, R., Eigersma, A., van Ruth, S. (2014). Effect of fresh grass feeding, pasture grazing and organic/biodynamic farming on bovine milk triglyceride profile and implications for farm milk authentication. European Food Research and Technology, 238, 573-580.

Kahl, J., Bodroza-Solarov, M., Busscher, N., Hajslova, J., Kneifel, W., Kokornaczyk, M.O., van Ruth, S., Schulzova, V., & Stolz, P. (2014). Status-quo and future research challenges on organic food quality determination with focus on laboratory methods. Journal of the Science of Food and Agriculture, 94, 2595-2599.

van Ruth, S.M., Brouwer, E., Koot, A., Wijtten, M. (2014). Seafood and water management. Foods, 3 (4), 622-631.

Zielinski, A.A.F, Haminiuk, C.W.I, Nunes, C.A., Schnitzler, E., van Ruth, S.M., Granato, D., (2014). Chemical composition, sensory properties, provenance and bioactivity of fruit juices as assessed by chemometrics: a critical review and guideline. Comprehensive Reviews in Food Science and Food Safety, 13, 300-316.

Tres, A., Heenan, S.P., van Ruth, S.M. (2014). Authentication of dried distilled grain with solubles (DDGS) by fatty acid and volatile profiling. LWT Food Science and Technology, 59, 215-221.

Capuano, E., Rademaker, J., van den Bijgaart, H., van Ruth, S. (2014). Verification of fresh grass feeding, pasture grazing and organic farming by FTIR spectroscopy analysis of bovine milk. Food Research International, 60, 59-65.

Capuano, E., Elgersma, A., Tres, A., van Ruth, S.M. (2014). Phytanic and pristanic acid content in Dutch farm milk and implications for the verification of the farming management system. International Dairy Journal, 35 (1) 21-24.

van Ruth, S.M., Huisman, W. (2014). Kwetsbaarheid voor voedselfraude in de vleessector. Justitiële Verkenningen, 40 (2), 28-53.

Granato, D., Cozzolino, D., van Ruth, S.M. (2014). Special issue: Authenticity, typicality, traceability and intrinsic quality of food products. Food Research International, 60, 1.

Capuano, E., van der Veer, G., Verheijen, P.J.J., Heenan, S.P., van de Laak, L.F.J.,. Koopmans, H.B.M. & van Ruth, S.M. (2013). Comparison of a sodium-based and a chloride-based approach for the determination of sodium chloride content of processed foods in the Netherlands. Journal of Food Composition and Analysis, 31 (1), 129-136.

Ruiz Samblas, C., Arrebola-Pascual, C., Tres, A., van Ruth, S.M. & Cuadros-Rodriguez, L. (2013). Authentication of geographical origin of palm oil by chromatographic fingerprinting of triacylglycerols and partial least square discriminant analysis. Talanta, 116, 788-793.

Tres, A., Ruiz-Samblás, C., van der Veer, G. & van Ruth, S.M. (2013). Geographical provenancing of palm oil by fatty acid and volatile compound fingerprinting techniques. Food Chemistry, 137, 142-150.

Özdestan, Ö, van Ruth, S.M., Alewijn, M., Koot, A., Romano, A., Cappellin, L. & Biasioli, F. (2013). Differentiation of specialty coffees by proton transfer reaction-mass spectrometry. Food Research International, 53, 433-439.

Dimitri, G., van Ruth, S.M., Sacchettia, G., Piva, A., Alewijn, M. & Arfelli, G. (2013). PTR-MS monitoring of volatiles fingerprint evolution during grape must cooking. LWT Food Science and Technology, 51, 356-360.

Capuano, E., Boerrigter-Eenling, R., van der Veer, G., & van Ruth, S.M. (2013). Analytical authentication of organic produce: an overview of markers. Journal of the Science of Food and Agriculture, 93, 12-28.

Capuano, E., ., Lommen, A., Heenan, S., de la Dura, A., Rozijn, M& van Ruth, S.M. (2013). Wild salmon authentication can be predicted by 1H NMR spectroscopy. Lipid Technology, 24, 251-253.

Capuano, E., Heenan, S.P., de la Dura, A. & van Ruth, S.M. (2013). Authentication of wild processed salmon by means of fatty acids and volatile profile. Foods & Food Ingredients Journal of Japan, 218 (1), 61-73.

van Ruth, S.M., Koot, A., Brouwer, S.E., Boivin, N., Carcea, M., Zerva, C.N., Haugen, J.-E., Hoehl, A., Koroglu, D., Mafra, I. & Rom, S. (2013). Eggspectation: organic egg authentication method challenged with produce from ten different countries. Quality Assurance and Safety of crops and foods, 5 (1), 7-14.

Voorhuijzen, M.M. ; van Dijk, J.P.; Prins, T.W. ; van Hoef, A.M.A.; Seyfarth, R. ; Kok, E.J. (2012). Development of a multiplex DNA-based traceability tool for crop plant materials. Analytical and Bioanalytical Chemistry, 402 (2), 693 – 701.

van Dijk, J.P., Cankar, K., Hendriksen, P.J.M., Beenen, H.G., Zhu, M., Scheffer, S.J., Shepherd, L.V.T., Stewards, D., Davies, H.V., Leifert, C., Wilkockson, S.J., Gruden, K., Kok, E.J. (2012). The identification and interpretation of differences in the transcriptomes of organically and conventionally grown potato tubers. Journal of Agricultural and Food Chemistry, 60, 2090-2101.

van der Spiegel, M., van der Fels-Klerx, H.J., Sterrenburg, P., van Ruth, S.M., Scholtens-Toma, I.M.J., Kok, E.J. (2012). Halal assurance in food supply chains: verification of halal certificates using audits and laboratory analysis. Trends in Food Science and Technology, 27, 109-119.

Tres, A., van der Veer, G., Perez-Marin, M.D., van Ruth, S.M. & Garrido-Vado, A. (2012). Authentication of organic feed by Near Infrared Spectroscopy combined with chemometrics, a feasibility study. Journal of Agricultural and Food Chemistry, 60 (33), 8129-8133

Smiddy, M.A., Huppertz, T. & van Ruth, S.M. (2012). Triglyceride and melting profiles of milk fat from different species. International Dairy Journal, 24, 64-69.

Ruiz-Samblás, C., Tres, A., Koot, A., van Ruth, S.M., González-Casado, A., Cuadros-Rodríguez, L. (2012). Proton transfer reaction-mass spectrometry volatile organic compound fingerprinting for monovarietal extra virgin olive oil identification. Food Chemistry, 134, 589-596.

Edelman, G., Manti, V., van Ruth, S.M., van Leeuwen, T., & Aalders, M. (2012). Identification and age estimation of blood stains on colored backgrounds by near infrared spectroscopy. Forensic Science International, 220, 239-244.

Tres, A. & van Ruth, S.M. (2011). Verification of organic feed identity by fatty acid fingerprinting. Journal of Agricultural and Food Chemistry, 59, 8816-8821.

Tres, A., O'Neill, R. & van Ruth, S.M. (2011). Fingerprinting of fatty acid composition for the verification of the identity of organic eggs. Lipid Technology, 23, 40-42.

Raamsdonk, L. van, Pinotti, L., Veys, P., Bremer, M., Hekman, W., Kemmers, A., Campagnoli, A., Paltanin, C., Belinchon Crespo, C., Vliege, J., Pinckaers, V., Sten Jorgensen, J. (2011). New developments in classical microscopy: what can be expected for the official control? Biotechnol. Agron. Soc. Environ., 15 (S1), 15-24.

Galle, S.A., Koot, A., Soukoulis, C., Cappellin, L., Biasioli, F., Alewijn, M. & van Ruth, S.M. (2011). Typicality and geographical origin markers of protected origin cheese from the Netherlands revealed by PTR-MS. Journal of Agricultural and Food Chemistry, 59, 2554-2563.

van Ruth, S.M., Alewijn, M., Rogers, K., Newton-Smith, E., Tena, N., Bollen, M & Koot, A. (2011). Authentication of organic and conventional eggs by carotenoid profiling. Food Chemistry, 126, 1299-1305.

van Ruth, S.M., Rozijn, M., Koot, A., Perez Garcia, R., van der Kamp, H. & Codony, R. (2010). Authentication of feeding fats: classification of animal fats, fish oils and recycled cooking oils. Animal Feed Science and Technology, 155, 65-73.

van Ruth, S.M., Villegas, B., Rozijn, M., Akkermans, W. & van der Kamp, H. (2010). Prediction of the identity of fats and oils by their fatty acid, triacylglycerol and volatile compositions using PLS-DA. Food Chemistry, 118, 948-955.

4. Scientific book chapters Wageningen UR 2010-2016

Shafiee,S., Polder, G., Minaei, S., Moghadam-Charkari, N., van Ruth, S.M., Kus, P.M. (2016). Detection of honey adulteration using hyperspectral imaging. Proceedings of the 5th IFAC Conference on Sensing, Control, and Automation in Agriculture (AgriControl 2016), August 14–17, 2016; Seattle, WA, USA.

Pustjens, A.M., Muilwijk, M., Weesepoel, Y., van Ruth, S.M. (2015). Chapter 13: Advances in authenticity testing of geographical origin of food products. In: Advances in Food Authenticity Testing , Gerard Downey (Ed.), Woodhead Publishing, pp. 339-367.

Pustjens, A.M., Weesepoel, Y., van Ruth, S.M. (2015). Chapter 5: Food fraud and authenticity: emerging issues and future trends. In: Innovation and Future Trends in Food Manufacturing and Supply Chain Technologies , Craig Leadley (Ed.), Woodhead Publishing, pp. 3-20.

Brizola, V.R., Sousa Santos, J., Galvão Maciel, L., Pikkemaat, M.G., Driessen-van Lankveld, M., van Ruth, S.M., Granato, D. (2015). Composicão qyîmica e atividade antimicrobiana de misturas de chá vermelho, amarelo e verde (Camellia sinensis var. sinensis): um estudo quimiométrico. Conference proceedings XVI Semana de Engenharia de Alimentos Universidade Estadual de Ponta Grossa, 19-23 October 2015, Ponta Grossa, PR, Brazil, pp. 49-52.

Capuano E., Elgersma A., Tres A., van Ruth S.M. (2014). Is phytanic acid a suitable marker for authentification of milk and dairy products from grass-fed cows or organic farming systems? In: The Future of European Grasslands, Grassland Science in Europe, 19, 674-676.

Van Wetten, I.A., van Herwaarden, A.W., Splinter, R., van Ruth, S.M. (2014). Oil analysis by fast DSC. Procedia Engineering, Eurosensors 2014, the 27th European Conference on Solid-State Transducers, 87, 280-283.

van der Veer, G., van Ruth, S.M., Hageman, J. (2012). Chapter 25. An integral approach to validation of analytical fingerprinting methods in combination with chemometric modelling for food quality assurance. In: Mathematical and Statistical Methods in Food Science and Technology, 449-470; E-book Chapter 23, http://bookshout.com/books/315932/read.

Kok, E., van der Spiegel, M., Prins, T.W., Manti, V., Groot, M.J,, Bremer, M.G.E.G., van Raamsdonk, L.W.D., van der Fels, H.J. & van Ruth, S.M. (2012). Traceablity in the food supply chain. In: Chemical Analysis of Food: Techniques and Applications, ed. Y. Pico, Elsevier, Inc., Amsterdam, pp. 465-498.

Tres, A., van der Veer, G., van Ruth, S.M. (2013). Chapter 21 Vegetable Oils, In Food Protected Designation of Origin: Methodologies and Applications, M. de la Guardia & A. Gonzalez Illueca. Elsevier Science, Oxford, pp. 543-572.

Capuano, E. & van Ruth, S.M. (2013). QA: fraud control of foods and other biomaterials by product fingerprinting. Latest Research in Quality Control 2. InTech Publishers, http://dx.doi.org/10.5772/51109.

Heenan, S. & van Ruth, S.M. (2013). Emerging flavour analysis methods in food authentication. In: Instrumental Assessment of Food Sensory Quality – A Practical Guide, Ed. D. Kilcast, Woodhead Publishing, 284-312.

Tres, A., Ruiz-Samblas, C., Koot, A. & van Ruth, S.M. (2013). Sustainable palm oil fingerprinting: uses in authentication. Proceedings of the 6th CIGR International Symposium 'Towards a sustainable food chain – Food process, bioprocessing and food quality management', pp. 1-4.

Kok, E., van der Spiegel, M., Prins, T., Manti, V., Groot, M., Bremer, M., van Raamsdonk, L., van der Fels, I. & van Ruth, S. (2012). Traceability. In: Chemical Analysis of Food: Techniques and Applications, ed. Y. Pico, Elsevier, Inc., Amsterdam, pp. 465-498.

van Ruth, S., Espinosa Guerri, J. & Alewijn, M. (2011). Orange juice authentication: typicality, organic production and geographical origin. In: Advances and Challenges in Flavor chemistry & Biology, eds. T. Hofmann, W. Meyerhof, Peter Schieberle. Deutsche Forschungsanstalt für Lebensmittelchemie, Freising (ISBN 3-938896-38-9), pp. 417-420.

Tres, A., Alewijn, M., Kok, E. & van Ruth, S.M (2011). Palm oil authentication: classical methodology and state-of-the-art techniques. In: Oil palm: cultivation, production and dietary components, ed. S.A. Penna, Nova Science Publishers, Inc. New York, USA (ISBN: 978-1-61122-201-2) pp. 1-44.

Ruiz-Samblás, C, Tres, A., Koot , A., van Ruth, S.M. Cuadros-Rodríguez, L. & González-Casado, A. (2011). Proton Transfer Reaction-Mass Spectrometry analysis for monovarietal extra virgin olive oils. Proceedings of Expoliva 2011, Fundación para la Promocion y el Desarrollo del Olivar y del Aceite de Oliva Eds. (ISBN 978-84-938900-0-1).

Galle, S., Koot, A., Soukoulis, C., Cappellin, L., Biasioli, F., Alewijn, M. & van Ruth, S.M. (2011). Boeren-Leidse specialty cumin cheese compared to a range of other cumin cheeses using PTR-MS. Proceedings of the 5th PTR-MS conference, eds. A. Hansel and T. Märk. University of Innsbruck, Innsbruck, pp. 254-257.

van Ruth, S.M., Bremer, M. & Frankhuizen, R. (2010). Adulteration of dairy foods: fats and proteins. In: Safety Analysis of Foods of Animal Origin, eds. L.M.L. Nollet and F. Toldra. CRC Press, New York, pp 851-864.

van Ruth, S.M. (2010). Techniques for sampling and identification of volatile compounds contributing to sensory perception. In: Sensory Analysis of Foods of Animal Origin, eds. L.M.L. Nollet and F. Toldra. CRC Press, New York, pp. 39-48.

van Ruth, S.M. & Roozen, J.P. (2010). Delivery of flavours from food matrices. In: Food Flavour Technology, eds. A.J. Taylor and R.S.T. Linforth, 2nd edition. CRC Press, Boca Raton, pp. 190-206.

5. Other related publications Wageningen UR 2010-2016

van Ruth, S.M. (2016). Fraud and developments in rapid detection. New Food, 19 (1), 45-49.

van Ruth, S.M. (2016). Evalueren van kwetsbaarheid voor voedselfraude. Toepassing van de SSAFE tool in de olijfolieketen. Voedingsmiddelentechnologie.

van Wagenberg, C.P.A., Benninga, J. van Ruth, S.M. (2015). Quickscan voedselfraude in Nederland. LEI rapport VR14-126, Wageningen.

Weesepoel, Y. & van Ruth, S.M. (2015). Inventarisatie van voedselfraude: mondiaal kwetsbare productgroepen en ontwikkeling van analytische methoden in Europees onderzoek. RIKILT rapport 2015-014, Wageningen.

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Ongoing Projects (after 2010) including national-international/public-private funded projects)

Please provide a list of ongoing projects on food authenticity your MS is involved in (see T1.1)

1. Name, funding, start/end date + Web site link

1. Traceability cocoa and wood
Ministry of Economic Affairs (BO)
Start date: 01-06-2016
End date: 31-12-2016
Link: NA

2. Quickscan food fraud in the Netherlands
Ministry of Economic Affairs (BO)
Start date: 2014
End date: 2015
Link: http://www.wageningenur.nl/en/Publication-details.htm?publicationId=publication-way-343930373830

3. FoodFraudChecklist
Topsector Agrifood programme
Start date: 2016
End date: 2018
Link: http://www.wageningenur.nl/nl/project/AF-15214-FoodFraudChecklist-Ontwikkeling-assessment-voor-de-food-service.htm

4. Sustainable palm oil
Topsector Agrifood programme
Start date: 2013
End date: 2014
Link: http://www.tki-agrifood.nl/projecten/projecten-i/12101

5. Farmhouse cheese authentication
COKZ
Start date 01-01-2016
End date 31-12-2016
Link: NA

6. Olive oil: understanding intrinsic and extrinsic characteristics and developing rapid and novel analytical techniques to identify adulteration
Chinese Scholarship Council
Start date 01-09-2015
End date 31-08-2019
Link: http://en.csc.edu.cn/

7. Organic milk: understanding intrinsic characteristics and their origin and develop novel analytical techniques
Chinese Scholarship Council
Start date 01-09-2014
End date 31-08-2018
Link: http://en.csc.edu.cn/

8. Milk authenticity and fraud mitigation
Sino Dutch Dairy Development Centre
Start date 01-09-2015
End date 31-08-2019
Link: http://en.csc.edu.cn/

9. Reflectance of botanical , production and geographical origin on the unique compositional traits of purple grape juices
Capes Nuffic programme
Start date 01-01-2015
End date 31-12-2016
Link: http://en.csc.edu.cn/

Key information to be registered/extracted on/from the Authent-Net Documents database (FARNHub)

Legal framework for food authenticity (in application at a national level)

Please provide a list of standards/regulations on food authenticity applied in your MS (see T1.2)

1. *Title + web link + sources of expert advice on authenticity*

National legislation in the Netherlands on food and animals can be found through the NVWA, www.nvwa.nl. The NVWA distinguishes between, on the one hand, legislation regarding animals and animal products and, on the other hand, legislation on food, drinks and smoking. We have interpreted the concept 'food authenticity' broadly, because non-compliance with a broad range of regulations could contribute to food inauthenticity. Food inauthenticity can be caused by food health claims being false and requirements or requirements of certain certificates not being met (e.g. concerning animal welfare, products being organic, having been produced with regard of pesticide requirements, etc). Also expectations that consumers may have of a product (e.g. that fishing takes place in accordance with EU and national regulations) may not be met in practice, as a result of which a product turns out not to be what it claims to be. Especially mislabeling or misleading labeling can thus be linked to non-compliance with a broad variety of food regulations.

Legal national framework regarding animals and animal products

General

Wet dieren op Overheid.nl (animal welfare, medication, animal feed, slaughter)
Besluit houders van dieren (animal welfare, housing conditions, identification and registration, slaughter)
Regeling houders van dieren (slaughter)
Gezondheids- en welzijnswet voor dieren (Gwwd) (animal by-products, identification and registration, transport)
Regeling handel levende dieren en levende producten (identification and registration, transport, since 1 May 2016)

Animal by-products

Besluit dierlijke producten
Regeling dierlijke bijproducten 2011.

Animal medication

Besluit diergeneesmiddelen van 2 november 2012
Regeling diergeneesmiddelen op Overheid.nl
Wijziging van de Regeling diergeneesmiddelen

Identification and registration

Regeling identificatie en registratie dieren;
Besluit identificatie en registratie van dieren;

Protected species

Visserijwet 1963 op wetten.nl
Flora- en faunawet
Reglement voor de binnenvisserij 1985
Uitvoeringsregeling visserij, art. 32a, lid 1
Natuurbeschermingswet 1998

Public and animal health

Regeling Preventie, bestrijding en monitoring van besmettelijke dierziekten en zoönosen en TSE's

Legal national framework regarding food and drinks (some fields of regulation to be exclusively covered by EU-regulation, such as the microbiological criteria concerning listeria and salmonella, among others, and the use of stevia as a sweetener

Contact materials food

- Warenwetbesluit verpakkingen- en gebruiksartikelen
- Regeling Verpakkingen- en gebruiksartikelen

Frozen foods

- Warenwetregeling Diepgevroren levensmiddelen

Herbal preparations

- Warenwetbesluit Kruidenpreparaten

Hygiene

Warenwetbesluit Bereiding en behandeling van levensmiddelen
Warenwetbesluit Hygiëne van levensmiddelen

Labeling

Verordening (EG) nr. 1169/2011 (appears to have direct effect)
Warenwetbesluit informatie levensmiddelen concerns additional rules/regulates criminalization
Warenwetregeling allergenen niet-voorverpakte levensmiddelen

Pesticides

Maximale Residu Limiet

'Special' foods

Warenwetbesluit Producten voor bijzondere voeding (baby feed)
Warenwetregeling Babyvoeding

Supplements

Warenwetbesluit voedingssupplementen;
Warenwetregeling voedingssupplementen;
Warenwetregeling vrijstelling vitaminepreparaten

Certificates and labels

Each member state of the European Union has a national accreditation body. In the Netherlands it is the Raad voor Accreditatie (Dutch Accreditation Council: https://www.rva.nl/en) (http://wetten.overheid.nl/BWBR0026591/2014-01-25). Its principal task concerns accrediting and renewing the accreditations of conformity-assessment bodies: laboratories, inspection bodies, certification bodies and verification bodies. This is to ensure that trust in the quality of products and services is genuinely justified.
Various beleidsregels (policy rules) regarding the accreditation process can be found on the website of the RVA:
https://www.rva.nl/documenten/regels-en-besluiten

Key information to be registered/extracted on/from the Authent-Net Documents database (FARNHub)

Existing indicators used: intelligence sources

Please provide a list of intelligence tools used to detect/counter food fraud issues in your member state (e.g. Horizon Scanning, Interpol, Europol, National Crime agencies)

1. Title + web link

1. Agency: NVWA Intelligence and Investigation Service
https://www.nvwa.nl/organisatie/opbouw-nvwa/nvwa-inlichtingen-en-opsporingsdienst
Key contact:

2. Agency: Openbaar ministerie
https://www.om.nl/organisatie/functioneel-parket-0/

3. Agency: Europol
https://www.europol.europa.eu
Key contact: Chris Vansteenkiste

4. SSAFE food fraud vulnerability assessment tool
www.ssafe.org; www.pwc.nl
Key contact: Saskia van Ruth (Wageningen University and Research, science behind the tool); Onno Nillesen (PwC; app use)

Commodities/products of interest and type of research of interest

1. Commodities/products of interest

Please provide a list of the commodities/food products in priority order most important for each MS in terms of value to that country.

1) Generally those issues/foods with associated safety risks

2) Fish, meat, dairy, oils & fats, nuts

2. Type of research of interest

Please provide a list of type of research (e.g. criminology, critical points, historical points, analytical methods, consumer behaviour, economic aspects) in priority order most important for each MS in terms of value to that country).

1) Vulnerabilities in the food chain (critical points)

2) Offender characteristics and motives (criminology)

3) Ranking fraud vulnerable products for humans/animals

4) Prevalence food fraud (including economic aspects)

5) Development of methods that can detect anomalies widely instead of being specific for one kind of adulteration, for both use in and beyond the laboratory