

Congratulations to the Best of 2016!


In 2016 the *Journal of Agricultural and Food Chemistry* (JAFC) published almost 1100 papers in areas as diverse as pesticide environmental fate, biofuels, and proteomics of taste perception. Across the scope of JAFC, the incredibly international cohort of authors consistently submits and publishes novel and impactful studies that do much to advance the fields of agricultural and food chemistry. JAFC is constantly looking for ways to recognize the excellent research it publishes, so in 2013 the journal, along with the American Chemical Society (ACS) technical divisions of Agrochemicals (AGRO) and Agricultural and Food Chemistry (AGFD), established the JAFC Research Article of the Year Award Lectureship. Nominations of notable papers from the previous year are solicited from the JAFC Editorial Advisory Board and the Editors, and then selection committees consisting of journal Editors and division representatives choose the most notable papers. We are happy to announce this year's winners:

The winner of the 2016 JAFC Research Article of the Year Award Lectureship (AGRO division) is “[Quantitation of Aristolochic Acids in Corn, Wheat Grain, and Soil Samples Collected in Serbia: Identifying a Novel Exposure Pathway in the Etiology of Balkan Endemic Nephropathy](#)”, by Wan Chan, Nikola M. Pavlović et al. This paper deals with a long-standing human health problem, namely, Balkan endemic nephropathy (BEN), a chronic kidney disease affecting populations in the Balkans. For a long time the toxicity was attributed to fungal toxins (especially ochratoxin), but it has recently been established by aristolochic acids (AAs) present in the common weed, *Aristolochia clematitis*. It was assumed that poisoning occurred by commingling of the fruits with commercial grains. However, the authors of this work unequivocally established that AAs are retained in the soil when the weed decays, are then taken up by crops through the roots, and are subsequently deposited in grains. The authors used HPLC-fluorescence detection to quantitate distribution of AAs in the soil and grains at the nanograms per gram level. The work is very comprehensive, with an excellent experimental design. In addition, it involves international cooperation between research groups in Serbia and Hong Kong. This is significant because the earliest report of nephrotoxicity in humans was in Hong Kong with young women taking herbal remedies containing *Aristolochia* species. The work therefore bridges herbal toxicity by deliberate ingestion with inadvertent natural contamination of foodstuffs. The developed methodology is capable of detecting low levels of the toxins and can be used to screen grain samples for contamination by AAs, thus preventing human exposure.

The winner of the 2016 JAFC Research Article of the Year Award Lectureship (AGFD division) is “[Toxicologically Relevant Aldehydes Produced during the Frying Process Are Trapped by Food Phenolics](#)”, by Rosario Zamora, Isabel Aguilar, Michael Granvogl, and Francisco J. Hidalgo. This study demonstrates for the first time both the formation of lipid-derived carbonyl-phenol adducts in food products under standard cooking conditions and the presence of this kind of

compound in processed foods. Four carbonyl-phenol adducts generated by the reaction of the major dietary flavonoid quercetin and the aldehydes acrolein, crotonaldehyde, or (*E*)-2-pentenal, which are formed upon deep-frying processes, were prepared and characterized by ¹H and ¹³C NMR and HPLC-high resolution MS. The lipid-derived carbonyl trapping ability of phenolic compounds under common food-processing conditions was studied by determining the presence of carbonyl-phenol adducts in onions (high in quercetin) fried in the laboratory (in fresh rapeseed oil spiked with the three aldehydes) and commercial crispy fried onions. This work also pointed to a possible protective role of food polyphenols, which might contribute to the removal of toxicologically relevant aldehydes produced during deep-frying as a consequence of lipid oxidation, assuming that the formed products are stable during food consumption in the human organism.

Congratulations to this year's awardees! The Award Lectures will be presented by the authors in Award symposia as part of the AGRO and AGFD programs at the 254th National Meeting of the American Chemical Society in Washington, D.C., August 20–24, 2017. We hope the JAFC community can join us there, and we look forward to continuing to publish your innovative agricultural and food chemistry research!

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Notes

Views expressed in this editorial are those of the authors and not necessarily the views of the ACS.

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