

Avocado meal may be a novel fiber source for dogs

March 28 2022, by Lauren Quinn



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When avocados were first recognized as a nutrient-dense superfood for humans, consumption skyrocketed. Today, consumers buy and eat the fresh fruit (hello, avocado toast), purchase pre-packaged guacamole,

cook with avocado oil, and more.

The trend means there are now more avocado-derived products in the supply chain than ever. In a study published in the *Journal of Animal Science*, University of Illinois researchers looked at the possibility of using avocado meal—the ground, dried, and defatted pulp, seed, and skin left over after avocado oil processing—as a fiber source in dry dog food.

Wait, aren't avocados toxic to dogs?

A simple Google search turns up scads of sources warning against the potentially harmful effects of avocados for pets, placing blame on a compound called persin in the fruit. But Maria Cattai de Godoy, who led the project, says the claims about avocado toxicity are overblown. As for avocado meal, Godoy couldn't find detectable levels of persin in the product. And best of all? Avocado meal is also palatable and a functional fiber source in canine nutrition.

"Being from Brazil, avocados grow in our backyards. They fall on the ground, and if dogs get hold of them, they eat them. Just like they do with mangoes, bananas, or any other fruits that grow natively in our country. I'd never heard of a dog dying from eating an avocado, so I was really curious why they were considered toxic here," says Cattai de Godoy, associate professor in the Department of Animal Sciences at U of I.

"When you look at the literature for avocado toxicity, all that exists are a few case studies. Dogs reported to have a fondness for avocado showed some signs of toxicity, but the case reports couldn't prove avocados caused those symptoms. There are a lot of uncontrolled factors in these cases."

When she looked into it, Cattai de Godoy couldn't find direct evidence showing cause and effect of persin toxicity in dogs. Few studies detailed where persin was most concentrated in the avocado plants and fruits, and not a single study explored whether it was found in avocado meal.

It was time for some answers.

Cattai de Godoy teamed up with David Sarlah, associate professor in the Department of Chemistry at U of I. They were able to look more closely at the chemical structure of persin, and realized why they couldn't find it in the dried, processed meal.

"Persin is structurally similar to a polyunsaturated fatty acid, meaning there are a lot of double bonds," Cattai de Godoy says. "They're not very stable; heat and light can make them break down. Processing is very likely breaking down persin, which is probably why we cannot see it in the meal.

"In fact, the concentration was so small in the avocado meal that it was out of our standard curve linear range, meaning it was below detection level. We observed, however, detectable amounts of persin in the raw fruit, including the peel, pulp, and pit."

After they determined persin was undetectable in avocado meal, the researchers fed it to beagles as one of three fiber sources in their diets: avocado meal, or industry standards beet pulp or cellulose. They watched the animals closely for any signs of [toxicity](#) or distress, but found none during the two-week feeding trials.

Cellulose is an insoluble fiber used to create fecal bulk. Beet pulp, which Cattai de Godoy refers to as the gold-standard fiber in pet foods, is a mix of soluble and insoluble fiber that helps feed good gut bacteria while promoting fecal bulk.

As a fiber source, avocado meal fell right in between [cellulose](#) and beet pulp, depending on the metrics the researchers studied. For example, energy intake was similar for all three diets, and avocado meal tied with other fiber sources for digestibility of fat and organic matter. Dogs who ate the avocado meal diet had similar fiber digestibility and fecal butyrate concentration, an energy source for microbial cells in the gut, to dogs who ate the beet pulp diet.

"High fiber diets are not always palatable for pets, but that is not what we saw. The dogs consumed enough food to meet or exceed their energy requirements. The high inclusion of avocado meal [about 19%] was acceptable to them," Cattai de Godoy says.

The researchers note they only tested one source of avocado meal. Persin levels vary across avocado cultivars and processing practices haven't been standardized across the industry, so it will be important to test for persin in each source of avocado meal. But Cattai de Godoy thinks this first study shows the potential of avocado meal for dogs.

"If you have a tool nobody has looked at and it's economical and highly abundant, why not use it? From what we can tell, it seems to be a safe ingredient. We don't see a signal for persin in avocado meal, and there is not really a robust literature pointing to persin as a true toxin for [dogs](#) or cats" she says. "I certainly think there's still work to be done in order to say there are no concerns, especially if we were giving the fresh fruit. But according to our study, I think avocado meal is a safe bet and can be used effectively as a sole source of dietary fiber or in fiber blends."

More information: Amanda N Dainton et al, Nutritional and physico-chemical implications of avocado meal as a novel dietary fiber source in an extruded canine diet, *Journal of Animal Science* (2022). [DOI: 10.1093/jas/skac026](#)

Provided by University of Illinois at Urbana-Champaign

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