HAZELNUT (*Corylus avellana* 'Jefferson', 'Santiam')
Kernel Mold; *undetermined fungi*

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Miscellaneous kernel mold trials on hazelnut, 2019.

Inoculations with JWP8 (*Diaporthe rudis*) onto hazelnut selection 385.013

The fungus *Diaporthe* spp. has been associated with kernel mold in several production areas including Chile, The Caucasus Region of Asia and Oregon, however, Koch's postulates have not been completed. An isolate of JWP8 (*Diaporthe rudis*) was grown on PDA agar, spores were collected and adjusted to $1x10^6$ spores/ml, and inoculated onto branches of the hazelnut selection 385.013 at different times of the year. Inoculations occurred once in Feb, Mar, Apr, or May and one set of branches was inoculated all 4 months. Inoculated and non-inoculated branches were covered in screening in August so only nuts from these branches were collected. All nuts were collected on 14 Oct and placed on wet, sterilized orchard soil within moist chambers for 2 weeks. Non-inoculated nuts had an average of 27.8% mold while inoculated nuts had an average of 27.9% mold.

Kernel mold level in 'Santiam'

A total of 400 nuts were collected on 20 Sept from the ground in a Santiam hazelnut orchard planted in 2009. A total of 200 nuts were cracked open and evaluated for kernel defects on 24 Sept. Another set of 200 nuts was incubated for 3 weeks on wet orchard soil within moist chambers where nuts were always in contact with wet soil. Mold levels were low at harvest but increased in the moist chambers.

	Mold (% kernels)**	
	Harvest (20 Sep)	After 2 weeks on wet soil - lab
Hazelnut - Santiam	5.5	39.5

Evaluation of internal discoloration of 'Jefferson' nuts.

A hazelnut grower wanted to know if all the internal discoloration they had been finding in 'Jefferson' was considered mold. A total of 500 nuts were collected from the ground in a 'Jefferson' hazelnut orchard planted on a 10 x 20 foot spacing in 2014 at the Botany and Plant Pathology Field Laboratory, Corvallis, OR. All nuts were cracked open, cut in half and evaluated for kernel defects on 11 Oct. Internal browning was found at 12.8% with 1.2% considered brown and 11.6% considered tan colored. None of the kernels with internal browning were rancid or had off flavors. Mold was observed on 2.8% of the kernels but not related to this internal browning. Oregon Department of Ag did not consider the internal browning a defect. A dark brown layer on the inside of the kernel would have to be observed penetrating beyond the surface layer and would then be classified as decay (not mold). Since it was not considered a problem, isolations for various fungi were not performed.