Fungus-on-Fungus Fight Could Benefit Chickpeas

The fungus *Ascochyta rabiei* threatens chickpea crops the world over. During the winter, the pathogen survives on chickpea leaves and stems left behind in the field after harvest and forms sexual spores called "ascospores." The ascospores, in turn, can infect springtime chickpea plantings and sometimes wipe out entire crops. But researchers identified and assessed 28 fungi that compete with *A. rabiei* and concluded that one of them—*Aureobasidium pullulans*—held the most promise as a biocontrol for *A. rabiei*. *Au. pullulans* has several attributes that enhance its potential, including its abundant natural populations, ready growth in culture, and safety to humans and other animals. Most important, *Au. pullulans* inhibits *A. rabiei's* ability to form or release ascospores in winter field stubble, which curbs the pathogen's subsequent infection of chickpea seedlings in the spring. In small-scale field trials, inoculating stubble with *Au. pullulans* spores reduced *Ascochyta* blight by 38 percent, a level that might be improved with the use of adjuvants and other standard ingredients often used in biocontrol formulations. *Frank Dugan, USDA-ARS Plant Germplasm Introduction and Testing Research Unit, Pullman, Washington; (509) 335-1783, frank.dugan@ars.usda.gov.*

Tryptophan-enriched Diet Reduces Pig Aggression

When pigs are subjected to the aggressive behavior of other pigs, they become chronically stressed, which interferes with their ability to fight off disease and maintain typical growth levels. Now scientists have found that feeding the amino acid tryptophan to young female pigs as part of their regular diet makes them less aggressive and easier to manage. Tryptophan, which is only acquired through diet, is the precursor for serotonin, which is a cerebral neurotransmitter that helps to control emotion and aggression. In the study, a diet with 2.5 times the normal amount of tryptophan was fed for 1 week to 3-month-old grower pigs and 6-month-old finisher pigs. Another group of pigs received a normal diet. Behavioral activity and aggressiveness were measured before and after the 7 days of diet supplementation. The supplemented diet raised blood concentrations of tryptophan in 3-month-old females by 180 percent and by 85 percent in 6-month-old females and reduced aggression and overall behavioral activity among the younger female pigs. *Jeremy Marchant-Forde and Heng-Wei Cheng, USDA-ARS Livestock Behavior Research Unit, West Lafayette, Indiana; (765) 494-6358 [Marchant-Forde], (765) 494-8022 [Cheng], jeremy.marchant-forde@ars.usda.gov, heng-wei.cheng@ars.usda.gov.*

ARS Survey Helps Growers Track Two Key Cotton Pests

A comprehensive survey in Texas has resulted in identification of several new host plants for two significant cotton pests. Researchers visited more than 80 sites in Texas along roadsides and cotton fields at least twice a week for 3 years and found 13 previously unreported host plants for tarnished plant bugs and 8 for cotton fleahoppers. Tarnished plant bugs infested 4.8 million acres of U.S. cotton in 2008, making it the single most damaging insect for domestic cotton. The adults infest developing cotton buds and damage bolls. They may also transmit cotton diseases. Cotton fleahoppers, which infested 2.3 million acres in 2008, emerge from eggs in the spring and feed on weeds before moving to cotton in May and early June. In the past, spraying for boll weevils also helped control tarnished plant bugs and cotton fleahoppers, but successful boll weevil eradication efforts have reduced the need for spraying. Cotton producers can use these findings to better monitor conditions that contribute to infestations and crop losses. *Jesus Esquivel, USDA-ARS Area-wide Pest Management Research Unit, College Station, Texas; (979) 260-9519, jesus.esquivel@ars.usda.gov.*

Livestock Can Help Rangelands Recover from Fires

Results from a 14-year study suggest that rangelands that have been grazed by cattle recover from fires more effectively than rangelands that have been protected from livestock. At the start of the study, the ungrazed sites, where livestock had been excluded since 1936, had almost twice as much plant litter as the grazed sites, because much of the potential litter in the grazed areas had been removed by cattle. A controlled burn was conducted on all the sites in 1993, and vegetation cover, vegetation density, and biomass production were measured in 2005, 2006, and 2007. Researchers found that cheatgrass, an invasive annual, had infested a large portion of the ungrazed sites, which left these areas even more vulnerable to future fires. But cheatgrass did not become problematic on the sites that had been grazed, where native bunchgrass cover was almost twice as dense as bunchgrass cover on the ungrazed sites. The researchers concluded that the litter in the ungrazed sites fueled hotter fires that killed off much of the perennial vegetation, which allowed quick-growing invasive annuals to become established. *Kirk Davies, USDA-ARS Eastern Oregon Agricultural Research Center, Burns, Oregon; (541) 573-4074, kirk.davies@ars.usda.gov.*