

The deadline for phoning advertising for the July issue of the Trader's Dispatch will be June 28.

# Management of wireworms using new insect pathogenic strains

By Anamika Sharma, Shabeg S. Briar, Gadi V.P. Reddy, Western Triangle Ag Research Center and Stefan Jaronski, USDA-ARS-Northern Plains Ag Research laboratory



John Miller (left), Anamika Sharma (right) and Shabeg Briar (seen on the driver seat) while seeding the spring wheat.

USDA-ARS, Sidney. This project was funded by the Montana Wheat and Barley Committee to Dr. Gadi V.P. Reddy to develop sustainable pest management strategies for the management of wireworms.

These fungi, known as *Beauveria* and *Metarhizium*, work as contact agents — when the insect comes into contact with spores, they attach to its surface, germinate and penetrate into its body within 24 hours. The fungi then multiply within the host and subsequently kill the insect. Determined

efforts to develop the use of entomopathogenic fungi against wireworms are very recent, although an early attempt to use *Metarhizium anisopliae*, one of these entomopathogenic fungi, was in 1932.

Our recent studies (Reddy and team members) indicated that granules containing spores of *three fungal strains* can be effective against wireworms in spring wheat. All three fungi, applied as granules in furrow or as soil drenches, were more effective than when used as seed-coats for wireworm control. The fungi used in this study provided significant plant and yield protection under moderate wireworm pressure, supporting

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In recent years, wireworm damage has become a growing problem, and the demand for a useful control method is increasing. However, wireworm larvae live deep in the soil, moving to the surface to feed on young seedlings in the spring, then disappearing again, as 'hit and run' pests. Pest control is very difficult and often unsatisfactory. Protecting wheat seedling stands from wireworm feeding in Montana is a critical need to achieve maximum crop yield.

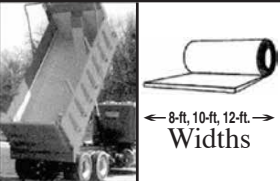
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# Students raise money for ranchers

By University of Nebraska-Lincoln IANR News

Recent wildfires across Colorado, Kansas, Oklahoma and Texas have devastated the ranching industry. The fires have destroyed millions of acres of grassland, and left thousands of cattle dead. Now, students in the Large Animal Veterinary Medical Club at the University of Nebraska-Lincoln (UNL) are lending their support to those affected by the wildfires.

The club acted quickly after learning of the wildfires, and organized a fundraiser selling "Vet Med" hats. During the course of the 11-day fundraiser the club sold 366 hats, raising over \$4,000 for wildfire victims.

"We saw a lot of news coverage about the wildfires and we thought it was important to help out," said Rachael Granville of Springfield, a student in the university's Professional Program in Veterinary Medicine (PPVM). "Someday those ranchers are going to be our clients so we care about them and want them to be successful."

The club sold hats to students, faculty and staff in Nebraska, and their PPVM partners at Iowa State University. In addition, the club extended the fundraiser to vet med schools in the states affected by the wildfires: Colorado State University, Kansas State University, Oklahoma State University and Texas A&M University. The University of Illinois and Mississippi State University also contributed to the fundraiser.

According to club president Kara Sutphen, funds raised by the club will be given to the Working Ranch Cowboys Association. The association has established a wildfire relief fund to provide financial assistance to working ranchers and cowboys suffering significant hardships due to the wildfires.

"We feel that donating the funds we raise to the Working Ranch Cowboys Association is better than us trying to buy supplies and send it to the affected areas because these people are going to need financial assistance for a long time. The association has historically done a lot of crisis relief, and they have operations set up for people to apply for the funds," Sutphen said.

The club is currently contacting several state veterinary medical associations to see if they will match the funds raised so far.

The Large Animal Club is a club for PPVM students at the university. The club organizes meetings and wet labs to expose students to a variety of topics focused on large-animal medicine. Additionally, the club awards scholarships to three PPVM students annually.

## Management of wireworms using new insect pathogenic strains

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their value in the management of this pest. Exploring and expanding on these results, we are currently using granular formulations of additional strains of the insect pathogenic fungi, *B. bassiana* GHA, *M. robertsii* DWR356, *M. robertsii* DWR2009, *M. robertsii* DWR2009, as well as DWR356 and DWR2009 on millet grain substrate (at the rate of 10lb/acre and 20lb/acre) along with Gaucho® (Imidacloprid) at the rate of 2.4 oz/45.352 kg/seed and control (water treatment). All the strains are applied in furrows with the seeds. We will also monitor wireworm population and standing plants in different plots to assess the effectiveness of the fungal pathogens. Finally, we will compare the yields resulting from these treatments.

We are conducting our trials at two sites on farms near Ledger and Valier. Both sites have moderate to high wireworm infestations. Hence, we expect to analyze the results in the light of significant pressure from wireworms and also as the part of an integrated pest management for two specific wireworm species, *Limonius californicus* and *Hypnoidus bicolor*, key species in Golden Triangle area of Montana. Success with these entomopathogenic fungi, along with other management strategies such as use of trap crops, will hopefully provide some remedy to the existing wireworm problem in this region.

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