

LEAD STORY

Pest Problems Tackled By the Vine



With the increasing public concern about insect borne diseases like West Nile virus, global warming, the spread of diseases to more temperate climates like the United States, and the disastrous negative impact of insect borne diseases to developing countries, better methods of controlling mosquitoes, ticks, flies and other insects are greatly needed. One effective method for preventing disease is the use of insect repellents that can be used on humans and animals, released into the air for area wide control around homes, businesses and farms, and permanently incorporated into clothing, window screening and bed netting. Although there are a number of effective repellents available, the public is reluctant to use these compounds because they are considered as artificial chemicals. What is greatly needed is a natural repellent, which is as effective as DEET. At least some commercial DEET repellents also can be unsafe because their formulations are flammable, and they can be accidentally ignited when applied to clothing or skin.

Dr. R. M. Roe, a William Neal Reynolds Distinguished Professor at North Carolina State University, has discovered a natural repellent from the tomato plant effective against a wide variety of pests including mosquitoes, ticks, flies and agricultural insects. Dr. Roe has obtained several patents on his invention, and the university has licensed the repellent to a North Carolina Company, HOMS. The commercial product produced by HOMS, which contains the tomato-based repellent, has been shown to be effective as DEET for mosquito control and more effective than DEET for tick control. It will be sold under the trade name, BioBlock UD. The product is formulated as a water-based emulsion, is safe and is not flammable. The repellent has been classified by EPA as a biological and will be sold as all natural and for the prevention of insect-borne diseases. EPA registration in the U.S. is scheduled for 2006. In addition to



the use of BioBlock UD as a repellent on humans, the material should have a number of other applications in livestock and animal production, protection of dogs, cats and horses, area wide control of mosquitoes and flies around decks, swimming pools and other outdoor areas, organic gardening and many other applications including the production of repellent cloths. Since the public will be more accepting of the all natural BioBlock UD than current DEET-based products, they will use repellents more when they are exposed to biting insects; and therefore, be better protected from insect- and tick-borne diseases.

Funding for this project comes from the North Carolina Agricultural Research Service. Dr. Roe's laboratory has been almost continuously funded by CSREES, with programs like Hatch and NRI since 1983. His current CSREES NRI grant is to continue working on the Trypsin modulating oostatic factor (TMOF) chemistry which led to this discovery.

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