

Video Article

July 2015 - This Month in JoVE: Treating Canine Halitosis, Minimizing Workplace Stress, and Assessing Electrical Activity and Herbicide Resistance in Plants

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Abstract

Here's a look at what's coming up in the [July 2015 issue](#) of [JoVE: The Journal of Visualized Experiments](#).

In [JoVE Medicine](#), we feature an approach for diagnosing halitosis, commonly known as bad breath, in man's best friend: the dog. The approach is much more advanced than simply smelling the dog's breath—it involves taking breath samples and using a gas chromatograph to quantify stinky compounds found in bad breath, such as hydrogen sulfide, methyl mercaptan, and dimethyl sulfide. [Di Cerbo et al.](#) use this assay in a randomized, placebo-controlled trial of dog food specially formulated to fight halitosis. The results of their study suggest that certain dietary supplements might reduce embarrassing bad breath in our beloved canine companions.

In [JoVE Behavior](#), we know all too well that working in a chronically stressful environment can have deleterious effects—so we feature a stress reduction intervention that might retrain the brain to change its usual responses to stressful situations. [Klatt et al.](#) present a structured group program that incorporates mindful meditation, yoga, and relaxing music. This intervention can be delivered onsite, at the workplace, so it's a potentially viable method of stress reduction for busy working adults.

In [JoVE Environment](#), we have two articles that explore how plants interact with certain environmental factors.

Like animals, plants can transmit electrical signals over long distances, which is an advantageous trait because it allows quick responses to external stimuli. But plants have no nerves, so [Salvador-Recatalà and Tjallingii](#) examine the plant vasculature, namely the sieve elements of the phloem, as a possible conduit of stimulus-induced electrical signals. They wire up aphids to record signals transmitted from another part of the plant that is sustaining damage, such as a leaf getting cut by scissors or eaten by a caterpillar. The resulting data may reveal how phloem sieve elements integrate information from different environmental stimuli.

Another article in [JoVE Environment](#) demonstrates methods for testing herbicide resistance in weeds. Overuse of herbicides, combined with natural genetic variability in plants, has selected for resistance in hundreds of weed species reported to date. This is a major concern for ecosystem management and for agriculture. [Panozzo et al.](#) present protocols for testing herbicide resistance, inferring the tolerance level by using multiple herbicide doses in the experiments. Besides being highly robust and reliable, these protocols can easily be adapted to a wide range of weeds. The data obtained from these experiments can inform further research and optimize the management of herbicide use.

You've just had a sneak peek of the [July 2015 issue](#) of JoVE. Visit the website to see the full-length articles, plus many more, in [JoVE: The Journal of Visualized Experiments](#).

Video Link

The video component of this article can be found at <http://www.jove.com/video/5735/>

Protocol

A New Application of the Electrical Penetration Graph (EPG) for Acquiring and Measuring Electrical Signals in Phloem Sieve Elements

Vicenta Salvador-Recatalà¹, W. Freddy Tjallingii²

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Electrical Penetration Graph (EPG) is a well-established technique for studying the feeding behavior of stylet-bearing insects. Here we show a new application of EPG as a non-invasive tool for the acquisition of intracellular electrophysiology recordings of sieve elements (SEs), the cells that form the phloem vasculature in plants.

Therapeutic Effectiveness of a Dietary Supplement for Management of Halitosis in Dogs

Alessandro Di Cerbo¹, Federica Pezzuto², Sergio Canello³, Gianandrea Guidetti³, Beniamino Palmieri^{1,4}

¹Department of Surgery and Surgical Specialties, **Azienda Ospedaliero-Universitaria Policlinico di Modena**, ²Department of Clinical Microbiology, **University of Modena and Reggio Emilia**, ³Sanypet S.p.a, ⁴AIRMO Center Milan

We describe a simple approach for diagnosis of halitosis in dogs as well as a dietary approach for its management. This protocol may be extended to the management of halitosis in humans in the near future.

Protocols for Robust Herbicide Resistance Testing in Different Weed Species

Silvia Panozzo, Laura Scarabel, Alberto Collavo, Maurizio Sattin

Institute of Agro-environmental and Forest Biology (IBAF), **National Research Council (CNR), Italy**

A robust and flexible approach to confirm herbicide resistance in weed populations is presented. This protocol allows the herbicide resistance levels to be inferred and applied to a wide range of weed species and herbicides with minor adaptations.

Mindfulness in Motion (MIM): An Onsite Mindfulness Based Intervention (MBI) for Chronically High Stress Work Environments to Increase Resiliency and Work Engagement

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The Mindfulness in Motion (MIM) protocol offers a pragmatic Mindfulness Based Intervention (MBI) on-site, for persons working in chronically high-stress work environments that significantly increases resiliency and work engagement. The protocol has proven feasible, beneficial, and is easily adaptable to other high-stress workplaces.

Disclosures

No conflicts of interest declared.