



Press Release – For Immediate Distribution

## **Clinical Trial Shows AppleActiv DAPP Increases Joint Function and Range of Motion**

### ***Research Supports Ingredient for Use in Supplements and Formulas with Applications in Joint Health***

**FRANKLIN, QUEBEC – November 12, 2014** – [AppleActiv™](#), the functional food division of Leahy Orchards, today announced that a newly-released study has shown [AppleActiv DAPP™](#) (Dried Apple Peel Powder) to be associated with improved joint function, and increased serum antioxidant protection status.

An open-label, clinical pilot study was conducted by [NIS Labs](#), and involved healthy individuals experiencing moderate loss of joint range of motion (ROM), and associated recurring pain. The goal of the study was to evaluate the effects of consumption of dried apple peel powder (DAPP) on joint function and range of motion (ROM). Additional *in vitro* and clinical testing was performed to investigate specific mechanisms of action. A full manuscript of the study has been published in [The Journal of Medicinal Food](#), and a study abstract may be found on the [PubMed](#) site.

“We are pleased with the results of this clinical pilot study, which suggest multifaceted anti-inflammatory properties of dried apple peel powder,” said Gitte Jensen, research director at NIS Labs. “The study indicated that daily consumption of AppleActiv DAPP was associated with a statistically significant improvement in serum antioxidant protective status, as well as improved ROM.”

AppleActiv DAPP is certified organic, and contains a rich polyphenol blend with high levels of antioxidants. In the study, DAPP was shown to increase antioxidant activity, including cell protection from oxidative damage *in vitro*. The consumption of AppleActiv DAPP daily for 12 weeks showed both inhibited COX-2 and lipoxygenase enzyme activity. The study also observed pain reduction, which may be associated with the improved antioxidant status, and is likely linked to the anti-inflammatory effects of the polyphenols.

“We are extremely encouraged by the results of the NIS study that validate AppleActiv DAPP as an effective ingredient for use in a variety of applications supporting joint health and comfort,” said Lorraine Leahy, nutritionist and director of the division of functional foods at Leahy Orchards. “Product formulators and brand managers are taking serious notice of this research as they evaluate DAPP for use in a variety of functional food and supplement products.”



### **About the Study**

The study was conducted at NIS Labs in Oregon. Study subjects consumed 4.25 grams of AppleActiv DAPP daily for 12 weeks, with evaluations at baseline, 2, 4, 8, and 12 weeks. ROM was evaluated at each visit using dual digital inclinometry. Pain scores were collected using visual analogue scales. Blood draws enabled testing of serum antioxidant protective capacity using the cellular antioxidant protection (CAP-e) bioassay. Additional *in vitro* testing involved testing of cyclooxygenase-2 (COX-2) and lipoxygenase inhibition, cellular antioxidant protection by the CAP-e bioassay, and formation of reactive oxygen species (ROS) by polymorphonuclear (PMN) cells by flow cytometry. **Citation: Consumption of Dried Apple Peel Powder Increases Joint Function and Range of Motion.** Jensen Gitte S., Attridge Victoria L., Benson Kathleen F., Beaman Joni L., Carter Steve G., and Ager David. [Journal of Medicinal Food](#). doi:10.1089/jmf.2014.0037. Study abstract is available on [PubMed](#).

### **About AppleActiv**

AppleActiv™ is the functional food division of Leahy Orchards, a family-owned business, and one of the largest producers of organic applesauce in North America. AppleActiv produces ingredients for functional foods and dietary supplements that leverage the polyphenol and antioxidant properties of apple peels to help support healthy lifestyles. Available in both dry and liquid forms, AppleActiv ingredients contain a rich polyphenol blend with high levels of antioxidants, flavonoids, and other compounds to provide multiple health-support benefits. AppleActiv DAPP (dried apple peel powder) is an organic, natural, wholefood ingredient made from dried apple peel, available now. AppleActiv GHX is an all-natural extract with standardized polyphenol content, with expected availability in early 2015. For more information, or to discuss a specific application, please visit [www.appleactiv.com](http://www.appleactiv.com), or call 888-378-8832.

### **About NIS Labs**

NIS Labs is a contract research laboratory that focuses on innovative, practical approaches to natural products research. It offers customized protocols that include specific assessment of immunomodulatory properties of natural products as well as an array of standardized tests, including antioxidant capacity and anti-inflammatory effects. It conducts cell-based laboratory (*in vitro*) tests and performs clinical trials (*in vivo*) on the effect of consumption of natural products. For more information, visit [www.nislabs.com](http://www.nislabs.com).

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