

PhD programme in MOUNTAIN ENVIRONMENT AND AGRICULTURE

(Curriculum 1 – Sustainable agricultural production systems)

Research projects and supervisors		
Curriculum 1 Sustainable agricultural production systems		
Title	Supervisor(s)	Curriculum
<p>1. The role of semiochemicals in the tritrophic-interaction and the intraspecific communication of <i>Eriosoma lanigerum</i> and <i>Dysaphis plantaginea</i>: exploring new possibilities for the development of sustainable pest control measurements</p> <p>Description - The research project focuses on investigating the role of semiochemicals in the tritrophic interactions involving apple trees, the woolly apple aphid (<i>Eriosoma lanigerum</i>), and the rosy apple aphid (<i>Dysaphis plantaginea</i>). These aphid species are significant pests of apple orchards, causing substantial damage to branches, leaves, and fruits, ultimately reducing yields not only during the initial outbreaks but also in subsequent years. They overwinter either as durable eggs or colonies on apple trees, perpetuating their life cycle and establishing themselves as persistent pests throughout the lifetime of an apple orchard. The pest management relies mainly on synthetic insecticides treatments. During last years a remarkable increase of damages has been registered for the woolly apple aphid, also due to the recent withdrawal or restricted use of certain broad-spectrum insecticides. The study aims to explore how semiochemicals mediate both interspecific and intraspecific communication among these aphid species, their host, the third tropic level (natural parasitoids and predators), with the goal of developing new sustainable pest management strategies for integrated as well as for organic farming. The ideal PhD candidate should possess expertise in aphid ecology, semiochemicals, tritrophic interactions, pest management, and experimental design.</p>	<p>Prof. Angeli S./Dr. S. Schmidt</p>	<p>1 funding Institution: Laimburg</p>