



Figure 2: Use of passive radiofrequency identification (RFID) tags for demographic studies of small mammals. A. Subcutaneous injection of a RFID tag on the back of a juvenile root vole (*Microtus oeconomus*). B, C. Custom made reader connected to a battery and an antenna, tube-shaped single coil antenna placed on the ground. © J.-F. Le Galliard.

the signal and reemits at a doubled frequency that can be picked up by the receiver antenna. Two different transmitter-receiver systems are used to detect the tags (see figure 3). The first is a hand-held unit, originally designed to locate avalanche victims who wear tags on their clothes (e.g. Recco). This system is efficient to locate more or less 10cm tags from 50m above ground, less than 10 m on the ground and about 10cm below the ground surface (Mascanzoni and Wallin, 1986; O'Neal et al., 2005). The second, a ground-based scanning station, uses conventional radar plan position indicator technology (PPI) that gives the coordinates (range and azimuth) of the diodes (see Riley and Smith, 2002 for a detailed description). This system can be used to track smaller tags (more than 1cm) on