

Screening repellents for the management of rodent damage to subsurface drip irrigation systems

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Worldwide the use of subsurface drip irrigation systems (SDI) in agriculture increases to boost production in semi-arid and arid areas. Because of low water use these subsurface pipe systems ensure effective soil watering in the fields. However, there are increasingly reports from SDI users of problems with rodent damage. Rodents can cause extensive damage to the pipes and therefore be responsible for a considerable water loss and extensive repair. So far, it is not known why the animals gnaw on the pipes. It may be because they search for water resources, they grind their teeth on the pipes or the pipes simply block the animals' movements in subsurface tunnels. On the one hand we would like to find an answer to this question, on the other hand we aim to identify a substance that is repellent to the rodents. We will present a short overview of the project including preliminary results of

choice experiments with common voles. Common voles are the major vertebrate pest species in agriculture in Europe and occur in dry regions of southern and western Europe. Choice trials were conducted with common voles singly held in standard cages. Voles were supplied with different secondary plant compounds and other active ingredients attached to granules that were mixed in a food matrix. First results indicate that some compounds efficiently repel voles from feeding treated material. This raises hope to identify a repellent that can be tested in subsequent enclosure and field trials with common voles and other relevant rodent species. An effective repellent applied to piping material or in the vicinity of pipes will help to minimize damage to SDI systems and consequently conserve water resources.