



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5

What's it about?

- ❖ Beside the well-known honeybees and bumblebees, many of more than 500 species of wild bees, native to Europe, and also other flower-visiting insects are important pollinators of our cultivated plants.
- ❖ Visitation rate and flower handling by a diverse range of wild bees ensures proper seed set in apples.
- ❖ Especially mason bees (*Osmia*-species, Fig. 1) love to visit apple flowers in early spring, even at bad weather conditions. They are most efficient pollinators. Mining bees (*Andrena*-species, Fig. 2) are also very important.
- ❖ Many of these wild bees are solitary bees and need particular nesting structures for production of their progeny. They also need a diverse plant community throughout the season to collect pollen and nectar and to produce several generations per year. Also rare species can be supported by these resources.

How to manage?

- ❖ Use less pesticides in pest management. Check for potential side-effects on bees when choosing plant protection products.
- ❖ Provide suitable nesting sites for wild bees. *Osmia*-species can be easily managed in bee-houses (Fig. 3). You can „rear“ your own pollinator population in this way (Fig. 4: *Osmia*-cocoon).
- ❖ Soil patches of vegetation-free loam or deadwood can favour many rare species like the carpenter bee (Fig. 5).
- ❖ Most bee species forage for flowers longer than the apple blooming period lasts. Therefore additional flowering species need to be provided in the orchard or at the surroundings.
- ❖ Bees have well developed mouthparts and pollen collecting structures, enabling them usually to exploit a wide range of particular flower types. A nice mixture with short- and long corolla flowers and those rich of pollen will ensure that each bee finds its favoured ones also after the apple bloom.

More information needed?

Please consult our website EBIO-Network (European Biodiversity Orchards Network) at <http://ebionetwork.julius-kuehn.de>