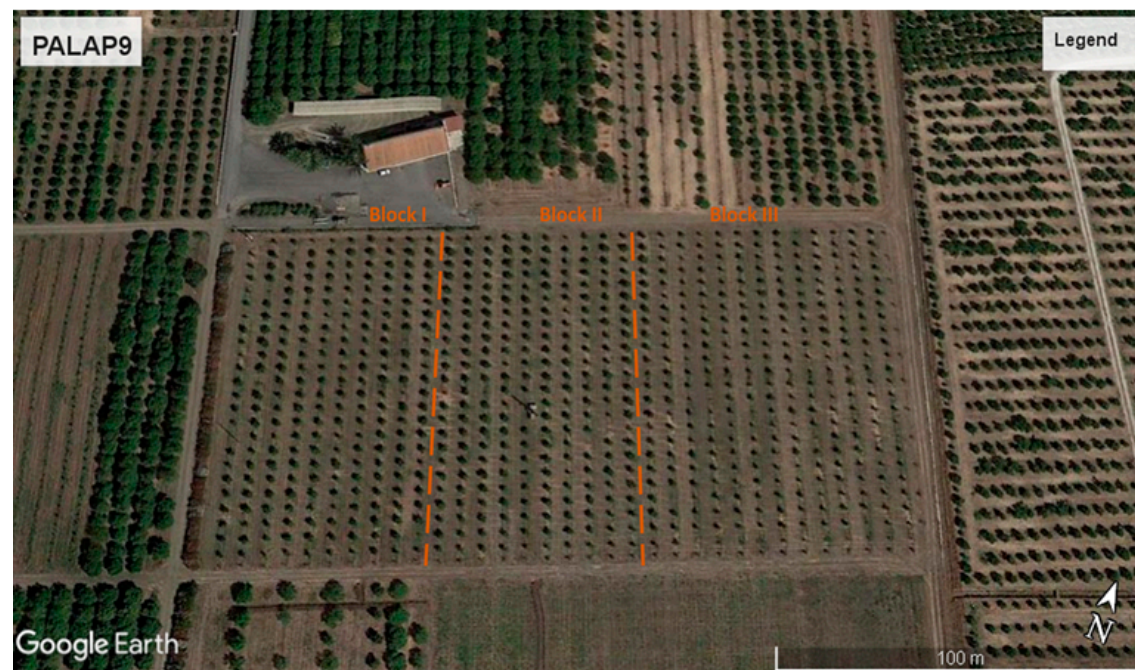
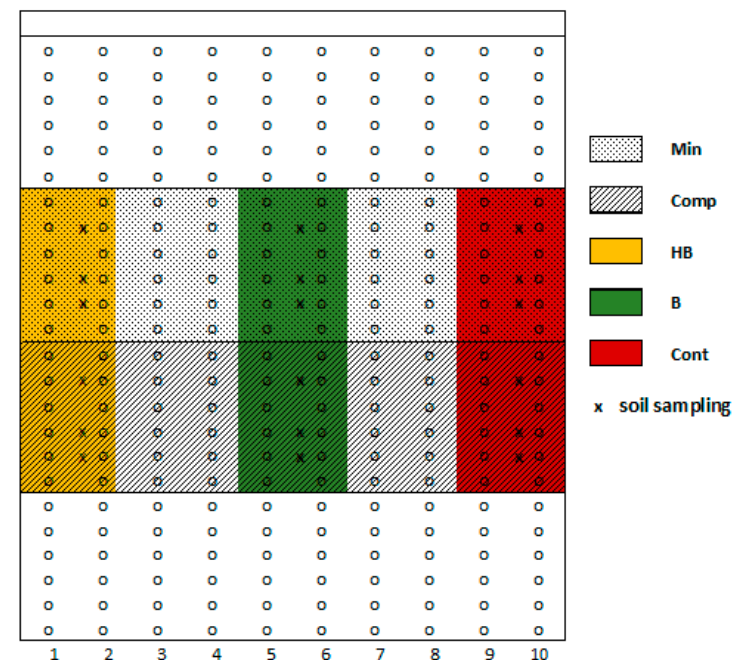


A



B



**Figure S1.** Experimental layout of the PALAP9 long-term experimental trial. The criss-cross design was organized in three blocks (A). In each block (B), the vertical strip was assigned to the System management (S), which foresaw the introduction of agroecological service crop (ASC) species: (i) Barley, *Hordeum vulgare* L. (B), and (ii) Horse bean, *Vicia faba* L. var. minor (HB), compared with (iii) control without ASC (Cont). The horizontal strip was assigned to the Fertilizer (F) with the comparison of a commercial fertilizer (Min) and a compost compliant with EU organic regulation. Soil was sampled 50 cm away from three orange plants in each plot (B).