Bigarreu Gaucher’, ‘Bing’, ‘Noble’, ‘Starks Gold’, ‘Stella’, ‘Van’, ‘Vista’ and ‘0900 Ziraat’ cherry cultivars were used to evaluate the effect of different temperature (10°C, 15°C, 20°C and 25°C) on the *In vitro* pollen germination and tube growth. 20°C was the optimum temperature for the *In vitro* germination of ‘Bigarreu Gaucher’ and ‘Noble’ while 25°C was optimum for ‘Starks’ ‘Bing’ ‘Gold’ ‘Vista’, ‘Van’, ‘0900 Ziraat’ and ‘Stella’. *In vitro* pollen germination increased with incubation period and all cultivars reached own maximum value at 48 hours later. Pollen tube length increased with increasing incubation temperature. The longest pollen tube were measured at 25°C for all cultivars. The *In vitro* pollen germination and tube growth were clearly affected by incubation temperature. Field temperatures during the flowering period were lower than these *In vitro* optima and so may have contributed to the varying levels of seed set observed.