A field experiment with two replications was conducted at the All India Co-ordinated Research Project (AICRP) on oilseeds Safflower at Vasantrao Naik Marathwada Krishi Vidyapeeth (VNMKV) Parbhani, Maharashtra (India) for the screening of different safflower germplasm/advanced material/parental lines against major disease Alternaria leaf blight. The experiment was conducted with four checks in the year Rabi 2016. Significant differences in resistance to the disease were found in the germplasm/advanced material/parental lines tested. Among the 16 lines, 12 lines registered tolerant, 2 lines registered susceptible and 2 lines showed highly susceptible reaction against Alternaria leaf spot. This study concludes that screening of safflower germplasm/advanced material/parental lines for resistance/tolerance to the disease Alternaria leaf spot is a prime important step in developing varieties/hybrids.