The viticulture is an important economical activity in the irrigated agriculture of the São Francisco river Valley. The rapid expansion of this fruit crop has been altering the agroecosystem and favoring the emergence of pests. The objective of this work was to verify the efficiency of natural insecticides and thiamethoxam on the control of Selenothrips rubrocinctus and Frankliniella sp. and their selectivity to natural enemies. The trial was conducted under field conditions, in an irrigated area of Juazeiro municipality, Bahia State, Brazil, in a five-year old vineyard, cv. Benitaka, in a randomized complete block design with five treatments and four replicates. The treatments were: (1) Neem-I-Go 0.5%; (2) Rotenat 0.5%; (3) Bio Alho 0.3%; (4) thiamethoxam 250 WG (20g c.p./100 L of water) and (5) untreated check. There were twelve plants per treatment, being evaluated number of thrips and natural enemies, in inflorescences before application and 2, 4 e 6 days after application. Rotenat and Nim-I-Go were the most effective, respectively, 52.04% and 48.37% of control efficiency, followed by thiamethoxam (46.00%) and Bio alho (23.07%). Two days after application the efficiency of thiamethoxam was 76.79%. However its average efficiency was low. The grades in the selectivity to natural enemies scale to Bio alho, Nim-I-Go, Rotenat and thiamethoxam were, respectively, 2 (slightly harmful), 3 (moderately harmful), 3 and 4 (harmful).