The experiment was carried out in the vegetation seasons of 2010 and 2011. The main purpose of the study was to determine the effects of mulch practices (a control–unmulched treatment, a plastic mulch treatment, and a straw mulch treatment) on fresh ear yield and some yield-related traits of sweet corn according to 3 sowing dates: 1 April, 15 April, and 1 May, respectively. The main effects of sowing dates were significant for the harvest period, the emerging rate from soil, the fresh ear yield per hectare, and the yield components of the sweet corn. The emergence rate of sweet corn was decreased on 1 April and 15 April due to the low soil temperature on these sowing dates. Of the mulch practices, the plastic mulch practice resulted in the highest emergence rate, the highest ear length, the highest ear diameter, the highest ear weight, the highest number of kernels per ear, the highest fresh ear yield, and the highest fresh ear number in both 2010 and 2011. The fresh ear yield and yield components were decreased by the straw mulch practice in both 2010 and 2011. The effects of the sowing date × mulch practice interactions on emergence rate, fresh ear yield, and some yield-related traits of sweet corn were statistically (P < 0.05 and P < 0.01) significant in both years. Of the interactions between the sowing dates and the mulch practices, the highest emergence rate (91.2% in 2010 and 93.7% in 2011), highest ear length (18.4 cm in 2010 and 18.5 cm in 2011), highest ear diameter (45.2 mm in 2010 and 46.5 mm in 2011), highest ear weight (229.1 g in 2010 and 227.1 g in 2011), highest number of kernels per ear (562.1 grains in 2010 and 552.3 grains in 2011), highest fresh ear yield (14,952.6 kg ha$^{-1}$ in 2010 and 14,805.2 kg ha$^{-1}$ in 2011), and highest fresh ear numbers (65,781.8 cobs ha$^{-1}$ in 2010 and 65,789.6 cobs ha$^{-1}$ in 2011) were determined from the plastic mulch practices on 1 May, the latest sowing date. The lowest emergence rate, the lowest fresh ear yield, and the lowest yield components were obtained from the straw mulch practice on 1 April, the earliest sowing date, in both 2010 and 2011.