The African witchweed (*Striga* spp.) and lepidopteran stemborers are two major biotic constraints to the efficient production of maize in sub-Saharan Africa. Previous studies had shown the value of intercropping maize with *Desmodium uncinatum* in the control of both pests. The current study was conducted to assess the potential role of other *Desmodium* spp., adapted to different agro-ecologies, in combined control of both pests in Kenya. Treatments consisted of intercropped plots of a *Striga hermonthica* - and stemborer-susceptible maize variety and one *Desmodium* sp. or cowpea, with a maize monocrop plot included as a control. *S. hermonthica* counts and stemborer damage to maize plants were significantly reduced in maize–desmodium intercrops (by up to 99.2% and 74.7%, respectively) than in a maize monocrop and a maize–cowpea intercrop. Similarly, maize plant height and grain yields were significantly higher (by up to 103.2% and 511.1%, respectively) in maize–desmodium intercrops than in maize monocrops or maize–cowpea intercrops. These results confirmed earlier findings that intercropping maize with *D. uncinatum* effectively suppressed *S. hermonthica* and stemborer infestations in maize resulting in higher crop yields. They also demonstrate that the other *Desmodium* spp. assessed in the current study have similar effects as *D. uncinatum*, indicating comparable phytochemical and other relevant attributes in these species. Overall results indicate the suitability of the *Desmodium* spp. for the control of both *S. hermonthica* and stemborers in maize.