Five one-year studies were conducted in 2002-2006 at the Hancock Turfgrass Research Center in East Lansing, Michigan, to evaluate the chemical seedhead suppression of annual bluegrass (*Poa annua* L.) by single applications of PGRs. The objectives of these field trials were to: 1) determine if application timing affected PGR effectiveness, 2) evaluate potential turfgrass injury associated with PGR application, 3) evaluate accuracy of simple average calculated GDD model (base -5 C) and, 4) remotely predict best application dates using web-based technologies. Application timing interacted with mefluidide in all years. The proposed GDD model accurately predicted best application timing range all years.