Sugar beets grown in the Sacramento San-Joaquin Delta area are often excessively vegetative, producing large tonnages of beets with relatively low sucrose content. This vegetative stimulation is reportedly caused by high rates of nitrification in these highly organic soils. Prior attempts to correct the condition with fertilizers, larger crop populations, and varied cultural practices have proven ineffective. On the basis of available evidence it was believed that treatment with maleic hydrazide, a newly discovered growth regulator, might arrest this vegetative condition and allow sucrose to accumulate in the storage organs.

The growth regulating properties of maleic hydrazide are apparently different from "auxin type" hormones. It is translocated in treated plants and acts as an auxin competitor in the presence of the common growth regulators 2,4-D (3), indole acetic acid and napthalene acetic acid (7) and 2,4,5 trichlorophenoxy propionic acid(4). It has been demonstrated that when maleic hydrazide is applied to green plants it counteracts at least one auxin effect in...