SAUNDERS, JOSEPH W., USDA-Agricultural Research Service, Department of Crop and Soil Sciences, Michigan State University, East Lansing 48824-1325. Foliar disease lesion mimic mutants in sugarbeet.

Numerous mutations conditioning foliar lesions in the absence of pathogen exposure are known from maize, *Arabidopsis,* and barley. Two such mutant phenotypes have been recovered in our program at East Lansing. The first involves relatively large irregularly shaped necrotic patches on foliage, with inheritance as a monogenic dominant. It was recovered as a somaclonal variant from REL-1. The second mutant phenotype involves round lesions with watersoaked, necrotic, chlorotic, or heavily red pigmented appearance, depending on the individual plant examined, as does the lesion size. Senescing leaves are most likely to display the lesions, often in coalesced condition, but on severely affected plants incompletely expanded leaves can show individual lesions. Many affected plants appear to be senescing prematurely, with loss of photosynthetic area. Initial inheritance studies of this second mutant type indicate strong modifier gene involvement or incomplete penetrance, coupled with a recessive nature. A number of the disease lesion mimics from *Arabidopsis* and barley are associated with resistance to a number of pathogens, but this has not been examined in the case of the two sugarbeet mutants.