recorded only for the variety CNS-24. This same Clemson line was used for Experiments 56-3 and 57-1. Of the two varieties planted in Experiment 58-1, data are reported only for Lee, a grain type comparable to CNS-24. The other variety, Otootan, was a forage type, but responded similar to Lee.

A total of 25 different chemicals were screened to evaluate weed killing efficiency and to determine which might be sprayed safely over the soil surface pre-emergence to soybeans. Herbicides studied are listed in Table 2 along with information on the formulation of each chemical tested. For convenience in the discussions and tables, common names or experimental designations which are recognized and accepted by the Terminology Committee of the Weed Society of America are used for chemicals throughout this publication (9). There are, however, no accepted common names for two of the herbicides included in these tests. These are 2,5-dichloro-3-nitrobenzoic acid, referred to by the company designation "Dinoben", and the mixture of 2-chloro-*N,N*-diallylacetamide and trichlorobenzyl chloride, here designated as "CDAA-TCBC". In several cases, the designation refers to the active agent although salts of these chemicals were actually used. These include the sodium salts of NPA, PCP, TCA, and 2,3,6-TBA. The 2,4-D formulation contained the amine salt, and the DNBP consisted of a mixture of alkanolamine salts.

Herbicide treatment rates are specified in terms of pounds per acre of the active chemical ingredients. In most cases, this is the content of technical chemical, but acid or phenol equivalents are used where more appropriate, as in the cases of 2,4-D and DNBP, respectively.

The initial selection of herbicides and rates used in these trials was based on suggestions supplied by commercial sources of the chemicals and on information reported by other research workers. Sometimes it was necessary to increase the chemical rates used on this organic soil to two or more times those commonly suggested for weed control on light mineral soils.

Data from these primary evaluation trials were recorded in the form of visual ratings. Since the tests were observational and unreplicated, quantitative measurements were not made. Ratings were determined by direct comparisons between treated plots and untreated check areas. A 10 increment scale, ranging from 0 to 10, was utilized for both observed factors, as follows: