

Good *Kills* on Weeds in Cotton

Morning Glory and Grasses Controlled

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A good commercial control of annual morning glory and annual summer grasses can now be obtained at a nominal cost with a chemical called CMU. This new chemical compound, labeled by the chemists 3-(p-chlorophenyl)-1, 1-dimethylurea, may well turn out to be a great money saver for cotton growers.

Annual morning glories twine around the cotton plants, making hand picking very difficult and machine picking slow. The leaves of the annual grasses shred easily, becoming mixed with the cotton fiber when picked. Grass-leaf trash is extremely difficult to clean from the lint, and therefore materially reduces the grade of the cotton and the return to the farmer.

In addition, the annual morning glory and annual summer grasses compete with the cotton plants for light, water, and nutrients, thereby lowering the yield.

Tested 2 Years

Two years of tests have shown that CMU gives good commercial control of annual morning glory and annual summer grasses. CMU is actually a soil sterilant and not a contact spray. The chemical must enter the weed through the roots in order to kill. At high rates the chemical will kill all plant life.

Fortunately the chemical ties up in the surface few inches of the soil and is not readily leached. By using low rates in the growing season, only the shallow-rooted plants (annual morning glory and summer grasses) absorb the chemical and are killed. Most cotton roots are deep late in the season and do not contact the CMU.

With applications of CMU early in the season when the cotton plants were small and their root system shallow, the plants have shown severe leaf mottling and chlorosis.

In experiments, CMU was applied at rates of 0.5, 1.0, 2.0 and 4.0 pounds per acre, the chemical being sprayed on the soil just prior to the last cultivation at lay-by time. The 0.5 pound rate gave a fair control of the weeds, whereas the 1.0, 2.0 and 4.0 pound-per-acre gave excellent commercial controls. In some cases the 4.0 pounds of CMU per acre caused some bottom defoliation of cotton.

A rate of 1½ pounds of CMU per acre in 30-40 gallons of water is recommended at lay-by time, the chemical being sprayed on the soil just prior to the last cultivation. On very sandy or light soils, the rate should be reduced to 1 pound of CMU per acre.

No Residual Carry-Over

Since CMU is a soil sterilant, it is of interest to know if there is a residual carry-over from one season to the next that might build up after several years of continuous use. In test plots where 4 pounds of CMU per acre were applied during early June, there was sufficient breakdown in three months to permit grass to develop again in those plots. From these observations it was concluded that there is no serious residual problem at low rates.

CMU is only slightly soluble in water, so it must be kept in suspension during the application. Spray equipment with mechanical agitators is necessary.

CMU was applied on a commercial scale in 1953 to 50 acres of cotton badly infested with annual morning glory. The application was so successful that the farmer is planning to treat his entire cotton acreage this coming season.

On irrigated lands the weeds in cotton should be controlled by cultivation as long as possible. *Apply CMU at lay-by time, just before the last cultivation.*

An irrigation must follow the application of CMU before the chemical will be effective.



Grasses grow in cotton rows!



No grass or weeds here after control methods.



Morning glory vine (and blossom) on cotton plant.