

## MATERIALS FOR CHEMICAL WEED CONTROL

(Abstract of article by T. C. Ryker in *Agricultural Chemicals*, Vol. 4, No. 5, May, 1949)

This article effectively summarizes the more important modern herbicides and emphasizes the need for a clear understanding not only of the chemical itself and of its action on plants and the environmental factors related to weed-killing efficiency but also of the terminology involved. The author writes of pre-emergence and post-emergence applications, of blanket or direct sprays, of contact and growth-regulating types and of selective and translocated materials.

### 2,4-D

2,4-D is highly effective in very small amounts. It is absorbed through the foliage and translocated through the roots, resulting in slow but certain death to susceptible plants. It is selective because it affects broad-leafed plants much more severely than the grassy types. The sodium or amine salts are highly soluble in water and are relatively nonvolatile. The ester forms are oil soluble and are much more volatile and dangerous to surrounding sensitive plants. 2,4-D is effective for foliage applications and as a pre-emergence spray to control the germinating of weed seedlings. 2,4,5-T (a related compound) is more effective on plants like wild roses, briars and weedy oaks. It is highly effective in brush clearance.

### Pheno'ic Herbicides

These materials are used effectively as contact herbicides wherein the materials are not translocated. This requires thorough wetting of the plants, and the materials generally are not effective against perennials. Their differential killing depends upon their ability to wet weed foliage more than crop foliage. They may be used as pre-emergence sprays for certain crops, and in general they are more effective against broad-leafed weeds than against grasses.

### Cyanamid

Cyanamid in moist soil releases free cyanamid, which has herbicidal action.

It has been used effectively in tobacco-beds, in seedbeds for turf and for eliminating weeds from vegetable crops which require high quantities of nitrogen. Potassium cyanate, a related compound, has value as a contact herbicide on certain crops like onions and currently is being tested for crabgrass control.

### Oils

Oils are contact herbicides and are highly toxic to many grasses. Light oil such as Stoddard Solvent has been effective for weeding carrot fields. Oils may be fortified with 2,4-D and with phenolic herbicides to supplement their weed-killing properties. The oils and the phenols may be used as directed sprays.

### Sodium Trichloroacetate

The sodium and ammonium salts, usually designated as sodium TCA and ammonium TCA, are highly effective against grasses. They are contact sprays but are translocated to some degree. Soil sterility may last from two to four months. TCA has shown remarkable promise for controlling Bermudagrass, quackgrass and Johnsongrass.

### Chlorates

Sodium chlorate, although an excellent chemical for controlling crabgrass, has not found favor because of the fire hazards involved.

### Ammonium Sulfamate

Ammonium sulfamate as a foliage spray is translocated and has been used extensively for controlling brush and woody plants. The dry salt may be applied to cut stumps or in cups cut with an ax around the bases of weed trees. The soil sterility is usually of short duration.

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