

### III. WEEDICIDES

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Modern weedicides can very roughly be divided into three classes according to the nature of their action and the plants they are designed to kill :—

#### (1) Non-selective Contact type Weedicides

Sulphuric acid  
Sodium arsenite  
Sodium chlorate  
“Atlacide”

D.N.O.C. (Sodium salt of dinitro-ortho-cresol)  
Pentachlorophenol  
“Kanex”  
“Santophen”  
“Santobrite” (Sodium salt).

Weedicides of this group are capable of killing almost all plants they can effectively “wet”.

#### (2) Selective “Hormone” type Weedicides.

MCPA (Sodium salt of 2-methyl-4-chloro-phenoxyacetic acid)  
“Phenoxyleno”  
2,4-D (Sodium salt of 2,4-dichloro-phenoxyacetic acid)  
“Fernozone”

Weedicides of this group are chemically related to the plant growth hormones and operate by penetrating the tissues and there setting up metabolic disturbances. They were chiefly developed for use against broad leaf weeds in cereal crops. They do not affect grasses and certain resistant broad leaf weeds.

#### (3) Selective “Grass” Weedicides.

TCA (Sodium or ammonium salt of trichloroacetic acid)  
“Tecane” (Ammonium salt).  
IPC (Isopropyl N-phenyl carbamate).

Weedicides of this group have only recently been developed with the object of having a selective action against certain grasses. They will also kill many broad leaf weeds.

Although trials with all these different weedicides have been carried out from time to time, our most recent experiments have been designed to determine the effectiveness of TCA and IPC, either alone or in combination with other weedicides, against couch (*Panicum repens*), and illuk (*Imperata cylindrica*). Recent results indicate that at least three applications of TCA at a rate of 50 lbs. per acre are necessary to give a complete kill of either of these grasses. Combining TCA with other weedicides, cutting the grass before treatment, and or forking the area, did not apparently give any increase in effectiveness. IPC was ineffective in all strengths and combinations tested. When the present high cost of TCA per pound is taken into account it does not appear that the use of weedicides to control couch or illuk can be economical.

Sodium chlorate is perhaps so far the only weedicide which is of any economic value on a tea estate. Used at a concentration of 2 lbs in 10 gallons of water, and applied at a minimum application rate of 100 gallons per acre, it has proved quite an effective means of controlling the weed *Eupatorium riparium* in ravines and along boundaries.

Economics apart, the complete elimination of all weeds with one weedicide spraying would appear to be still only a pipe dream. Thus in our own experiments, whatever combinations of weedicides have been used, the weed *Commelina sp.* appears to have been completely unaffected. Accordingly the intensive use of one or more weedicides may be expected in the long run to produce the same effect as that of selective weeding—certain uncontrolled species may well increase and become new pest species.

*Finally a most serious word of warning.* Tea is affected by all the weedicides we have tested. In fact TCA has proved to be one of the most effective killers of tea that we know. In an experimental plot of pruned tea, in which TCA was sprayed against couch, all the bushes were soon dying as a result of the absorption of TCA through the roots. The buds first started to develop and then died off. Never, therefore, undertake any weedicide experiments in standing tea unless you have first obtained proper scientific advice.

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