

## PESTICIDE TAIN T TRIALS IN TOBACCO

Taint trials must be carried out before recommending pesticides for use in Queensland tobacco fields. Smith (1961) has recorded trials carried out in the 1952–1954 seasons, and since then a further four trials have been completed at Inglewood (1958–59 and 1959–60) and Parada (1959–60 and 1960–61). The results of these 8 trials (combined in Table 1) and experience gained have established definite requirements and methods for this type of work:

- (1) It is essential to use only first quality crops, as leaf quality is an important factor in the detection of taints due to pesticides.
- (2) The materials are applied at commercial strengths to complete cover within 7 days of harvesting, as in Queensland tobacco fields spraying to control pests and harvesting may be concurrent.
- (3) The use of screens is required to prevent cross-contamination by spray drift.
- (4) BHC is a satisfactory standard treatment for inclusion in taint trials.
- (5) Provision must be made to ensure that not less than 3 lb of cured leaf will be available for each sample, and treatments are replicated 6 times.
- (6) Each sample is wrapped separately in moisture-proof viscose film, numbered and forwarded without the key to a testing panel consisting of personnel experienced in handling tobacco leaf.

Notes on panel testing, which have been provided, are as follows:

“Samples are set out without any attempt to place like sorts together. All samples are retained in their original wrappings, and are replaced on every occasion that a test is carried out.

Categories are Nil, Slight, Distinct, and Distinct plus.

Each member of the testing panel examines the samples by nose. Particular attention is paid to the butts and the opening up of the main body of the sample, which is normally well compressed. An initial requirement is to have a reasonable appreciation of the normal aroma or smell of leaf from the particular district in which the taint trial leaf has been grown. A sample from the stock of leaf from that district should therefore be used as an outside check.

Confusion may result if too many samples are attempted at the one session, particularly if there is a wide range of taint levels. It is advisable to allow at least 6 hours between sessions.

When the panel has completed its examination, analyses of records sheets are made. These show up major differences of assessment among members of the panel, which can understandably occur when residues of distinct taints bias the assessment of the succeeding sample. In practice,

there are no major differences in about 75 per cent. of first-test records. Inconsistencies are checked 24 hours later by all panel members without access to previous records.

When setting up a panel, sensory judgment is confirmed by smoking tests. Once the panel becomes experienced the amount of checking with smoking tests can be reduced, but is still necessary where doubt exists."

By definition, leaf classified as distinctly tainted is objectionable when used alone or in blends, and slight tainting implies the presence of undesirable flavours which can be masked by blending (Smith 1961); and furthermore, testing is to an appreciable extent subjective. Evaluation of trial results therefore can be no more than dichotomy (see Table 1).

TABLE 1  
RESULTS OF TAINT TRIALS, 1952-1961

Material	No. of Trials	No. of Samples Tested	Taint Results : No. of Samples with—				Percentage of Samples with Distinct Taints
			Nil	Slight	Distinct	Distinct plus	
Aldrin .. ..	2	12	8	4	Nil	Nil	Nil
BHC .. .. .	3	18	1	1	15	1	88.9
Chlordane .. ..	2	12	1	3	8	Nil	66.7
DDT .. .. .	1	6	Nil	5	1	Nil	16.7
DDT + lead arsenate	1	3	Nil	3	Nil	Nil	Nil
Dieldrin .. ..	4	24	15	9	Nil	Nil	Nil
Endrin .. .. .	3	15	6	8	1	Nil	6.7
"Guthion" .. ..	1	6	Nil	Nil	1	5	100.0
"Kelthane" .. ..	4	21	6	14	1	Nil	4.8
Lindane .. .. .	7	32	8	15	9	Nil	28.1
Parathion .. ..	1	3	2	1	Nil	Nil	Nil
Sevin .. .. .	1	6	Nil	4	2	Nil	33.3
Toxaphene .. ..	2	12	4	Nil	8	Nil	66.7
"Telodrin" .. ..	3	18	8	6	4	Nil	22.2
TTC .. .. .	1	3	Nil	Nil	3	Nil	100.0
Untreated .. ..	7	42	25	14	3	Nil	7.1

"Guthion" is now added to the list of materials which, because of taint, cannot be recommended for use in Queensland tobacco fields. Previously Smith (1961) had listed BHC, chlordane, toxaphene and TTC.

#### REFERENCE

SMITH, W. A. (1961).—Tobacco leaf-pest control investigations, 1949-1955. *Qd J. Agric. Sci.* 18:33-56.

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(Received for publication August 28, 1961)