

GUIDELINES FOR HERBICIDE REGISTRATION TRIALS:

SUGAR-CANE

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GUIDELINES FOR REGISTRATION TRIALS: SUGAR CANE

1. INTRODUCTION

- 1.1. The purpose of these guidelines is to obtain greater uniformity in registration trials on sugar cane. This exposition serves only as a guide to conducting such trials.
- 1.2. These guidelines do not replace the requirements set out in Act 36/1947 and the regulations promulgated thereunder but are only complementary to the above.
- 1.3. Experimentation with a view of obtaining registration of an Agricultural Remedy must be discussed in advance with the Technical Advisor (Herbicides), Act 36/1947 of the Department of Agricultural Economics and Marketing and the South African Sugar Association Experiment Station, Mount Edgecombe. The Experiment Station and Technical Advisor (Act 36/1947) should be provided with a plan of each trial and proposed list of treatments prior to commencement of the trials.
- 1.4. It is recommended that the South African Sugar Association Experiment Station and the Department of Agriculture and Fisheries be kept informed of the progress of the experimentation at all times prior to submission for registration.
- 1.5. Residue trials must be undertaken according to the requirements set out in the circular letter X17/A of the Registrar (Act 36/1947), dated 8 January 1982.
- 1.6. The results must where necessary be analysed statistically.
- 1.7. Both herbicide formulations and herbicide formulation tank mixtures require registration.

1.8. The South African Sugar Association Experiment Station Mount Edgecombe should be notified in writing prior to the 1st September in order that phytotoxicity and efficacy studies can be included in their programme of work. A sample of the remedy and technical data on any new chemical being evaluated should also be submitted before that date. These efficacy trials serve merely to back up and not to replace the data produced by the applicant.

1.9. The Experiment Station will only accept herbicides or herbicide mixture remedies in their trials if it has been adequately demonstrated that such a remedy is an effective weed control agent.

2. TRIAL REQUIREMENTS

2.1. At least four replicated efficacy trials.

2.2. At least one replicated phytotoxicity trial conducted in trays, and if phytotoxicity symptoms are evident or if no tray trial can be conducted, at least two replicated phytotoxicity trials conducted in the field taken through to harvest.

3. EFFICACY TRIALS

3.1. Trials should be conducted over two seasons in different bioclimatic regions and on a range of soil types. The mechanical analysis from each site should be determined beforehand. The South African Sugar Association Experiment Station, Mount Edgecome can undertake such soil analysis.

3.2. Trials should be established to cover as wide a range as possible of the weed species which are encountered in the South African Sugar industry.

- 3.3. Treatment should be replicated a minimum of four times and each treated plot should be adjacent to a small untreated control area (minimum area 4m² minimum width 1 m), which can be used for weed control evaluation.
- 3.4. The weed control rating system used by the company responsible should be indicated and explained clearly.
- 3.5. Application rates, dilution rates, soil conditions, climatic conditions prior to and after application, crop growth stage, weed control ratings and any other relevant information such as application technique and equipment should be recorded.
- 3.6. The Experiment Station should be invited to inspect such experiments preferably when herbicidal effects are at their peak to ensure that trials are of an acceptable standard and to evaluate the performance of the herbicide or herbicide mixture being tested.
- 3.7. The spectrum of weeds controlled and important weed species that are not controlled must be indicated.

4. PHYTOTOXICITY TRIALS

- 4.1. Initial phytotoxicity work for both pre-emergence and post emergence herbicides should be carried out in trays. Treatments shall consist of:
 1. Control (hand-weeded-no herbicide)
 2. Current commonly used remedy (where applicable) at the recommended dosage.
 3. Current commonly used remedy (where applicable) at double the recommended dosage.
 4. Candidate remedy at proposed dosage.
 5. Candidate remedy at double proposed dosage.

One variety (NCO 376) and two soil types (sand and sandy clay loam) should be used. Treatments should in the case of a pre-emergence herbicide be applied to the soil soon after planting or in the case of a post-crop emergence herbicide directly over the cane foliage when this has reached the stage of three to five leaves, unfurled per shoot or as applicable to the particular remedy.

- 4.2. Shoot counts, height measurements and mass of above ground parts should be recorded approximately twelve weeks after planting in the case of a pre-crop emergence treatment and above six weeks after application of a post emergence treatment. This data should be used to assess the phytotoxic effect.
- 4.3. If phytotoxic effects are apparent a further similar trial should be undertaken in the field and the cane taken to harvest, when the effects of the herbicide should be finally determined using yield as the criterion.