

CHARACTERISATION OF WEED POPULATIONS USED IN WEED CONTROL EXPERIMENTS FOR GLP AND GEP

Different populations of the same weed species can have different growth habits and reactions to herbicides. For instance there are well documented differences between populations of *Galium aparine*, *Alopecurus myosuroides* and *Avena fatua*. (Herbiseed Brief Weed Guide No.3 gives details of these and other species). This variation can pose problems in herbicide screening and field trials since inadvertant inclusion of abnormal individuals or populations in an experiment could jeopardise the objectives of the whole experimental program.

If the experimental plants include individuals of differing biotypes, for example from an inhomogenous wild population, the results of any experimental treatment can be confounded by the reactions of individuals of differing susceptibility to that treatment.

Similarly, the unintentional inclusion of an abnormal population (such as a partially resistant population of *Alopecurus myosuroides*) in a primary herbicide screen could result in the inadvertant rejection of potential candidate herbicides.

Clearly, the experimentalist needs to ensure that the weed populations included in an experiment are properly identified and their biotype is appropriate to the objectives of the experiment. This is of paramount importance where the tests are to be conducted under the requirements of formal GLP/GEP (Good Laboratory/Experimental Practice) one requirement of which is;

‘.....in biological test systems the organism species, strain and source of supply.....should be given in the study plan.....’

HERBISEED has recognised these problems and set up a system of population records for all the weed seed it produces. Each batch of seed can then be supplied with a ‘Population Certificate’ describing the original source of the population and significant details of its history. A sub-sample of each batch, and where possible a pressed specimen of the parent plant, is permanently archived by Herbiseed for future reference either by the experimentalist or by GLP/GEP inspectors.

Most of our weed seed is grown as a crop at one of our production facilities in England, Serbia and the Philippines. During production the crop is weeded and rogued to remove atypical plants. To avoid the effects of genetic drift, seed of each species is collected from a commercial farm once every 5-7 generations and used as a source for our future population of that species. Thus the history of each population we supply is effectively characterised and documented in our records. The ‘Weed Population Certificate’ will provide the user with a documentary record of this characterisation.

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