

## **Removal of the case of Synthetic Auxin Resistant *Tripleurospermum perforatum* from the survey.**

The case of MCPA resistant *Tripleurospermum perforatum* from the United Kingdom and France was added to the International Survey of Herbicide-Resistant Weeds in 1993.

The case was submitted to the survey from scientists in Europe based on the following paper.

**Ellis, M., Kay, Q.O.N., 1975. Genetic variation in herbicide resistance in scentless mayweed (*Tripleurospermum inodorum* (L.) Schultz Bip.) I. Differences between populations in response to MCPA. Weed Res. 15, 285- 293.**

**Abstract:** Experiments are described in which plants from six different populations of the outbreeding annual weed *Tripleurospermum inodorum* were grown with barley in field plots and sprayed with 4-chloro-2-methylphenoxyacetic acid (MCPA) at a number of doses. The populations showed significant differences in reduction of weight, the most resistant population having an ED50 of  $181 \pm 36.9$  mg/m<sup>2</sup> a.e. MCPA, 2.49 times as great as the ED50 of the least resistant population. In a second experiment in which plants from these two populations were again grown with barley in field plots and sprayed with several doses of MCPA at three different stages of growth, their resistance to MCPA was found to differ consistently at all three stages of growth, the more resistant population having a mean LD50 of  $1103 \pm 161.5$  mg/m<sup>2</sup> a.e. MCPA, 2.09 times as great as the mean LD50 of the less resistant population. The populations were similar in other respects. The differences in the spraying histories of the two populations were consistent with the supposition that the differences in resistance to MCPA had resulted from natural selection for MCPA resistance in the more intensively sprayed population, but other processes may also have been involved.

### **This case has now been removed from the survey because:**

1. The R/S ratio reported in the paper only ranged from 2 to 2.5, which is below the threshold of the current standard used for the survey today (at least 4 fold). Populations of weeds naturally vary in their levels of resistance to herbicides even prior to selection, it is not unusual for wild (unselected) populations of weeds to vary in their levels of resistance to herbicides by 2 or 3 fold.
2. *Tripleurospermum inodorum* is normally not well controlled by MCPA and is only listed as “suppressed” on the label
3. There have been no other reports of resistance or any control issues with synthetic auxins in *Tripleurospermum inodorum* in the subsequent 40 years since this paper despite the extensive use of synthetic auxins globally.

For these reasons this case has been removed from the survey.

Ian Heap.

11/17/2014