Phone to Elanco 4.1
EEB

Record of Phone Call to R. Petrie from Robert Ehr of Dow/Elanco Co. on 9/08/93:

I talked to Dr. Ehr for approximately 90 minutes. The discussion was with regard to herbicide Subdivision J testing in general and more specifically plant tests and herbicide types that would reduce our endangered plant concerns.

We discussed difficulties in estimating potential field effects from a few laboratory studies. Dr. Ehr stated that he has a large historical data base that can be used to compare herbicide activity on the same plant species in the greenhouse vs the field. While dependent on the specific mode of action of the herbicide and it's ability to be taken up systemically, he generally must increase the rate 2 to 4 X in the field to account for environmental and biological factors in the field. Field plants (as opposed to greenhouse plants) have tougher cuticles and thicker waxy layers. Environmental factors such as soil type, wind, rainfall, temperature are more variable in the field. I suggested that he pool his historical data with other companies and present us with a published or peer reviewed report that we can cite.

Dr. Ehr asked if I would object to the conduct of field studies at the Tier II level. I stated that Subdivision J currently allows registrants to conduct Tier II studies in the field. He was not aware of this possibility. Dr. Ehr suggested that they could perform these during the Experimental Use Permitting period, and study off target movement at the same time. I questioned the number of replications and locations, and the need for field GLP's. He stated that the tests could be conducted using field GLP methods and replicated in numerous parts of the country. He already has agronomists situated at each EUP location and they could easily observe off-target plants for visual effects and use bioassay plants at various intervals downwind in some areas. They would assess downwind deposition and monitor surface water residues leaving the fields.

I suggested that the industry might help us identify and locate plant endangered species in relation to herbicide use areas. I stated that Mike Davy is currently doing this but it's a slow process. We will, however, eventually eliminate a number of species from our concern list based on their location and proximity to the pesticide use areas. I mentioned the difficulties involved in getting the FWS to provide a quick turnaround on jeopardy opinions. I last approached the FWS on Ignite herbicide with a request to identify non-crop areas where nonselective herbicides could be used (such as tank farms, airport runways, around farm buildings,etc.). The FWS refused to honor this request due to lack of staffing.

Dr. Ehr asked what is the ideal herbicide? (Which ones have we had no problems with?) I told him that there are a number of factors

that we consider including volatility, solubility, 1/2 life in soil, 1/2 life in water, and application equipment. The low dose herbicides (applied at a few grams per acre) cause us great concern if they are applied aerially, with misting nozzles, over large acreages, if they have long soil and water 1/2 lives or if they are volatile and/or water soluble. A ground applied preplant incorporated or preemergence soil surface herbicide with 1/2 life in soil and water less than 6 months, low solubility, and low volatility would be an ideal herbicide with regard to nontarget plant phytotoxicity potential. The foliar applied herbicides have been routinely applied with aerial equipment (for practical reasons) and have always drifted to nontarget areas; ever since the introduction of 2,4-D. Foliar applications of glyphosate and 2,4-D using recirculation sprayers and rope wicks have resulted in minimal off-target drift.

With regard to flumetsulam herbicide, now under review at EPA, Dr. Ehr stated that it is only active on 5 plant families and more active on the Leguminosaea and Asteraceae families (based on visual phytotoxicity ratings from field trials in Europe and the U.S.) and flumetsulam is more active on annuals than perennials. They have tested 100,s of plants to determine the most sensitive ones. How do we factor this into our endangered species equation for effect/no-effect; and what further research can his company perform to answer our concerns? I stated that we currently don't consider surrogate species testing adequate to determine "no-effect" for endangered species in the same family, genus, or species. The reason being the selective nature of many herbicides within species of plants (and example is Muster herbicide that kills wild mustard weeds in the mustard crop canola). We are currently left with county restrictions or maps. A few endangered plants are covered by the existing maps, however, we will also have to recommend county restrictions until all the maps are produced. Mike Davys' efforts will also go a long way toward limiting our concern list in the future. The other approach is to reduce off-target movement of the pesticide to reasonable levels by use of advanced application technology and within-the-field buffer zones.

Mr. Ehr would like to further discuss these issues and submit a field test protocol for Tier II testing.

Rick Petrie, Agronomist, 9/09/93

cc Mike Davy
Dan Rieder
flumetsulam file