ions of the type $M(H_2O)_6H^+$ were used for that purpose. The corresponding relationships were:

- for ion type M_2H^+:

$$lg\ m = -0.544 \times K_o^+ + 3.176 \quad (r = 0.998)$$

- for ion type $M(H_2O)_6H^+$ and ion type M_2H^+:

$$lg\ m = -0.510 \times K_o^+ + 3.137 \quad (r = 0.995)$$

These correlations are consistent with data published in literature.

In all further experiments, DIMP (diisopropyl-methylphosphonate) was used as the model substance simulating schedule-1-chemicals.

1.2. Pre-inspection laboratory experiments

A number of experiments was conducted before the trial inspection in order to develop methods which would allow to:

- validate sampling points selected in a plant;
- identify traces of organophosphorous schedule-1-chemicals against the background of chemicals present;
- detect traces of chemicals deposited in the plant area by production activities which had occurred before commencement of the inspection.

1.2.1. Detection of DIMP in mixtures containing an excess concentration of organophosphorous pesticides

The following organophosphorous pesticides (in form of formulations and/or pure compounds) were used in the experiments:

- Bi-58 EC (pesticide formulation containing dimethoat)
- Wofatox (pesticide formulation containing parathion-methyl)
- Fekama Tribuphon EC 50 (pesticide formulation containing butonate)
- DDVP (pure chemical)
- methamidophos (pure chemical)

DIMP detection and identification was performed from gas samples as well as in the head space of liquid mixtures (placed inside a diffusion chamber). The following conclusions were drawn:

- At a DIMP concentration in the gas phase of approximately 0.04 mg/m^3 and a DIMP to pesticide ratio of 1 : (13 500 ... 22 000) for pesticide formulations, which corresponds to a ratio of 1 : (1 000 ... 10 000) for the pesticide itself, it was in all cases possible to clearly identify the $(DIMP)_2$ peaks. These data were further