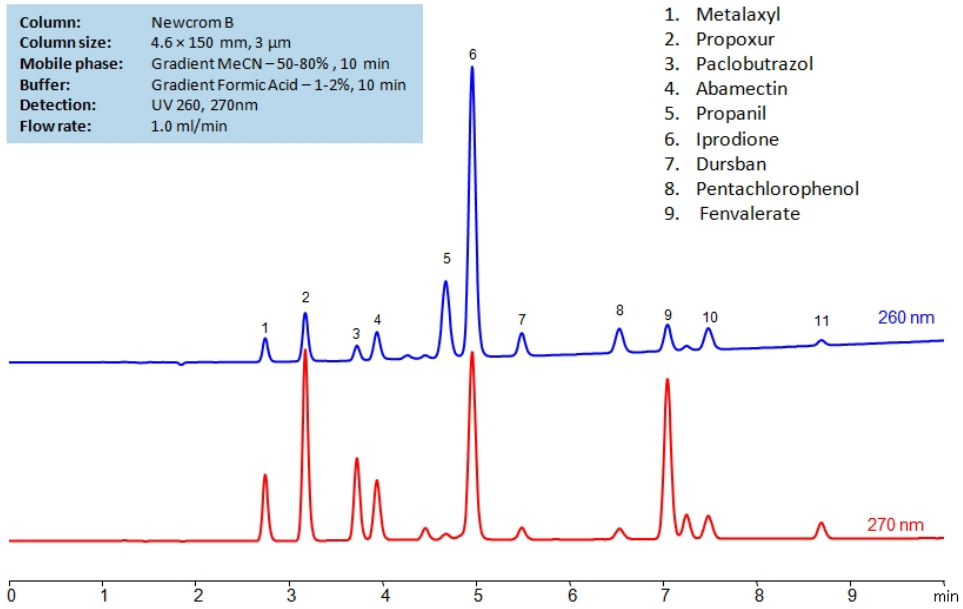
HPLC Separation of Pesticides on Newcrom B Column



High Performance Liquid Chromatography (HPLC) Method for Analysis of Metalaxyl (UV) , Propoxur , Paclobutrazol , Abamectin , Propanil , Iprodione , Chlorpyrifos-methyl (Dursban) , Pentachlorophenol , Fenvalerate .

Metalaxyl , also known as methyl N-(methoxyacetyl)-N-(2,6-xylyl)-DL-alaninate, is a systemic fungicide with the chemical formula C15H21NO4 . It is used to control Pythium and Phytophthora in vegetables. It has suffered a resistance problem going back to the 1980s.

Propoxur is a non-systemic insecticide produced from catechol with the chemical formula C11H15NO3 . It has a variety of uses from turf, forestry, and agricultural pests to household pests and fleas.

Paclobutrazol (PBZ) is a synthetic triazole compound with the chemical formula C15H20ClN3O . It is used to control plant growth as an antagonist of the plant hormone gibberellin. Through reducing reducing internodal growth, it causes stronger stems, greater root growth, and earlier fruitset. It can also reduce frost sensitivity in plants.

Abamectin is a insecticide with the chemical formulas C48H72O14and C47H70O14 . It is also used to control fire ant populations. In veterinary cases, it is used to deworm horses as well as an antihelmintic.

Propanil is a contact herbicide with the chemical formula C9H9Cl2NO . It is one of the most widely used herbicides in America. It works as an inhibitor of photosynthesis and CO2 fixation in weeds.

Iprodione is a hydantoin fungicide and nematicide with the chemical formula C13H13Cl2N3O3 . It is used on a wide variety of crops that are affected by fungal diseases such as botrytis bunch rot, brown rot, and Sclerotinia. Approval of using it is different across the world.

AugustaChrom - Dr. Roland Kießwetter
Tel.: +49 821 599 783 70
Fax: +49 821 599 783 71
E-Mail: info@hplc-shop.de

Dursban is a highly toxic organophosphate with the chemical formula C9H11Cl3NO3PS . It works through interrupting the electrochemical processes in nerves. This leads to a build-up of acetylcholine, which leads to paralysis and eventual death.

Pentachlorophenol is a manufactured chemical with the chemical formula C6HCl5O . It is most often used as herbicide, insecticide, fungicide, algaecide, and disinfectant. Exposure to it can cause damage to liver, kidney, blood, lungs, eyes, skin, and mouth. It is classified as a probable human carcinogen.

Fenvalerate is synthetic pyrethroid insecticide with the chemical formula C25H22ClNO3 . It is used against a wide range of pests, partially due to it’s moderate mammalian toxicity following short-term and acute exposure. It is the most toxic to bees and fish. Upon contact, it may irritate skin and eyes.

Metalaxyl (UV) , Propoxur , Paclobutrazol , Abamectin , Propanil , Iprodione , Chlorpyrifos-methyl (Dursban) , Pentachlorophenol , Fenvalerate can be retained and analyzed using the Newcrom B stationary phase column. The analysis utilizes an isocratic method with a simple mobile phase consisting of water and acetonitrile (MeCN) with a formic acid buffer. Detection is performed using UV.

Method Parameters

Column	Newcrom B, 4.6 x 150 mm, 3 µm, 100 Å, dual ended
Mobile Phase	MeCN/H2O
Buffer	Formic Acid
Flow Rate	1.0 mL/min
Detection	UV, 260, 270 nm

Quelle: https://sielc.com/hplc-separation-of-pesticides-on-newcrom-b-column