A SIMPLE DEVICE FOR EMULSIFICATION OF VIRUS PREPARATIONS WITH FREUND ADJUVANT

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The use of the Freund adjuvant to obtain high titered antisera with many plant viruses was described by Wetter (3) and Moorehead (2) but neither describes methods for emulsification of virus preparations with the adjuvant. A common method consists of placing the virus preparation and the adjuvant in a beaker and drawing and expelling them with a syringe until a suitable emulsion is obtained. Desjardins and Wallace (1) employed a vibrator-type mechanical shaker to obtain an emulsion. The present communication describes a simple method for emulsification employing a common laboratory stirrer. This device has been used in most serological work at this laboratory.

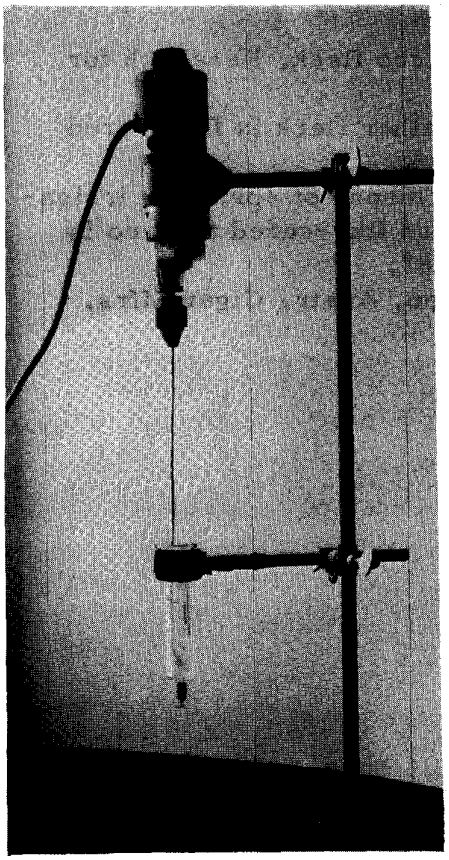

Fig. 1. Apparatus for emulsification of virus preparations with Freund adjuvant (see text for description).

A flexible shaft consisting of the handle of a test-tube brush was inserted into a piece of 4 mm-diameter, tygon tubing. The end of the tubing was sealed by heating under a low flame and pinching it with forceps. The shaft was inserted into a common laboratory stirrer, the end of shaft bent slightly, and inserted into a syringe (Fig. 1). Another short piece of tygon tubing was sealed in the same manner and placed over the tip of the syringe. The Freund adjuvant was placed in the syringe and the stirrer started. The adjuvant whirled up the sides of the syringe through the action of the shaft. The virus prepared was added so that it ran slowly down the side of the syringe while the stirrer was in operation. An emulsion formed immediately upon addition of the virus preparation. but the emulsion was stirred for approximately three minutes. After stirring was completed the shaft was removed and emulsion clinging to it was wiped off with the finger and placed in the syringe. The plunger was placed in the syringe and the syringe inverted. The tygon tip was replaced with a needle and the syringe plunger pushed in to expel any excess air. Animals were injected directly with the same syringe to avoid handling the emulsion. The size of

Publication No. 66, Research Laboratory, Research Branch, Canada Department of Agriculture, Vineland Station, Ontario, Canada.

syringe employed depended upon quantities of virus preparation available; generally a 10 ml-syringe was used with 1 cc of virus preparation,

The emulsions produced with this device are extremely stable and have been kept in the refrigerator for four weeks without visible signs of breaking. Some advantages are: use of common laboratory articles! its speed and the avoidance of excessive handling af emulsions,

Literature Cited

(1) DESJARDINS, P.R. and J. M. WALLACE, 1962, Serological investigations involving the infectious variegation strain of psorosis virus of citrus, Virology 16: 99-100.

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