Clothes	Fabric		Thickness (mm)	Weight (g/m^2)	Density Warp (ends/in)	Density Weft (picks/in)	Moisture permeability ($cc/m^2 \cdot hr$)	Air permeability ($cc/cm^2 \cdot sec$)	Moisture regain (%)	Heat conductance ($W/m^2 \cdot K$)
A	Nylon (wet coating polyurethan)		0.14	86.2	121	a7	282	0.0	2.5	353.6
B	Cotton (Water repellent finish)	Outer	0.20	132.4	121	132	435	5.0	6.2	
		Liner	0.18	85.5	115	97	538	57.5	5.8	
	Outer + Liner						382	4.5		120.4

temperature showed a higher increase in clothing **A.** Chest and **arm** skin temperatures remained much higher in clothing **A.**

The humidity in the clothing micro-climate increased sharply as soon **as** the subjects started sweating. The humidity between the shirt and the protective clothing remained higher in clothing **A** than in clothing B. The humidity between the skin and the shirt immediately reached near saturation, and little difference was observed between clothing **A** and clothing B during walking. During the recovery period, the humidity next to the skin declined slightly in clothing B, indicating the difference between the two kinds of clothing. The humidity sensation was sometimes higher in clothing **A.** Most subjects felt less uncomfortable in clothing B than in clothing **A.**

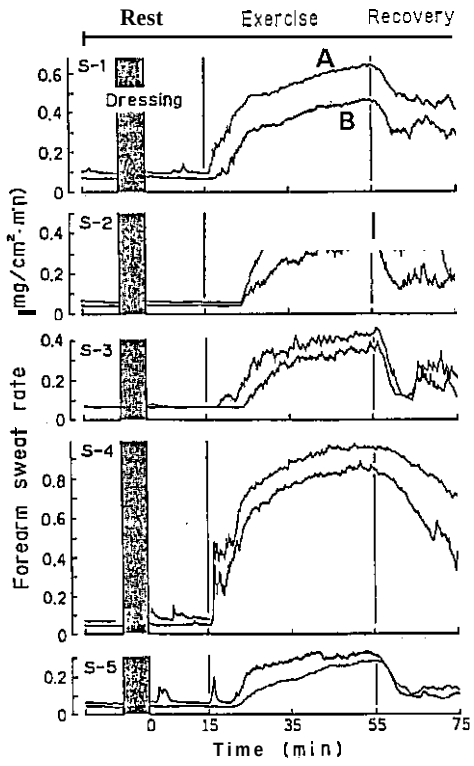

Fig.1. A comparison of forearm sweat rate between clothing A and clothing B in five subjects.

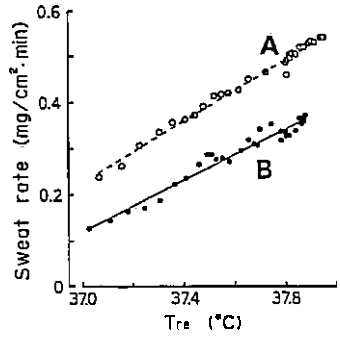

Fig correlation between rectal temperature an :al sweat rate both in clothing A and in **clothing B in a subject.**

CONCLUSIONS

The new types of protective clothing (B) used in this experiment, showed better resistance to an increase in the temperature and humidity in the clothing micro-climate. Subjects also preferred this type of protective clothing (B), compared with the ordinary type **(A).** It seems probable that the humidity in the clothing micro-climate remained lower in clothing B because of the lower sweat rate. No difference was observed in rectal temperature level between clothing **A** and clothing B. In Fig.2, local sweat rate was plotted against rectal temperature. **A** positive correlation between rectal temperature and local sweat rate was observed both in clothing **A** and in clothing B. The slope of the regression line between these two physiological parameters is greater in clothing **A** than in clothing B. In other words, it is suggested that the sweat rate is higher in clothing **A** than in clothing B, when compared at the same rectal temperature. The difference in sweat rate was probably caused by the difference in fabrics used in the protective clothing. The higher **skin temperature** in clothing **A** for chest and arm may also be one of the factors which caused different local sweat rates. The difference in sweat sensitivity might have been caused by the difference in the fabrics used in the protective clothing, but further experimentation is required to draw definite conclusions.

The new types of protective clothing used in this experiment resulted in better wearing comfort. However, results might be different if experiments are conducted under normal working conditions, where subjects wear masks, gloves and boots. New designs should be studied for better protective clothing against pesticide.

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