

The relation between colors and warmth of clothes

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* Motive • Purpose *

What colored clothes give us more warmth?

We try to examine the relation between colors and warmth.

《The cause to make clothes warm》

• The reaction of heat generated

through vapor absorption

... When clothes absorb vapor, they generate heat

⇒ The condensing heat generate.

《Experiment I》

The more vapor clothes absorb, the more condensing heat they generate.

1. Purpose

Examine the amount of condensing heat and the relation between colors and warmth.

2. Methods

- ① Measure the weight of dried clothes.
- ② Put the clothes into bottles with humidity of 100%.
Then make place them under two different conditions : with light or without light.
- ③ Measure the weight of wet clothes.

3. Results

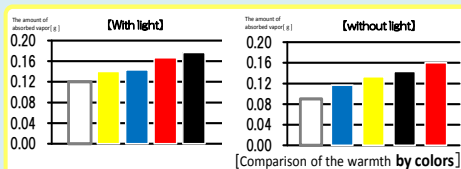


Fig.3

Regardless of light,
Warmth { Least : White
Most : Red, Black

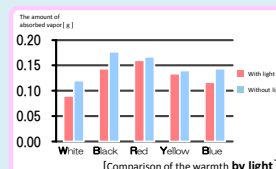


Fig.4

The differences caused by light,
{ Small : Red, Yellow
Large : White, Black, Blue

4. Consideration

- ◎ The differences caused by colors → • The differences of the speed at which clothes absorb vapor
• The differences of structures of clothes
- ◎ The differences caused by light → It's not possible to judge that the light is the cause or not, because there are large and small differences by colors.

《Experiment II》

1. Purpose

- Examine that the speed at which clothes absorb vapor makes a difference of the amount of absorbing vapor by colors.
- Observe the difference made by light.

2. Methods

The same as the experiment I, but different spans (5days, 10days, 15days, 20days, 25days, 30days).

3. Results

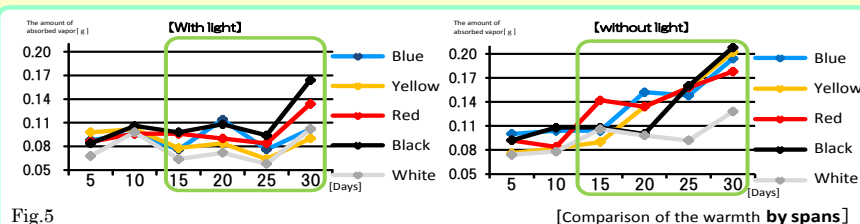


Fig.5

We can see large differences after about 15days.

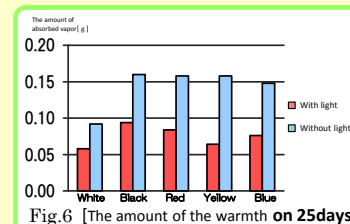


Fig.6 [The amount of the warmth on 25days]

Without light, clothes absorbed more amount of vapor regardless of the colors.

4. Considerations

- ◎ The differences caused by colors → The differences of structure of clothes because we absorb the large difference after about 15 days.
- ◎ The differences caused by light → With light, clothes have more amount of evaporation of water from clothes.

* Conclusion *

- ◎ Black clothes have the largest condensing heat in five colors.
- ◎ Without light, clothes have the much condensing heat.

* Future Problems *

- To do a research on the relation between colors of clothes and structures of clothes.
- To increase the number of times we measure the weight of clothes.
- To make the span we make clothes absorb vapor be shorter than this experiment.