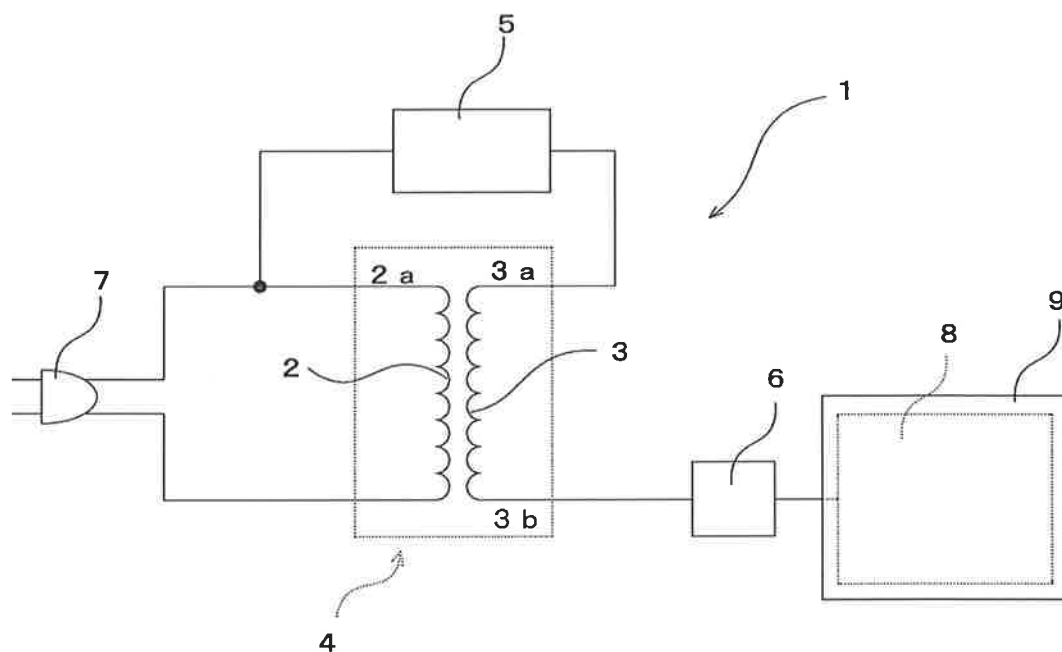


**Fig.1****Fig.2**

temperature in chamber: 5°C  
 humidity in chamber: 65%  
 inner dimension of chamber: 6m\*6m\*3m

| spatial voltage | applied voltage | kind of food                                        | with space potential generator | without space potential generator    |
|-----------------|-----------------|-----------------------------------------------------|--------------------------------|--------------------------------------|
| 1V              | 10V             | 2 tons of beef<br>1 ton of pork<br>1 ton of chicken | dripping was reduced by 95%    | dripping was seen all over the floor |

Fig.3

Ordinary temperature preservation test:  
compared after 10 days

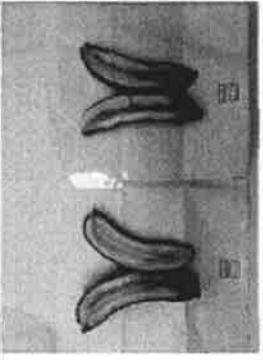
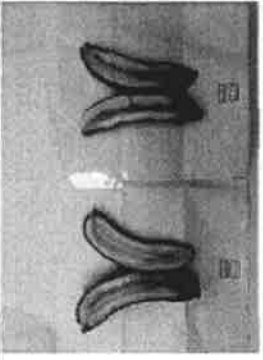
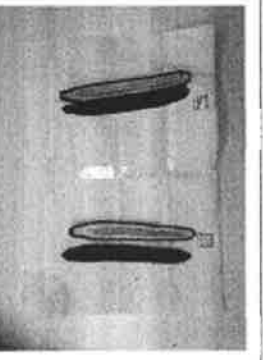
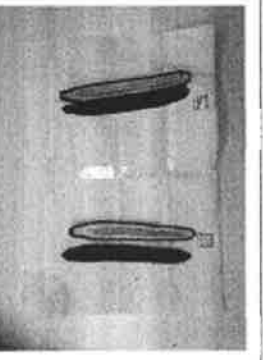
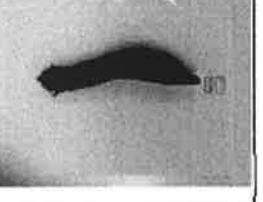
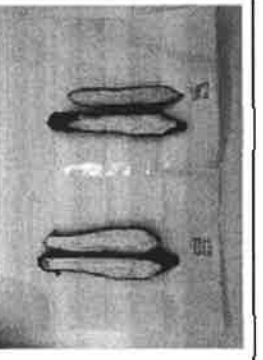
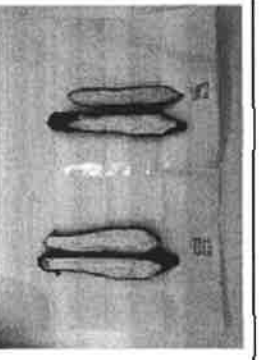
|                    | condition                                                                             |                                                                                       | 5m(d)×6m(w)×<br>2.5m(h)                                                               |                                                                                       | spatial voltage: 20V<br>voltage applied to food<br>: 30V                                                                                                                                                                                                                         |                                                                                      |
|--------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                    |                                                                                       |                                                                                       | temperature: 15°C                                                                     | humidity: 35%                                                                         |                                                                                                                                                                                                                                                                                  |                                                                                      |
|                    | initial state                                                                         |                                                                                       | after 10 days                                                                         |                                                                                       | longitudinal section                                                                                                                                                                                                                                                             |                                                                                      |
|                    | with<br>space potential generator                                                     | without<br>space potential generator                                                  | with<br>space potential generator                                                     | without<br>space potential generator                                                  | with<br>space potential generator                                                                                                                                                                                                                                                | without<br>space potential generator                                                 |
| ①<br>banana        |    |    |    |    |                                                                                                                                                                                                |    |
| ②<br>cucum-<br>ber |   |   |   |   |                                                                                                                                                                                               |   |
| ③<br>egg<br>plant  |  |  |  |  |                                                                                                                                                                                              |  |
|                    |                                                                                       |                                                                                       |                                                                                       |                                                                                       | comparison result                                                                                                                                                                                                                                                                |                                                                                      |
|                    |                                                                                       |                                                                                       |                                                                                       |                                                                                       | with<br>space potential generator<br>-color was changed little<br>-banana fresh was not oxidized<br>-could be eaten even after 10 days<br><br>without<br>space potential generator<br>-color was completely turned brown<br>-banana fresh was oxidized<br>-disposed after 5 days |                                                                                      |
|                    |                                                                                       |                                                                                       |                                                                                       |                                                                                       | with<br>space potential generator<br>-moisture and freshness were kept<br>-could be eaten even after 10 days<br><br>without<br>space potential generator<br>-oxidized and discolored<br>-moisture inside was lost<br>-disposed after 4 days                                      |                                                                                      |
|                    |                                                                                       |                                                                                       |                                                                                       |                                                                                       | with<br>space potential generator<br>-not oxidized although a little dried<br>-could be eaten even after 10 days<br><br>without<br>space potential generator<br>-dried and oxidized<br>-disposed after 5 days                                                                    |                                                                                      |

Fig.4

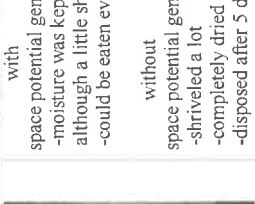
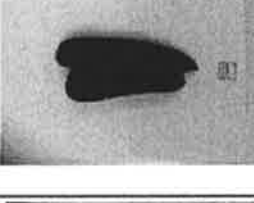
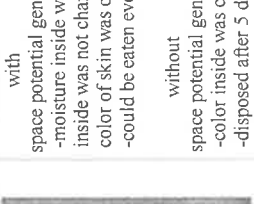
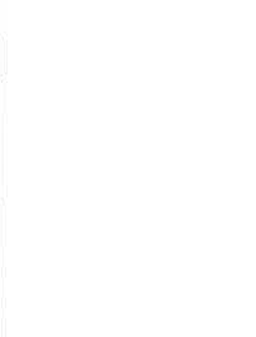
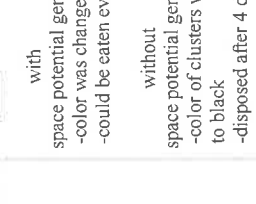
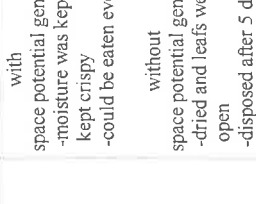
|                        | initial state                                                                         |                                                                                       | after 10 days                                                                         |                                                                                       | longitudinal section                                                                 |                                                                                     | comparison result                                                                                                                                                                                                                                                                 |
|------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | with<br>space potential<br>generator                                                  | without<br>space potential<br>generator                                               | with<br>space potential<br>generator                                                  | without<br>space potential<br>generator                                               | with<br>space potential<br>generator                                                 | without<br>space potential<br>generator                                             |                                                                                                                                                                                                                                                                                   |
| 青椒<br>green pepper     |    |    |    |    |    |    | with<br>space potential generator<br>-moisture was kept inside<br>although a little shriveled<br>-could be eaten even after 10 days<br><br>without<br>space potential generator<br>-shriveled a lot<br>-completely dried<br>-disposed after 5 days                                |
| 胡萝卜<br>carrot          |    |    |    |    |    |    | with<br>space potential generator<br>-moisture inside was kept and color<br>inside was not changed although<br>color of skin was changed<br>-could be eaten even after 10 days<br><br>without<br>space potential generator<br>-color inside was changed<br>-disposed after 5 days |
| 西兰花<br>broccoli        |   |   |   |   |   |   | with<br>space potential generator<br>-color was changed to yellow<br>-could be eaten even after 8 days<br><br>without<br>space potential generator<br>-color of clusters was changed<br>to black<br>-disposed after 4 days                                                        |
| 卷心菜<br>Chinese cabbage |  |  |  |  |  |  | with<br>space potential generator<br>-moisture was kept and leaves were<br>kept crispy<br>-could be eaten even after 10 days<br><br>without<br>space potential generator<br>-dried and leaves were completely<br>open<br>-disposed after 5 days                                   |

Fig.5

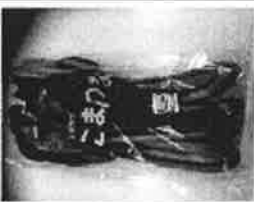
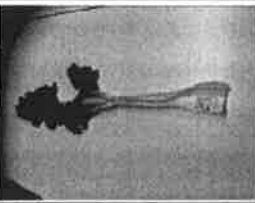
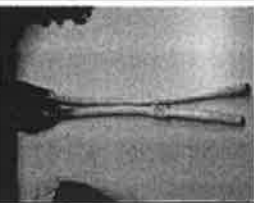
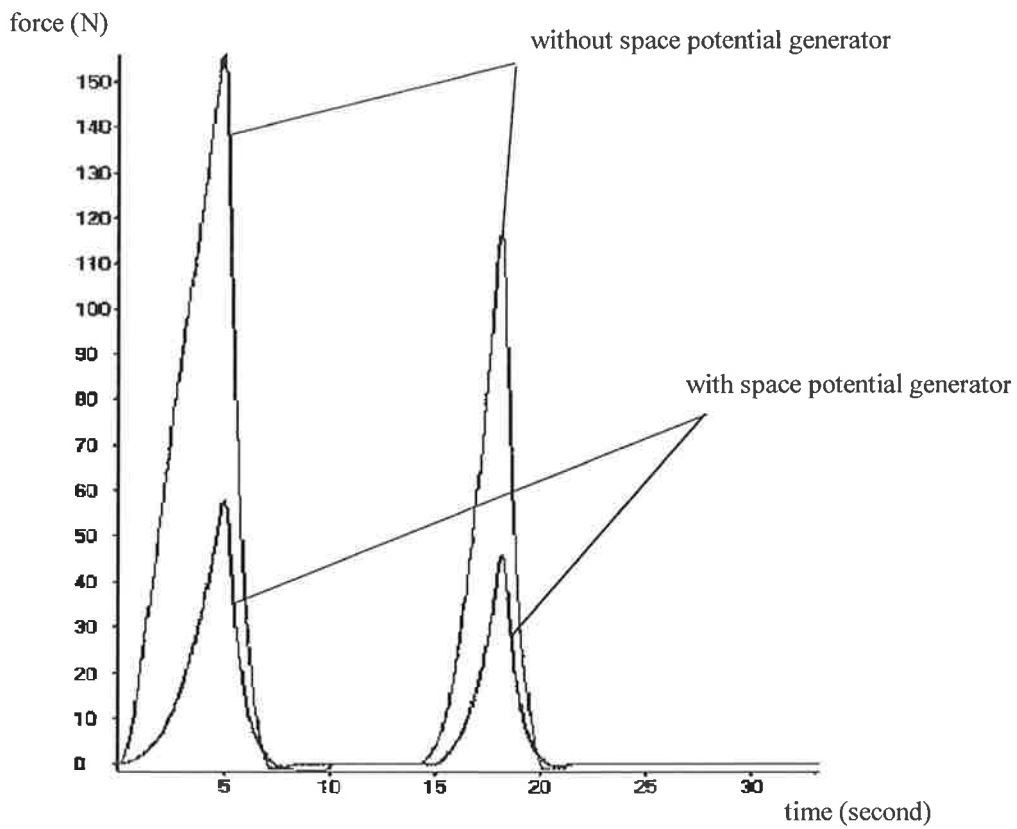
|                             | initial state                                                                         |                                                                                       | after 10 days                                                                         |                                                                                       | longitudinal section                                                               |                                         | comparison result                                                                                                                                                                                                                                              |
|-----------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             | with<br>space potential<br>generator                                                  | without<br>space potential<br>generator                                               | with<br>space potential<br>generator                                                  | without<br>space potential<br>generator                                               | with<br>space potential<br>generator                                               | without<br>space potential<br>generator |                                                                                                                                                                                                                                                                |
| キャベツ<br>cabbage             |    |    |    |    |  |                                         | with<br>space potential generator<br>-core was kept white<br>-could be eaten even after 8 days<br><br>without<br>space potential generator<br>-core became black<br>-disposed after 4 days                                                                     |
| マスタード<br>mustard<br>spinach |    |    |    |    |                                                                                    |                                         | with<br>space potential generator<br>-many parts were kept green and<br>moisture was kept<br>-could be eaten even after 8 days<br><br>without<br>space potential generator<br>-leaves were completely dried and<br>stems were dried<br>-disposed after 4 days  |
| ほう菠菜<br>spinach             |   |   |   |   |                                                                                    |                                         | with<br>space potential generator<br>-many parts were kept green and<br>moisture was kept<br>-could be eaten even after 10 days<br><br>without<br>space potential generator<br>-leaves were completely dried and<br>stems were dried<br>-disposed after 3 days |
| ねぎ<br>scallion              |  |  |  |  |                                                                                    |                                         | with<br>space potential generator<br>-many parts were kept green and<br>leaves were kept fresh<br>-could be eaten even after 10 days<br><br>without<br>space potential generator<br>-shriveled as a whole<br>-disposed after 3 days                            |

Fig.6

|                                                                                                    | initial state                                                                         |                                                                                       | after 10 days                                                                         |                                                                                       | longitudinal section                 |                                         | comparison result                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                    | with<br>space potential<br>generator                                                  | without<br>space potential<br>generator                                               | with<br>space potential<br>generator                                                  | without<br>space potential<br>generator                                               | with<br>space potential<br>generator | without<br>space potential<br>generator |                                                                                                                                                                                                                                                                        |
|  celery         |    |    |    |    |                                      |                                         | with<br>space potential generator<br>-freshness was kept<br>-could be eaten even after 6 days<br><br>without<br>space potential generator<br>-completely dried<br>-disposed after 3 days                                                                               |
|  green<br>onion |    |    |    |    |                                      |                                         | with<br>space potential generator<br>-many parts were kept green and<br>moisture was kept<br>-could be eaten even after 10 days<br><br>without<br>space potential generator<br>-leaves were completely dried and<br>stems were also dried<br>-disposed after 4 days    |
|  lettuce        |   |   |   |   |                                      |                                         | with<br>space potential generator<br>-moisture was kept<br>-could be eaten even after 10 days<br><br>without<br>space potential generator<br>-leaves were completely dried and<br>spoilage began<br>-disposed after 4 days                                             |
|  tomato       |  |  |  |  |                                      |                                         | with<br>space potential generator<br>-moisture was kept and inside<br>was kept fresh<br>-could be eaten even after 12 days<br><br>without<br>space potential generator<br>-moisture was lost although an<br>outer appearance was not changed<br>-disposed after 6 days |

**Fig.7**

| the number of bacteria per 1g           |               |         |             |               |
|-----------------------------------------|---------------|---------|-------------|---------------|
| refrigerator                            | initial state | 3rd day | 5th day     | 7th day       |
| without space potential generator (5°C) | 24,000        | 590,000 | 420,000,000 | 3,100,000,000 |
| with space potential generator (5°C)    | 24,000        | 9,800   | 22,000      | 74,000        |
| with space potential generator (2°C)    | 24,000        | 13,000  | 18,000      | 35,000        |
| with space potential generator (-2°C)   | 24,000        | 9,300   | 16,000      | 32,000        |

**Fig.8**

**Fig.9**



without space potential generator

- chicken: 343.8g
- dripping: 8.9g

with space potential generator

- chicken: 468.5g
- dripping: 1.8g

**Fig.10**

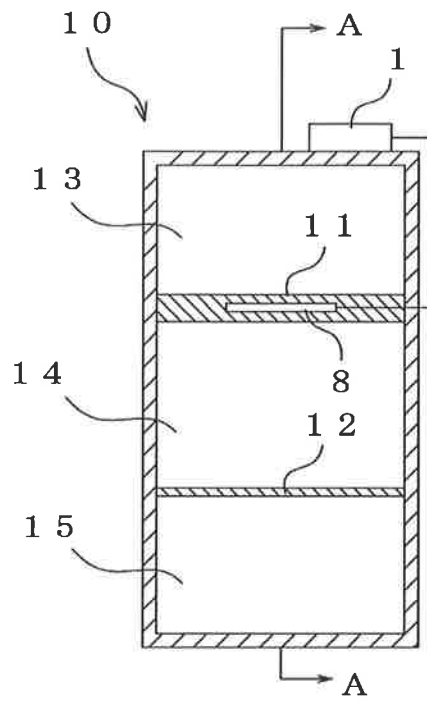
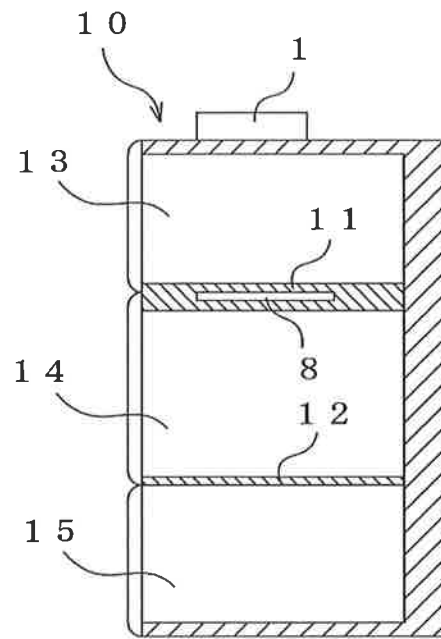
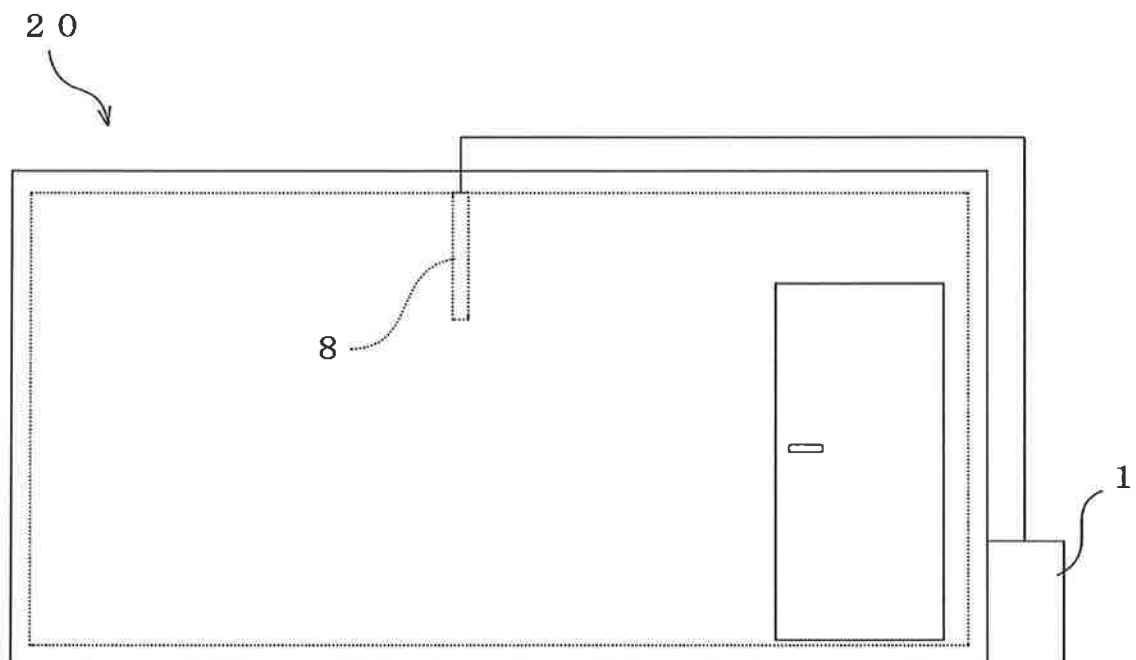


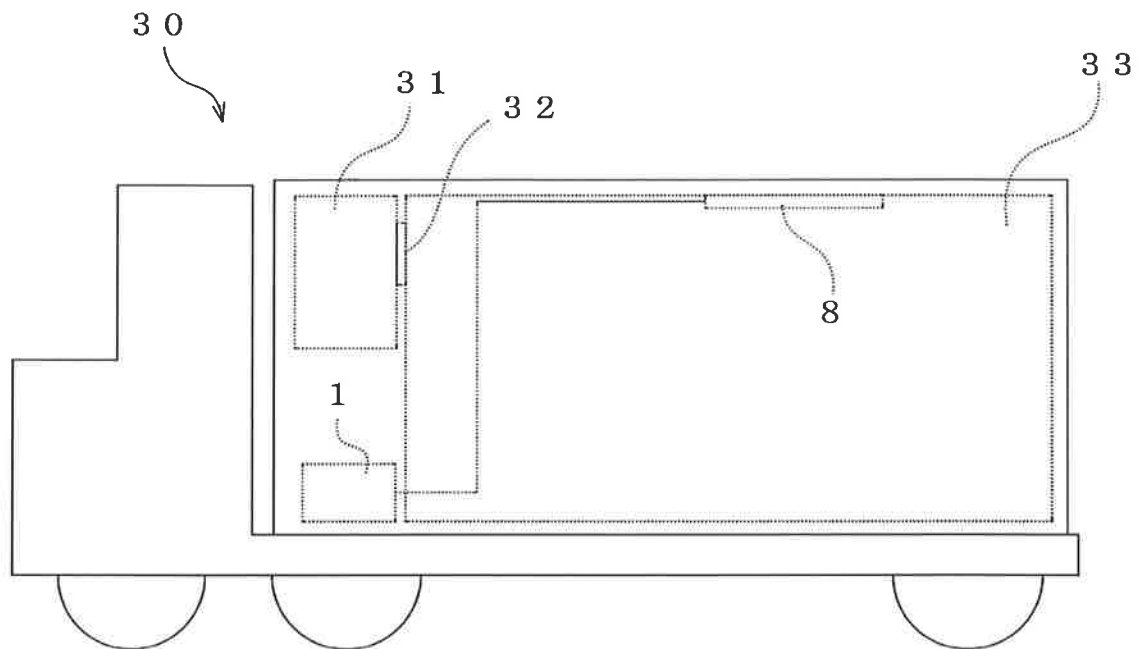
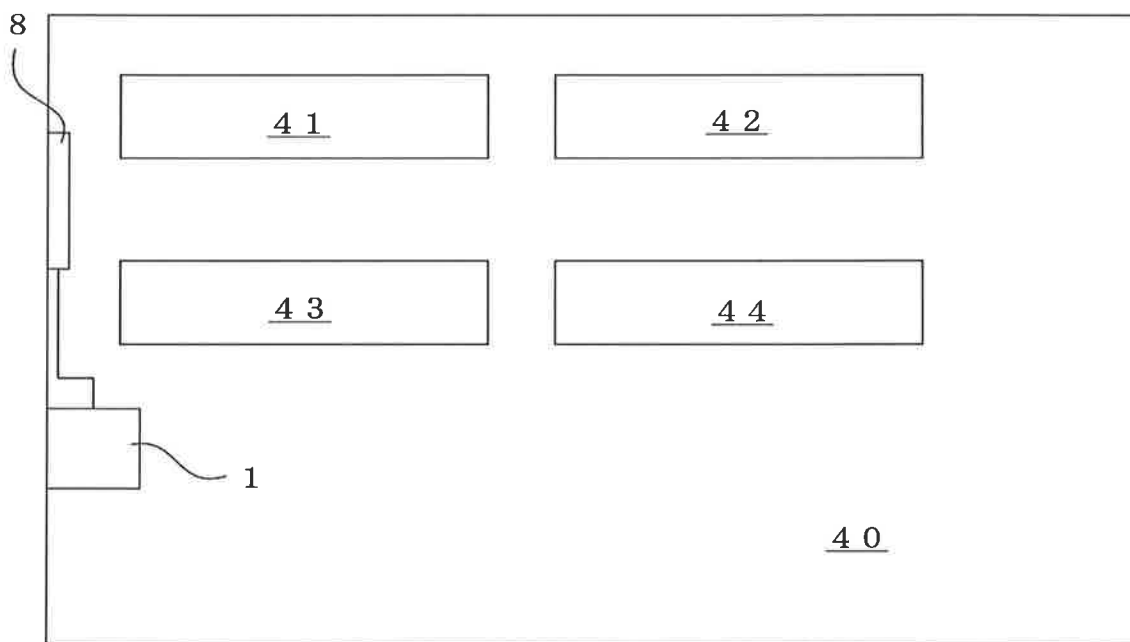
without space potential generator

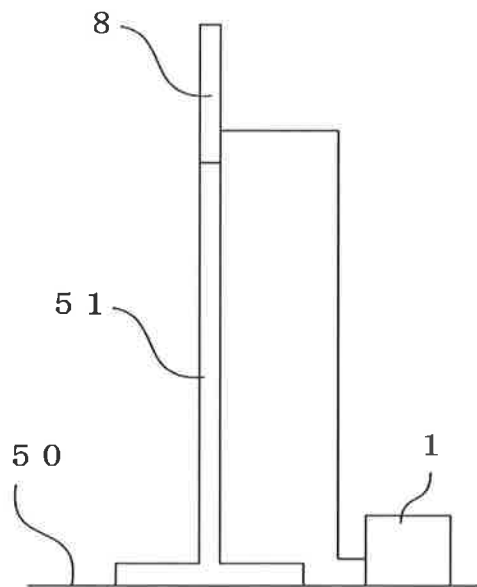
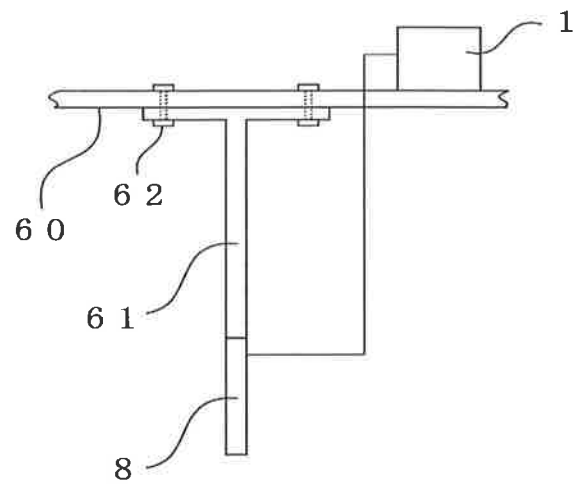
- fish meat: spoiled
  - odor: bad smell
  - dripping: large amount
- could not be eaten

with space potential generator

- fish meat: not spoiled
  - odor: none
  - dripping: little
- could be eaten

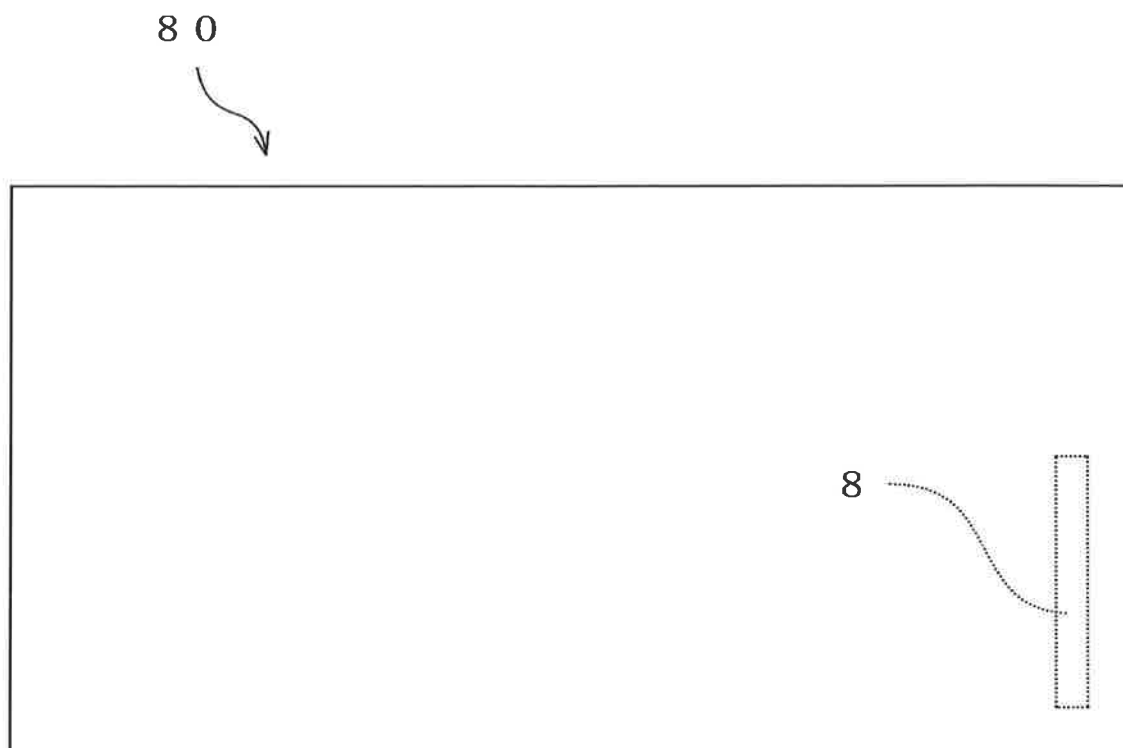
**Fig.11A****Fig.11B****Fig.12**

**Fig.13****Fig.14**

**Fig.15A****Fig.15B****Fig.16**

food: mango

|                                                    | temperature<br>for freezing | texture<br>after thawed | inside state<br>after thawed |
|----------------------------------------------------|-----------------------------|-------------------------|------------------------------|
| quick freezer                                      | -60 °C                      | normal                  | moisture was lost            |
| normal refrigerator +<br>space potential generator | -18 °C                      | good                    | moisture was kept            |

**Fig.17****Fig.18**

| test items                                        | color difference | value L      | value aL     | value bL     |
|---------------------------------------------------|------------------|--------------|--------------|--------------|
| oil before cooking                                | —                | <b>99.44</b> | <b>-5.33</b> | <b>13.62</b> |
| fryer provided with space potential generator     | <b>6.43</b>      | <b>54.75</b> | <b>6.85</b>  | <b>33.62</b> |
| fryer not provided with space potential generator |                  | <b>53.44</b> | <b>13.07</b> | <b>34.57</b> |

The color difference was totally compared between the oil before cooking and the oil after cooking using an L\*a\*b\*color system.

L indicates lightness

+a indicates red, -a indicates green

+b indicates yellow, -b indicates blue

When the color difference value is 6.0 or more, the color difference value is considered to be large.

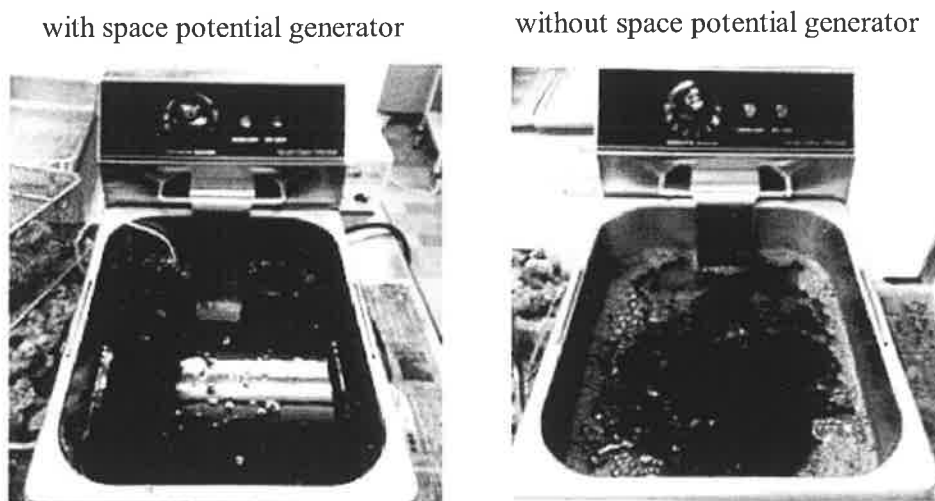
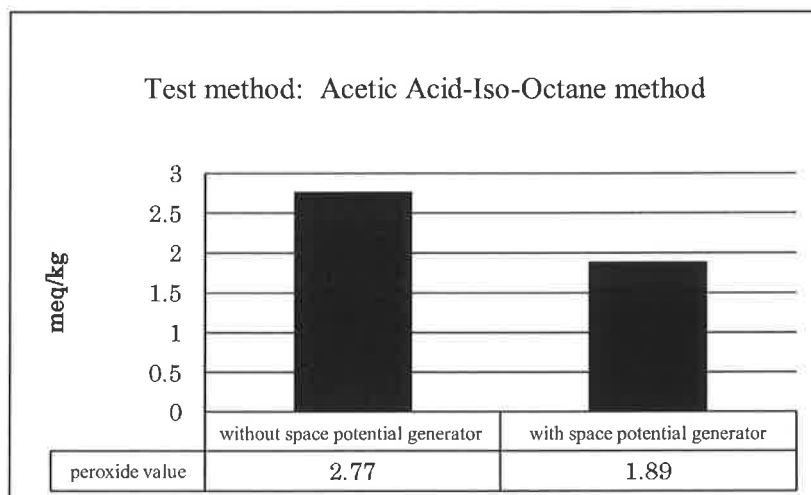
**Fig.19****Fig.20**

Fig.21

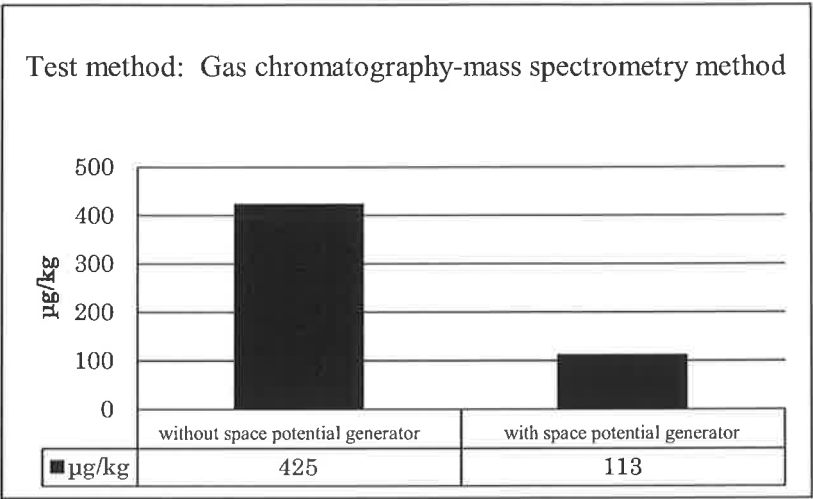


Fig.22

