**Modern technologies of fruit and vegetables storage**

 Everyone wants to eat fresh vegetables and fruit all over the year and buy them in a shop whenever they want. For example, apples are picked up in September, if we let them lay on the table or even in the fridge they will be rotten in a month. But we can enjoy fresh apples all the year. Do you have an idea what is the way to supply the market with apples and other fruit and vegetables all the year round?

Here is the answer:

Vegetables and fruit are stored in cold rooms but they are quiet special, we call them ULO store cold rooms. ULO means: U-ULTRA L-LOW O-OXYGEN

 ULO store room is a cold room with extremely low oxygen levels and slightly higher carbon content than normal. This can only take place in special gas-tight refrigerated storage.

 To achieve the effect you need:

1. Gastight cold rooms
2. A cooling system / installation
3. Equipment that controls N2, O2 and CO2 concentration
4. Control of humidity

Let’s compare the gas proportion from ULO store with an air we breathe...so you can understand the point.

|  |  |
| --- | --- |
| *The air that webreathe contains:*  | *In a ULO cold roomsgas can have:*  |
| 79% nitrogen 20.9% oxygen 0.1% carbon dioxide CO 2 | 97% nitrogen 1% oxygen 2% carbon dioxide CO 2 |

A ULO cold storage room must be completely sealed and the oxygen needs to be removed. Therefore builders use a specially designed sealant.  In all places where oxygen can leak in, this particular sealant is applied to all seams and air gaps.  Even the door must be completely airtight and therefore they use a special gas-tight door that has an inflatable door rubber profile.

**How does it work?**

Oxygen in the air is essential, because oxygen makes everything grow.
This is the same with fruit and vegetables, such as apples.  Apples absorb oxygen to ripe. Very low oxygen (ULO) in a cold room will cause the fruit and vegetables to use less oxygen and therefore ripe slower.  This is achieved through removing oxygen and adding nitrogen. The control of carbon dioxide is important because too much carbon dioxide can damage the product.  The CO2 content is controlled with the help of specially designed controls and equipment.

**Glossary**:

achieve -osiągnąć

add- dodać

apply- zastosować, użyć

breathe- oddychać

carbon dioxide- dwutlenek węgla

compare-porównać

contain- zawierać

content- zawartość

cooling system- system chłodzący

enjoy-cieszyć się, lubić

equipment- sprzęt

essential- konieczny, niezbędny

extreme – ekstremalny, skrajny

fridge-lodówka

gap-szczelina, szpara

gastight, airtight- gazoszczelny, hermetyczny

grow- rosnąć

humidity - wilgotność

inflatable- dmuchany

leak- przeciekać

level- poziom

market-rynek

nitrogen-azot

oxygen-tlen

pick up- zbierać /zrywać

provide-zapewniać

remove- usunąć

ripe- dojrzewać

rotten-zgniły

rubber- guma, gumowy

seal- uszczelnić

sealant- uszczelniacz

seam- złączenie, spoina

slightly-nieznacznie

store- przechowywać, magazynować

supply-dostarczać, zaopatrywać

therefore-dlatego

whenever-kiedykolwiek

*Study the diagram below:*

**Exercises** :

*1.Do you remember the gas levels from ULO store? Match the right answers*

 *In a ULO cold rooms gas can have:*

1% nitrogen
2% oxygen
97% carbon dioxide

*2.True or False*

* Most apples are picked up in November to stay fresh longer.
* ULO store room is a cold room with extremely low oxygen levels.
* A ULO cold storage room must be completely sealed and the oxygen must be removed from inside it.
* It is important to control the level of carbon dioxide because too little carbon dioxide can damage the product.

*3. Fill the gaps in the text*

ABSORB, ACHIEVED, CONTROL, CONTENT, DESIGNED, RIPE, VEGETABLES

This is the same with fruit and ............, such as apples.  Apples ........... oxygen to ripe. Very low oxygen (ULO) in a cold room will cause the fruit and vegetables to use less oxygen and therefore .......... slower.  This is.............through removing oxygen and adding nitrogen. The ............ of carbon dioxide is important because too much carbon dioxide can damage the product.  The CO2 ........... is controlled with the help of specially ............ controls and equipment.

1. *NOW, test your vocabulary:*

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**Across**

4.to like very much

5.to allow liquid or gas to get in or out through a small hole or crack

6.not allowing air to get in or out

9.to take air into your lungs and send it out again through your nose or mouth

11.chemical element, symbol N

12.the opposite of hot

13.food that has decayed (gone bad) and cannot be eaten or used

14.a strong substance that can be stretched and does not allow liquids to pass through it, used for making tires, boots, etc.

 **Down**

1.the amount of water in the air

2.a little, not too much

3.needing to be filled with air or gas before you use it

7.a line where two edges meet, for example the edges of wooden boards

8.a substance that is put onto a surface to stop air, water, etc. from entering or escaping from it

10.a piece of electrical equipment in which food is kept cold so that it stays fresh