Measuring Greenhouse Gases In Old Bottles Of Wine *(ScienceDaily - Dec. 2, 2008)*

1. What is this text about? *(to be answered last)*
2. Where are Groningen (line 6) and Wageningen (line 37)?
3. What is an isotope?
4. What is the interest of measuring the concentration of CO_2 in air?
5. What does "decays" (line 8) mean? Has it something to do with radioactivity here?
6. Where does CO_2 in the atmosphere come from?
7. What consumes CO_2? What is the name of the process involved?
8. Complete the following diagram:

   ....

   fossil fuels ⟶ *CO_2* ⟶ *sugars* ⟶ .....
9. What is the alcohol molecule in wines?
10. What is carbon-14? What is the main type of carbon atoms?
11. What is carbon dating?
12. How fast does carbon-14 disappear in dead material?
13. a. Why doesn't carbon-14 disappear in living things?
    b. Why doesn't carbon-14 disappear in the atmosphere?
14. How do scientists tell the difference between natural CO_2 emissions and CO_2 from fossil fuels?
15. How is CO_2 from fossil fuels recorded in a bottle of wine?
16. What can you conclude if the amount of carbon-14 in the alcohol in the bottle of wine is small?
17. What has been obtained from the carbon-14 tests of wine alcohol?
18. Why is wine the ideal agricultural product for conducting this type of research?
19. What supplementary information is needed to deduce the amount of fossil fuels burned from the amount of fossil fuel CO_2 in the atmosphere at a given place?

http://www.sciencemuseum.org.uk/antenna/wineCO2/

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