

Can we trust the results to a study or an experiment we hear about ?

The answer depends
on.....

how the data
were produced.

Green Potatoes: Harmless or Poisonous?

When you reach into a sack of potatoes only to find they've started turning green, you're faced with the conundrum of whether to throw them away or not.

Some cut their losses and toss the green potatoes, while others remove the green spots and use them anyway.

However, green potatoes are more than just undesirable. They can also be dangerous.

In fact, the green color and bitter taste that potatoes occasionally develop can indicate the presence of a toxin.

Some people wonder whether eating green potatoes can make you sick, or if peeling or boiling them will make them safe to eat.

[Food Chem Toxicol.](#) 1996 May;34(5):439-48.

A study of the toxic hazard that might be associated with the consumption of green potato tops.

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Abstract

Eating green potatoes has reportedly led to poisoning attributed to potato glycoalkaloids (PGA), primarily alpha-solanine and alpha-chaconine. Concentrations of PGA increase during the greening of potatoes but are reportedly much higher in potato tops (leaves). As it is known that members of the UK Bangladeshi community consume potato tops, a study of the toxic hazard that may be associated with the consumption of green potato tops has been carried out. PGA in seven potato varieties were determined by HPLC. Tubers protected from light contained 0.05-0.65 mg/100 g alpha-solanine and 0.3-0.63 mg/100 g alpha-chaconine. Concentrations in leaf samples ranged from 0.64 to 22.6 mg alpha-solanine/100 g and 0.06 to 55.7 mg alpha-chaconine/100 g. Aqueous leaf extracts were cytotoxic to Chinese hamster ovary cells and lysed human, rat and hamster blood cells with no difference in sensitivity among species. Oral administration of potato tops to rats, mice and Syrian hamsters had no adverse effects at the highest practicable dose. A mixture of alpha-solanine and alpha-chaconine (1:1, w/w) given orally at doses of up to 50 mg/kg body weight to hamsters had no effect, but a single ip injection of 25 mg/kg body weight or greater was lethal, with bleeding in the gut. High concentrations of cytotoxic PGA were found in some potato tops, but their effect in laboratory animals was minimal. It is concluded that the consumption of moderate quantities of potato tops (2-5 g/kg body weight/day) is unlikely to represent an acute health hazard to humans.



Figure 1. Yukon Gold whole tubers: left = exposed to light (green) and right=exposed to darkness (yellow.)



Figure 2. Yukon Gold cut tubers: left =

To avoid toxic levels of glycoalkaloids, potato cultivar selection is very important. However, improper postharvest handling conditions are the main cause of toxic levels in potatoes. To keep glycoalkaloid content low, store potatoes at lower temperatures, such as 7°C(45°F), keep potatoes away from light, market in opaque plastics films and paper bags, and rotate frequently on retail displays.

1. On your own (no notes) for 5 minutes
2. Collaborate (no notes yet) for a few min.
3. Then use your notes.



Warm Up - Vocabulary



AP Statistics
Quiz #1: Vocabulary

Name _____

Key

Time limit: 10 minutes

1. The two types of variables are Categorical and quantitative.
2. A census collects data from every individual in the population.
3. Individuals are the objects described by a set of data. Individuals may be peoples, animals, or things.
4. Choosing individuals from the population who are easy to reach results in a convenience survey.
5. Statistics is the art and science of collecting, analyzing, and drawing conclusions from data.

6. A sample is a subset of individuals in the population from which we collect data.
7. Random sampling involves using a chance process to determine which members of a population are included in the sample.
8. The design of a statistical study shows bias if it would consistently underestimate or consistently overestimate the value you want to know.
9. A voluntary response sample consists of people who choose themselves by

9. A voluntary response sample consists of people who choose themselves by responding to a general invitation.

10. A simple random sample (SRS) of size n is chosen in such a way that every group of n individuals in the population has an equal chance to be selected as the sample.

11. To get a stratified random sample, start by classifying the population into groups of similar individuals, called strata. Then choose a separate SRS in each stratum and combine these SRSs to form the sample.

12. FRAPPY stands for Free Response AP Problem, Yeah!

If asked to describe a "Completely Randomized Design", do not incorporate a Random Block Design or Matched Pairs design unless prompted.

It's ok to use a diagram as long as all of the information is included.

≡ HW packet due tomorrow
must write your total.

63

9 assign
@ 7 each

work on
Ch. 4 Review Exercises
is the assignment. (will not have to turn in)

Other Options for practice

- On line Flash Cards on your student site.
- Even numbered problems. Can check these answers on day of test before period 1. →

Pay attention to the video solution answer
for Review problem 4.5b

4.6 is about potatoes.

FRAPPY!

- ✓ you
- ✓ Score yours with Rubric
- ✓ Score both samples and then
compare to scores given.

brain break

Guess How Many Instruments ?

