

In the name of Allah



Case study about acid rains effection

Done by :

Areej Alzakwani

Aseel Aljahdami

Observed and supervised by :

T. Khawla Alshethani

T. Layla Alhabsi

Samad school for basic education(7-12)



Content

Page	Subject
١	Content
٢	Thank
٣	Abstract
٤	problem statement Research questions and hypothesis
٥	sampling and population
٦-٧	research steps
٨	data collection tool and the procedures
٩	data collection
١٣-١٢-١١-١٠	data analysis
١٤	findings and implications
١٥	Conclusion
١٦	Recourses

,

Thank letter

Who doesn't thank people , doesn't thank God

We would like to thank who helps us to accomplish this research

To Our parents who give us support and engorgement

To T. Khawla Alshethni and T. Layla Alhabsi

Who help us to reach the information and resources we need

Thank you all

Abstract

How does the acid rains effect on plants growing ?

Done by :

Aseel Ali Aljahdami

Areej Homoud Alzkwani

obsereved by :

T. Khawla Ahmed Alshethani

T. Layla Mohammed Alhabsi

Samd school for basic education (7-12)

Sultanate of Oman

The acid rain is a rain that has acids. It has harmful and dangerous effect on plants. Most of these rains are created by Nitrogen and Sulfur which came from human activities .

This problem (the acid rains in Almudaibi in Samad Alshan) is conducted to find the effect of acid rains in plants growing. We have used (water , soil and atmosphere protocols). The research questions were : what is the acid rain ? how is created ? what are the reasons ? and effect on plant growing ? are there positive explorations for acid rain?. After data analysis we found out that the acid rains is caused by pollution and smoke. We recommended that people should be taught about this problem and the students also need to be aware. Also activate the intervention to reduce the injury.

Research procedures :

- We held a meeting about how to conduct the research
- We went to agriculture development agency
- We visited Samad Aljadedda site
- We visited some farms in Almaamora and have measurements
- We discussed this phenomenon with farmers
- We have done an experiment
-



The research problem

The acid rains in AlMudaibi in Samad Alshaan and its effect badly on plants growing.

Research questions :

What is the acid rain ? how is it created ? and what are the -١
reasons behind this problem ?

What is the effect of acid rain on plant growing ? -٢

Are there any positive explorations for acid rain ? -٣

Hypothesis

- Since the acid rain is caused by pollution and smokes and it effects badly on trees, we can protect the trees and the environment by advise people to reduce factories smokes and polluter and have recommendations about this topic.
- we predict that if reducing polluter will help regrow the damaged plants of acid rain.

We predict that the effect of acid rain will reduce in winter -
because the lake of rain but in the other hand the effect will
increase in the summer which have more rain.

We predict that the neglecting from farmers when they burn -
their rubbish has a side effect also.



sampling and population

Period

(٢٠١٨/٢/٢٥ _ ٢٠١٧/١٢/٢)



Place

AlMudaibi

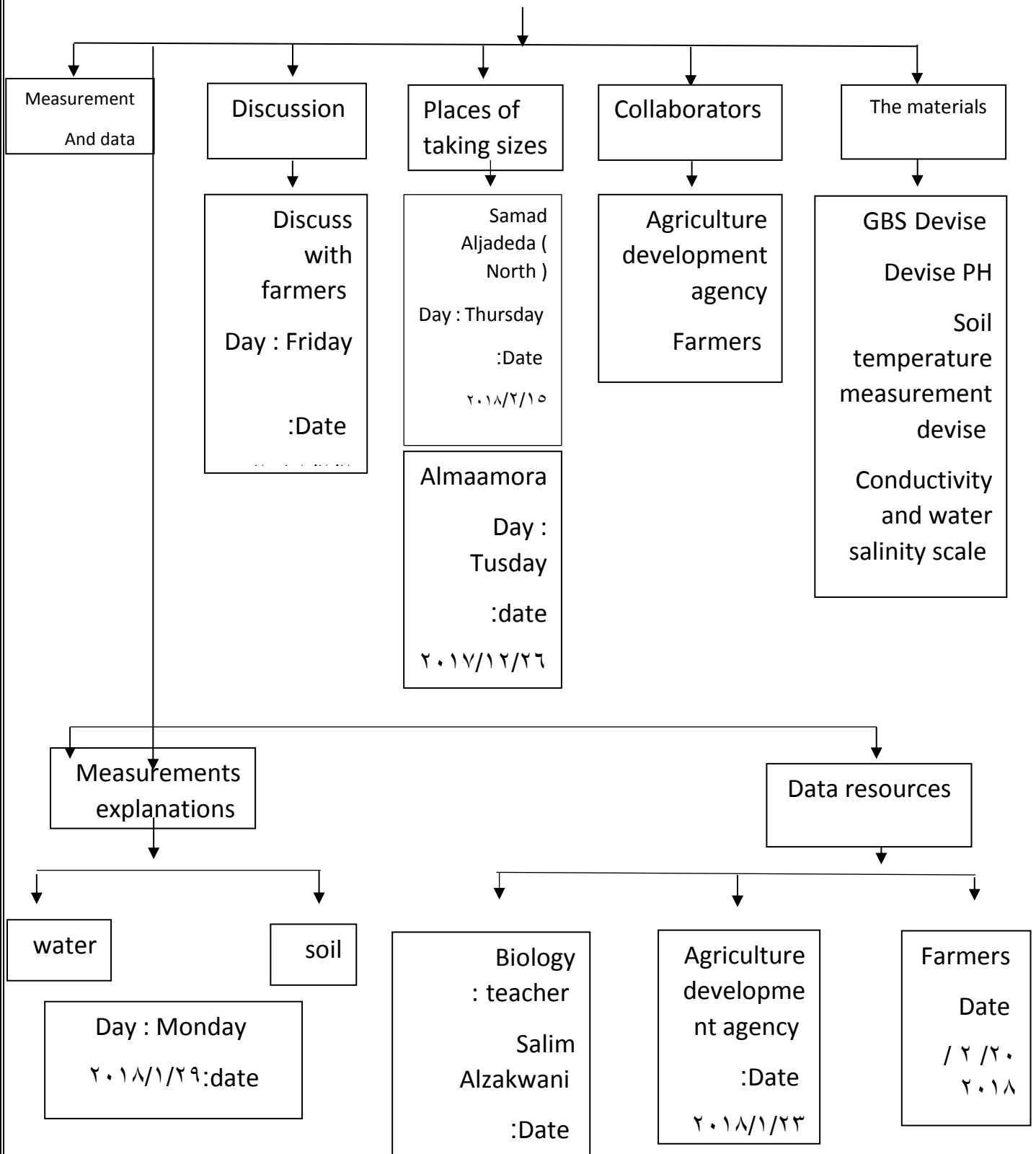
Samad Alshaan

Some farms in
Almaamora and Samad
Aljaeda



Research procedures

Why does the acid rain effect on growing plants ?



Tools and instruments

function	Devise name
find location	GBS devise
major soil and acidity of water	devise PH
water transparency measure	water transparency measure devise
measure temperature of water and atmosphere	thermometer
digging and take samples	shovel
learn soils colours	soil color book
soil temperature measure	soil temperature meter

Protocols

Water protocol -١

Soil protocol -٢

Atmosphere protocol

Research procedures :

- We have held a meeting to discuss the research methodology and research procedures on 2/12/2017
- We went to the agriculture development agency for help on 23/1/2018
- We visited Samad Aljadedda on 10/1/2018 and we took samples by using GLOBE devise
- We visited Almaamora site on 26/12/2017 and we have taken samples and data by using GLOBE devise.
- We met with our supervise teacher to help us un the research and ask about some information and we looked for resources in the learning resources center.
- Finally, we have written a summery for the research and we recorded the data and numbers in the computer.

Case study procedures

The sample is in (Oman , Alsharqia North , Almudaibi)
Samad farms .



Protocols

Water protocol (acidity , agglutinated and temperature) - ١

Soil protocol (temperature and colour) - ٢

Atmosphere protocol(temperature and rains) - ٣

Methodology :

1- Measure the acidity, temperature and agglutinated of water and soil temperature and colour and watch the soil and water after rains.

2- Collect the data and analyze.

-٣ discuss with the teachers

Data collection

Numbers from AlMaamora village

third month		second month		first month		
٨,٤		٨,٩		8.1		acidity of water
10 cm	5 cm	10 cm	5 cm	10	5 cm	temperature of soil
24	23	25	24	22	20	
543		532		571		salinity of water
857		811		871		water conductivity
7.5yr 2.5/3		7.5yr 2.5/3		7.5yr 2.5/3		soil colour

Numbers from Samad AlJadedda

third month		second month		first month		
6.5		6.3		6.7		acidity of water
10	5cm cm	10	5 cm cm	10	5 cm cm	temperature of soil
23	22	24	23	23	22	
790		787		584		salinity of water
784		788		823		water conductivity

10yr 5/3	7.5 2.5/3	10yr 5/3	soil colour
----------	-----------	----------	-------------

۹

Data analysis

Data explanations

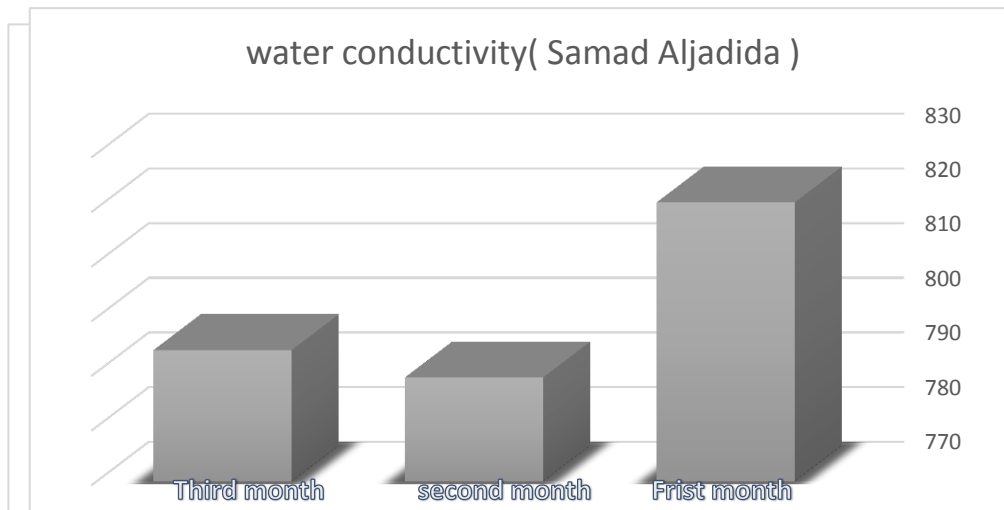
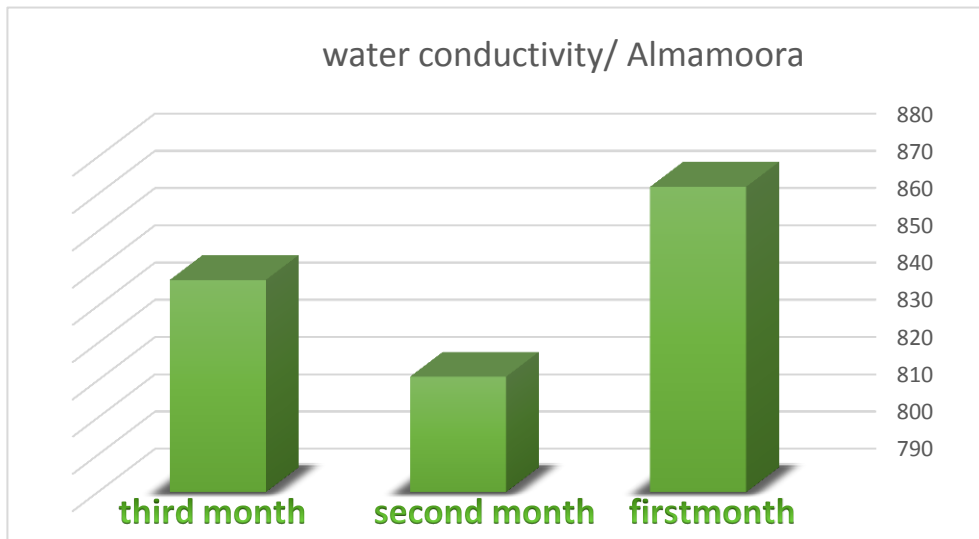
The period that has a lot of pollution increase acid rain -۱
-۲

Acid rain decrease plants growing and cause fading the
colour of the trees.

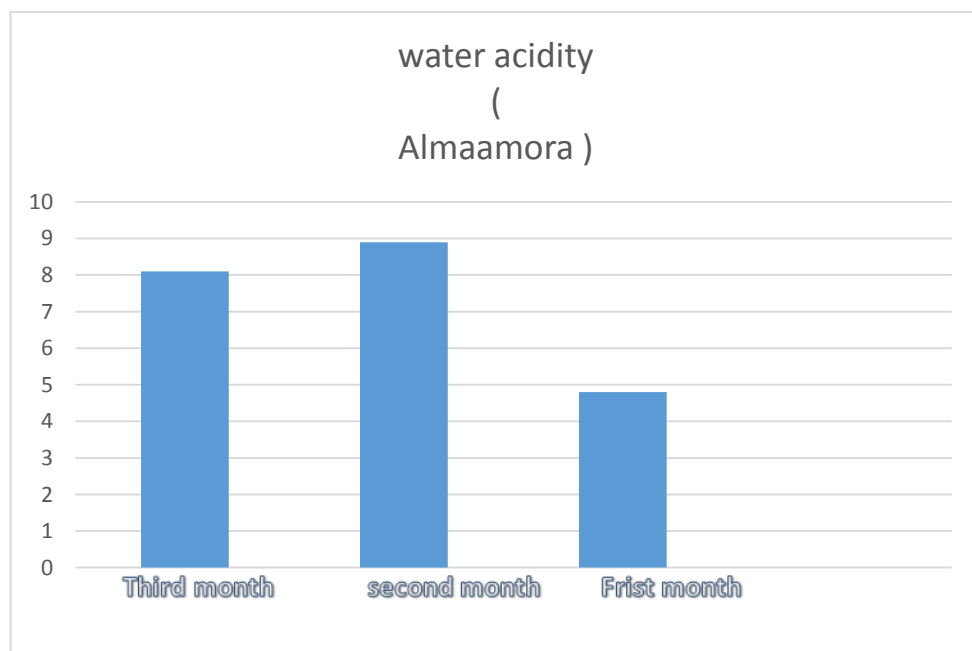
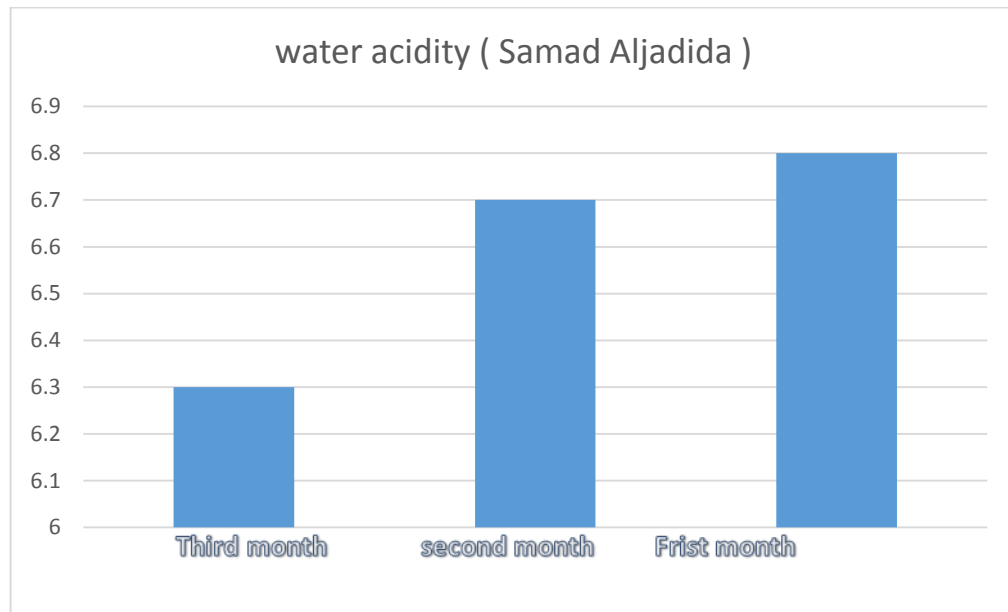
The acid rain make the soil less cohesion and it replaces -۳
the fiber and iron and the useful things into harmful items
that effect badly on plants.



Data analysis



Rates of salinity of water in Almaamora and Samad Aljadeda are close an there is no relationship between salinity of water and acidity



We have notes that the water is acid and this will effect on growing plant

۱۳

۱۴

Findings and results

1-We have found these findings and results from consolation from some teachers, farmers and engineers .Actually most of the farmers have a wide knowledge about this topic.

2-Acid rain affects the plants in a negative way by decreasing the quality of fruits and fading their colors.

3-Acid rain includes harmful materials like sulfur, lead and carbon

4-Most fire and contaminants contributes in increasing the acid rain phenomena.

5-The acid rain affects the soil in negative way by losing its beneficial ingredients and replace it with harmful ingredients subsequently it affect the plants.

6-As we research there is no positive effects for acid rains.

Recommendations

1-We recommend ministry of agriculture and fish wealth to work in avoid the causes of this phenomena

2-we recommend the legal Authorities to impose strict laws for the farmers who contribute in environment pollution.

3-we recommend the schools to aware students .

Conclusion

All praise to Allah , we as GLOBE students in Samad school for basic education (7-12) have done the research. The research was about how the acid rain effect on growing plants in Samad Alshaan. We hope from the government to apply this research in reality so it will not increase more. We have lots of benefits from this research .

On the other hand we faced some challenges and we could over them .

Recourses

- Previous researches such as (Dubas palms in Samad -١
Alshaan / Almudaibi)
Ahmed Abdulakarem Salama (environment protection -٢
low . p342)
Lutf Allah Qaree (Acid rain , p15) -٣

Note : the resources are not documented correctly because lake of
information about them .