



**In the name of Allah, the Most Merciful, the
Most Compassionate**

Abstract

Relative humidity is mainly responsible for the formation of clouds. This study examines the relationship between humidity and clouds and gives approximate results so that the person can determine the proportion of moisture by observing the clouds formed in the atmosphere. The focus of our question was how to determine the value of moisture by observing the clouds formed in the atmosphere.

We assumed that there was a relationship between the formed clouds and relative humidity values. We used the Hygrometer during the month of February and the beginning of March 2019 and at the end of January and end February 2020. We observed the difference in the shapes of the clouds by the difference in the relative humidity value.

We reached the following conclusions:

1. When clouds form low clouds, relative humidity values range from 66% to 57%
2. When clouds form clouds, the relative humidity values range from 40% -45%
3. When clouds are formed from medium clouds, relative humidity ranges from 49% to 54%
4. When the sky is clear, the relative humidity values range from 16% to 37%.
5. When fog is formed, the relative humidity values range between 67% -70%

Rersearch Title

extrapolating for the relative
humidity values through
watching the formed clouds

Researchers Data

Students' Names:

Rw'a Ahmad Alzahrani Mi'ad Mohammad Alzahrani

City:

Saudi Arabia (Al Baha)

School:

Asma' bint Al Numan Complex in Al Jaoufa'

Supervisors:

Khari Ali Saeed AL Zahrani

Huda Atiyeh AL Zahrani

Year 2020

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Limits of Research

The research was conducted in Al-Jawfa village, in Al-Baha area, Kingdom of Saudi Arabia At a height: 2326 m, in latitude and longitude:

N: 20°03.435

E: 041°20.855

In cooperation with the Arwa Bint Kriz School in Al-Nasba, which is located in Al-Baha Region, Kingdom of Saudi Arabia At a height: 1970 m, in latitude and longitude:

N: 20°15501

E: 041°27607

During February and the beginning of March of 2019 and the end of January and February 2020

Statement of Problem

Can the relative humidity values be determined in the atmosphere by knowing the type of clouds formed?

Questions and Hypothesis of Research

- Assume that there is a relationship between the clouds created in the atmosphere and relative humidity ratios
- Is there a relationship between the clouds created in the atmosphere and relative humidity ratios?

Significance of Research

This research can contribute to the enrichment of scientific content in relation to determining the relative humidity of the type of clouds formed and highlighting the pilot experiments in this field

It also helps to help researchers, teachers and students determine the relative humidity of the type of clouds formed

Materials

we need to :

- 1 - the device of the hygrometer
2. Cloud type form
3. GPS device

Materials and Method

First, we need a hygrometer to measure relative humidity.

- Steps to measure relative humidity:

1. Operate the hygrometer.
2. The current humidity shall be taken from the humidity screen after at least half an hour.
3. Record the reading in the entity form, noting the type of the device.

Materials and Method

Second, we need a GPS device to locate the study GPS operation principle:

We open the GPS device at the same location as the satellite sends low-signal signals (such as radio signals) that cross all transparent barriers such as glass and plastic, and do not cross dark barriers such as buildings, iron and wood. When GPS picks up these signals from three Satellites, it recognizes the longitude and latitude, but if the device picked signals from four satellites, it can calculate the height and speed and times of sunrise and sunset, where we record the longitude, width and height and weave in the data form

Third: We use the cloud form to determine the type of clouds formed in the atmosphere

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Data Summary

Tables and graphs

Type of Cloud Form	Humidity	Date
High (Cumulus)	43%	1/6/1440 AH
		6/2/2019
Clear	37%	2/6/1440 AH
		7/2/2019
High (stratified)	40%	3/6/1440 AH
		8/2/2019
Medium (Cumulus)	54%	4/6/1440 Ah
		9/2/2019
fog	67%	5/6/1440 AH
		10/2/2019
fog	69%	6/6/1440 AH
		11/2/2019

Table of relationship between relative humidity and type of clouds formed

Type of Cloud Form	Humidity	Date
Low (Fractus)	59%	7/6/1440 AH
		12/2/2019
Low (Fractus)	66%	8/6/1440 AH
		13/2/2019
Low (stratified)	66%	9/6/1440 AH
		14/2/2019
Low (stratified)	57%	10/6/1440 Ah
		15/2/2019
Low (Fractus)	60%	11/6/1440 AH
		16/2/2019
fog	68%	12/6/1440 AH
		17/2/2019

Table of relationship between relative humidity and type of clouds formed

Type of Cloud Form	Humidity	Date
Fog	67%	18/2/2019
Average	49%	19/2/2019
High	45%	20/2/2019
Fog	80%	21/2/2019
Fog	70%	22/2/2019
Fog	69%	23/2/2019

Table of relationship between relative humidity and type of clouds formed

Type of Cloud Form	Humidity	Date
Fog	70%	24/2/2019
Fog	68%	25/2/2019
Low (Fractus)	59%	26/2/2019
Clear	37%	27/2/2019
Clear	36%	28/2/2019
High (Fractus)	40%	1/3/2019

Table of relationship between relative humidity and type of clouds formed

Type of Cloud Form	Humidity	Date
High / stratified	43%	2/3/2019
clear	35%	3/3/2019
clear	16%	4/3/2019
clear	29%	5/3/2019
clear	16%	6/3/2019
clear	19%	7/3/2019

Table of relationship between relative humidity and type of clouds formed

Type of Cloud Form	Humidity	Date
clear	16%	26/1/2020
clear	17%	27/1/2020
Fog	70%	28/1/2020
Fog	68%	29/1/2020
Fog	67%	30/1/2020
Fog	70%	31/1/2020

Table of relationship between relative humidity and type of clouds formed

Type of Cloud Form	Humidity	Date
Fog	69%	1/2/2020
Fog	68%	2/2/2020
Fog	70%	3/2/2020
Fog	68%	4/2/2020
Fog	68%	5/2/2020
Fog	70%	6/2/2020

Table of relationship between relative humidity and type of clouds formed

Type of Cloud Form	Humidity	Date
Fog	70%	7/2/2020
Fog	70%	8/2/2020
Fog	68%	9/2/2020
Fog	70%	10/2/2020
Fog	69%	11/2/2020
clear	35%	12/2/2020

Table of relationship between relative humidity and type of clouds formed

Type of Cloud Form	Humidity	Date
clear	20%	13/2/2020
clear	24%	14/2/2020
clear	22%	15/2/2020
clear	22%	16/2/2020
clear	37%	17/2/2020
Fog	67%	18/2/2020

Table of relationship between relative humidity and type of clouds formed

Type of Cloud Form	Humidity	Date
High(cirrocumulus)	45%	19/2/2020
Low(Cumulus)	66%	20/2/2020
Low(Cumulonimbus)	60%	21/2/2020
Low(Stratus)	58%	22/2/2020
clear	18%	23/2/2020
clear	20%	24/2/2020

Table of relationship between relative humidity and type of clouds formed

Chart (a)

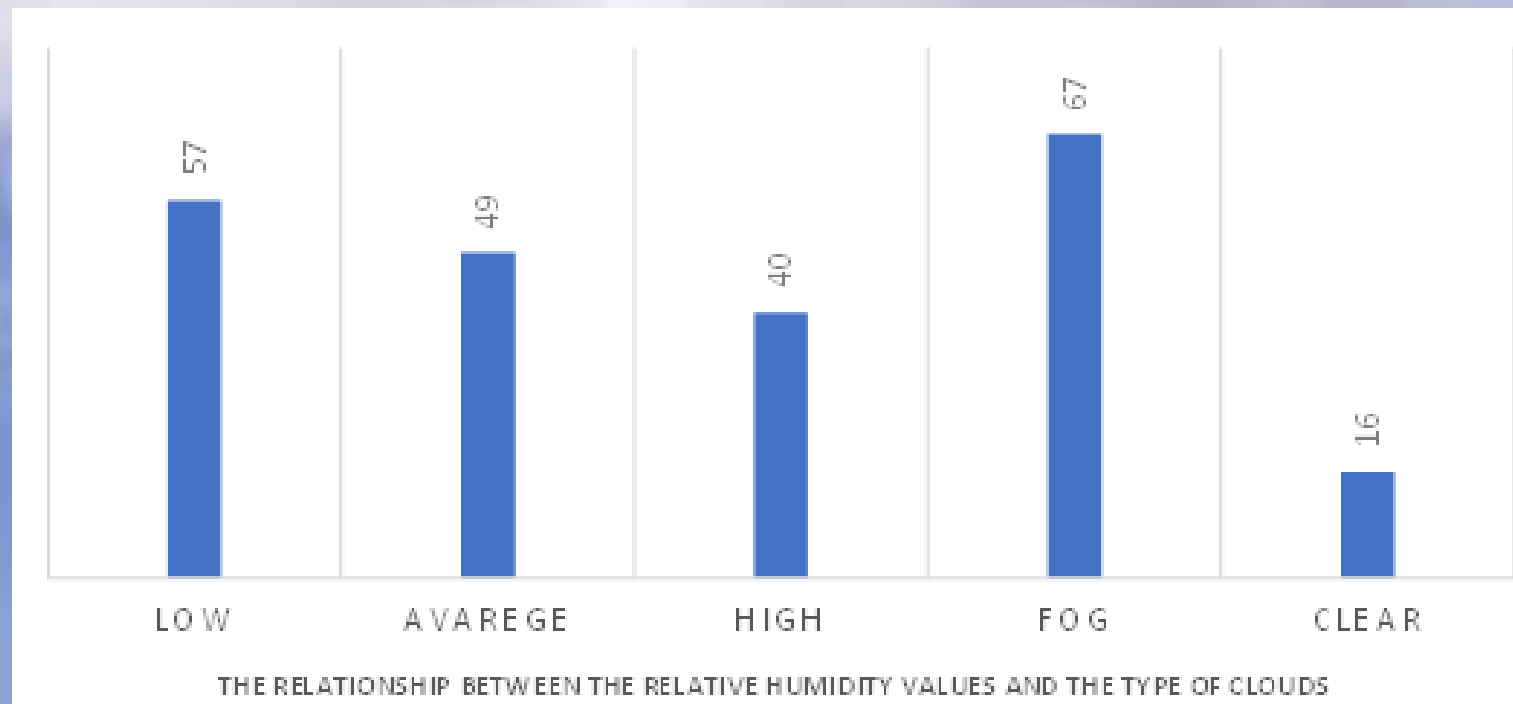


Chart (b)



Data Analysis

(A) Note that the maximum relative humidity values reached 70% and this leads us to the following result:

- 1 - Clouds formed from fog type when the maximum limit of relative humidity values 70%
- 2 - Clouds formed from the type of low clouds when the maximum limit of relative humidity values 66%
- 3 - Clouds formed from the type of clouds medium when the maximum limit of relative humidity values 54%
- 4 - Clouds formed from the type of high clouds when the maximum limit of moisture values 45%
5. The sky is clear when the maximum humidity values are 37%

(B) Note that the minimum values of relative humidity reached 16% and this leads us to the following result:

1. Clouds formed from fog type when minimum relative humidity values are 67%
- 2 - Clouds formed from the type of low clouds when the maximum limit of relative humidity values 57%
- 3 - The clouds formed from the type of clouds medium when we are the values of humidity as high as possible 49%
- 4 - Clouds formed from the type of high clouds when the maximum limit of relative humidity values 40%
5. The sky shall be clear when the upper limit of relative humidity values is 16%

Results

We concluded that there is a relationship between relative humidity and its values and the forms of clouds formed.

- 1 - When the clouds formed from the type of low clouds, the relative humidity values range between 66% -57%
- 2 - When the clouds formed from high clouds, the relative humidity values range between 40% -45%
3. When the clouds formed from medium clouds, the relative humidity values range from 49% to 54%
4. When the sky is clear, the relative humidity values range from 16% to 37%
5. When fog is formed, relative humidity values range between 67% -70%

Findings

Through the final conclusions reached where we created the relationship between the types of clouds formed and relative humidity values, and in the future God willing we will repeat this project to study the relationship between temperatures and clouds generated in the atmosphere.

References

1-Directory of Glop.

D . Mousa, Jamal (1augustus2017). Facts about the fog were. retrieved on 16 March 2019.

<https://www.arabiaweather.com/content/%D8%AD%D9%82%D8%A7%D8%A6%D9%82-%D8%B9%D9%86-%D8%A7%D9%84%D8%B6%D8%A8%D8%A7%D8%A8>

Acknowledgment

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Additional Badges

Explore the careers of STEM	Engineering Solutions	Communication between schools	Communicate with a specialist STEM	Community impact	Cooperat
This project is related to the weather observatory function where it can determine moisture values through the type of clouds formed	In my research, I have determined the possibility of determining the relative humidity values from the observation of the formed clouds. In the future I can try to design a device that takes pictures of the clouds and gives humidity values at the same time	I continued with the school of Arwa bint Kriz Balnsbaa by extrapolating measurements of the relative humidity values and clouds formed for their school and I may participate in other schools in the future if expanded	Collaborated with Globe Coordinator and Program Teacher Both are science majors (Biology - Physics)	We have a geographical area characterized by climatic climates fluctuating so as to change the forms of clouds significantly and beautiful and enable students interested in love to follow the forms of clouds extrapolating the values of relative humidity through the daily observations of clouds formed	Search group