Study soil properties that affect flowering of jasmine trees.

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Abstract

From studying the number of jasmine flowers in perfect and imperfect trees, it was found that perfect trees had more jasmine flowers than imperfect trees, that is, tree 1 had 28 flowers, tree 2 and tree 3 had as many flowers. at 30 and 29 flowers, while in the imperfect plants, plant 1 had 8 flowers, plant 2 and plant 3 had 6 and 7 flowers, respectively, that is, plants that were perfect had the number of jasmine flowers that More than an imperfect tree To measure the salinity of the soil around the jasmine tree at a distance of 50 cm. between the perfect tree and the imperfect tree. that affects the flowering of jasmine trees, it was found that all 3 jasmine trees had soil salinity values that were at That is, the first perfect plant had a pH value of 4.7, the second and third plants had a pH value of 6.6 and 7.2, respectively. Meanwhile, the first immature plant had a pH value of 6.3, the second plant and The third plant had a pH value of 6.4 and 6.5, respectively, within a distance of 100 cm. The first healthy plant had a pH value of 7.0, the second plant and the third plant had a pH value of 7.1 and 7.9, respectively. Meanwhile, the second plant had a pH value of 7.1 and 7.9, respectively. Incomplete plant 1 had a pH value of 6.2, plant 2 and plant 3 had a pH value of 6.6 and 6.6, respectively, indicating that the pH of the soil in the area was not uniform and some areas showed acidity. and the bass comes out This will affect the flowering of the jasmine tree. Measuring the soil moisture value around the jasmine tree at a distance of 50 cm. between the perfect tree and the imperfect tree. affecting the flowering of jasmine trees, it was found that the first perfect tree had a value of 50%, the second and third trees had values of 40% and 50%, respectively, while the first imperfect tree had The value is 20%. The 2nd and 3rd trees have values of 30% and 20% respectively within a distance of 1000 cm. The 1st healthy tree has a value of 40%. The 2nd and 3rd trees have values of 40% and 50%, respectively, while the first imperfect plant had a value of 20%, the second and third plants had values of 30% and 30%, respectively. The moisture value of the tree should not be >50%. Because there will be too much moisture and it shouldn't be < 30% either because the soil will be too dry. It shows that the healthy jasmine trees are within the appropriate humidity level. But immature jasmine trees are at a lower level and therefore are not suitable because they will affect growth and flowering. and measuring the nutrient value of the soil around the jasmine tree at a distance of 50 cm. and a distance of 100 cm. between the perfect tree and the imperfect tree. That affects the flowering of jasmine trees. The results were concluded that all 3 perfect trees had a FERTILITY value of IDEAL, indicating the completeness of nutrients in the soil in that area, while all 3 imperfect trees had a FERTILITY value of TOO. LITTLE, which indicates incomplete nutrition in that area

Introduction

Jasmine is a flower that people in Thailand like to make garlands to pay homage to sacred things and loved ones on important occasions. Jasmine is therefore a flower that has a high demand in the market. But at some time Jasmine flowers are not blooming enough to meet consumer demand. This is a result of the origin of jasmine cultivation having encountered problems with the condition of the soil in the planting plots. In Kalasin Province, there are farmers who grow jasmine flowers for distribution, both large and small. However, due to the soil conditions in the planting area causing the jasmine trees to flower slowly, some trees produced few flowers. It is not enough to meet the needs of consumers. Therefore, the team of organizers has measured the soil factors in the jasmine tree planting area that will affect the flowering of the jasmine tree. By measuring the salinity of the soil pH value - alkalinity value, soil moisture value and the value of nutrients in the soil around the jasmine tree because planting jasmine trees needs to be planted in suitable soil in order for the jasmine tree to produce enough flowers for use. The soil that is suitable for the jasmine tree to grow and produce good products must have the appropriate pH value because acidic or alkaline soil will affect the absorption of minerals by the jasmine tree. In addition, the soil must have appropriate nutrients and moisture that are sufficient to meet the needs of the jasmine tree. and to promote the planting of high-yielding jasmine trees. The team was therefore interested in studying soil factors that affect the flowering of jasmine trees. So that farmers who grow jasmine trees have enough flowering jasmine flowers to meet demand.

Goal of the Project

To study soil properties that affect the flowering of jasmine trees.

Method And Experimental

Experimental Procedure

Part 1 : Measure the number of jasmine flowers.

1.1 Measure the number of 3 mature jasmine trees.

1.2 Measure the number of 3 imperfect jasmine trees.

Part 2 : studied the salinity of the soil around the jasmine tree that affects the flowering of the jasmine tree.

2.1 Measure the salinity of the soil around 3 incomplete jasmine trees using the EC Soil Meter model EC8801, planted into the soil 11 cm. deep.

2.1.1 Measure the salinity of the soil at a distance of 50 cm. from the base of the plant. which was measured at 5 points in the radius of a circle.

2.1.2 Measure the soil salinity at a distance of 100 cm. by measuring from the base of the tree. which measures all 5 points as the radius of a circle.

and repeat the measurement for 2 more trees

2.2 Measure the salinity of the soil around 3 complete jasmine trees using the EC Soil Meter, model EC8801, planted into the soil to a depth of 11 cm.

2.2.1 Measure the salinity of the soil at a distance of 50 cm. from the base of the plant. which was measured at 5 points in the radius of a circle.

2.2.2 Measure the soil salinity at a distance of 100 cm. by measuring from the base of the tree. which measures all 5 points as the radius of a circle.

and repeat the measurement for 2 more trees

Part 3 : studies the pH value of the soil around the jasmine tree that affects the flowering of the jasmine tree.

3.1 Measure the pH of the soil around 3 incomplete jasmine trees using a 4in1 soil survey tool inserted into the soil 15 cm deep.

3.1.1 Soil pH was measured at a distance of 50 cm. from the base of the plant, measured at five points as the radius of the circle.

3.1.2 Soil pH was measured at a distance of 100 cm. from the base of the plant, measured at five points as the radius of the circle.

and repeat the measurement for 2 more trees

3.2 Measure the pH of the soil around 3 complete jasmine trees using the 4in1 Soil survey Intrument, planted into the soil 15 cm deep.

3.2.1 Soil pH was measured at a distance of 50 cm. from the base of the plant, measured at five points as the radius of the circle.

3.2.2 Soil pH was measured at a distance of 100 cm. from the base of the plant, measured at five points as the radius of the circle.

and repeat the measurement for 2 more trees

Part 4 : studies the humidity around the jasmine tree that affects the flowering of the jasmine tree.

4.1 Measure the humidity around 3 incomplete jasmine trees using a moisture meter, model ETP306, inserted into the soil 12 cm. deep.

4.1.1 Measure soil moisture at a distance of 50 cm. from the base of the plant. Measure at 5 points in the radius of a circle.

4.1.2 Measure soil moisture at a distance of 100 cm. by measuring from the base of the tree. which measures all 5 points as the radius of a circle.

and repeat the measurement for 2 more trees

4.2 Measure the humidity around 3 complete jasmine trees using a moisture meter, model ETP306, inserted into the soil 12 cm deep.

4.2.1 Measure soil moisture at a distance of 50 cm. from the base of the plant. Measure at 5 points in the radius of a circle.

4.2.2 Measure soil moisture at a distance of 100 cm. by measuring from the base of the tree. which measures all 5 points as the radius of a circle.

and repeat the measurement for 2 more trees

Part 5 : studies the nutritional value of the soil around the jasmine tree that affects the flowering of the jasmine tree.

5.1 Measure the nutrient value of the soil around 3 incomplete jasmine trees using the 2in1 Analyzer, planted into the soil to a depth of 8 cm.

5.1.1 Measure the nutrient value of the soil at a distance of 50 cm. from the base of the plant. which measures all 5 points as the radius of the circle.

5.1.2 Measure the nutrient value of the soil at a distance of 100 cm. from the base of the plant. which measures all 5 points as the radius of the circle.

and repeat the measurement for 2 more trees

5.2 Measure the nutrient value of the soil around 3 compiete jasmine trees using the 2in1 Analyzer, planted into the soil to a depth of 8 cm.

5.2.1 Measure the nutrient value of the soil at a distance of 50 cm. from the base of the plant. which measures all 5 points as the radius of the circle

5.2.2 Measure soil nutrient values at a distance of 100 cm. from the base of the plant. which measures all 5 points as the radius of the circle.

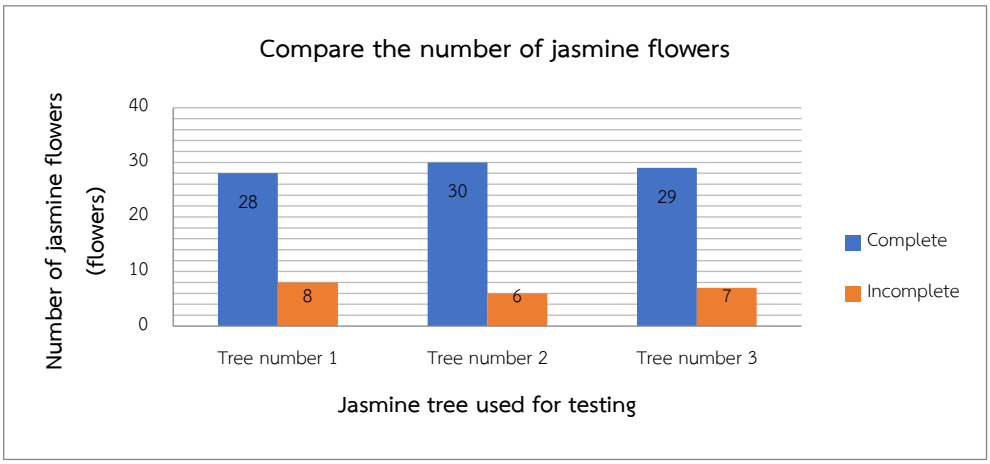
and repeat the measurement for 2 more trees

Results And Discussion

Results

Part 1: Measuring the quantity of jasmine flowers

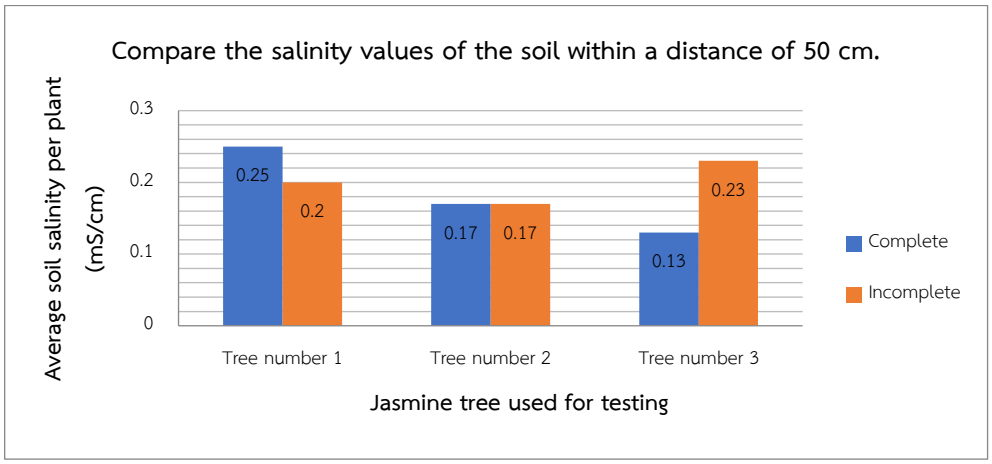
Graph 1 shows a comparison of the number of jasmine flowers in complete and incomplete plants.



From Graph 1, the comparison of the number of jasmine flowers in intact and incomplete plants concludes that a complete jasmine tree There are more jasmine flowers than incomplete plants. The first plant has 28 flowers, while the second and third plants have 30 flowers. 29 flowers, while the incomplete first flower is 8 flowers, the second flower, and the third flower, which are 6 flowers and 7 flowers, respectively. That is to say, a complete tree has more jasmine flowers than an incomplete tree.

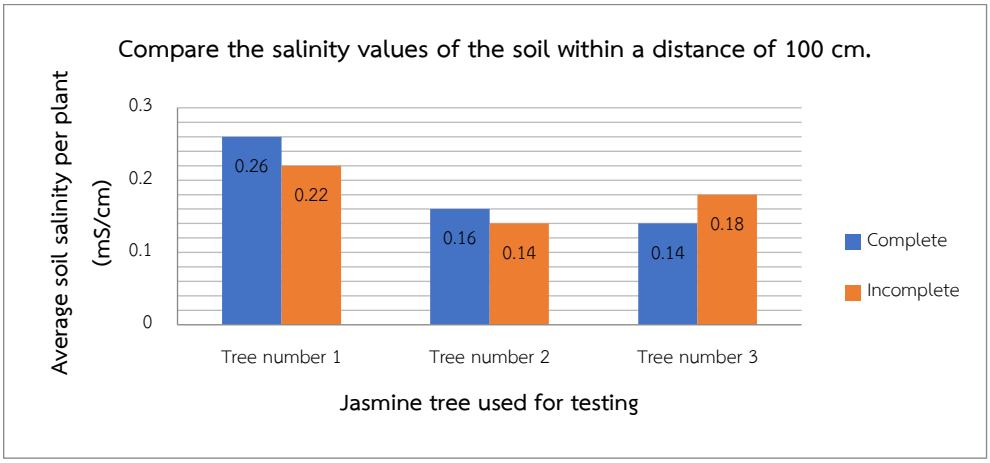
Part 2: Study the Soil Salinity Values Around Jasmine Trees that Affect Jasmine Flower Blossoming

Graph 2 shows a comparison of soil salinity around jasmine flowers within a range of 50 centimeters between intact and incomplete plants that affect their flowering.



From Graph 2, the results of comparing the salinity values of the soil around the jasmine tree in the range of 50 cm. Between the perfect tree and the imperfect tree That affects the flowering of jasmine trees. The results can be concluded that all 3 jasmine trees have a soil salinity value of <2 mS/cm, meaning they have no effect on the growth of plants. The first complete tree has a salinity value of 0.25 mS/The second and third cm plants had soil salinity values of 0.17 mS/cm and 0.13 mS/cm, respectively, while the first incomplete plant had soil salinity values of 0.2 mS/cm, the second plant and the third plant had soil salinity values of 0.17 mS/cm and 0.23 mS/cm in order, that is, the salinity of the soil in this area has appropriate salinity conditions

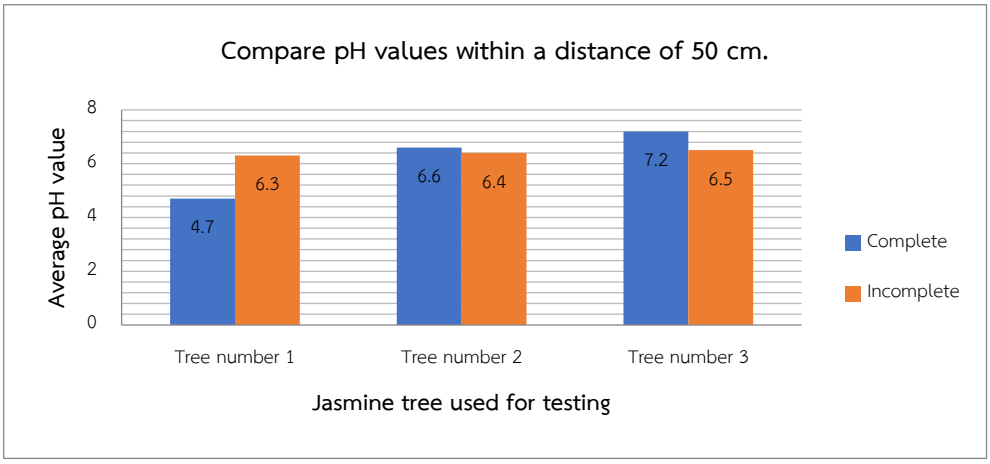
Graph 3 shows a comparison of soil salinity around jasmine flowers within a range of 100 centimeters between intact and incomplete plants that affect their flowering.



From Graph 3, the results of comparing the salinity values of the soil around the jasmine tree in the range of 100 cm. Between the perfect tree and the imperfect tree That affects the flowering of jasmine trees. The results can be concluded that all 3 jasmine trees have a soil salinity value of <2 mS/cm, meaning they have no effect on the growth of plants. The first complete tree has a salinity value of 0.26 mS/The second and third cm plants had soil salinity values of 0.16 mS/cm and 0.14 mS/cm, respectively, while the first incomplete plant had soil salinity values of 0.22 mS/cm, the second plant and the third plant had soil salinity values of 0.14 mS/cm and 0.18 mS/cm in order, that is, the salinity of the soil in this area has appropriate salinity conditions

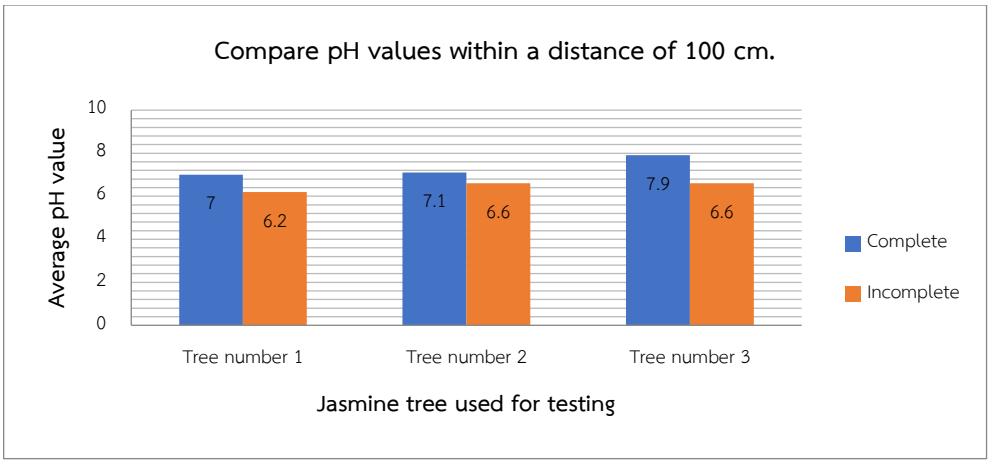
Part 3: Study the pH value of the soil around jasmine flowers and its impact on the flowering of jasmine flowers

Graph 4 shows a comparison of soil pH values within a 50 centimeter range between intact and incomplete plants that affect the flowering of jasmine flowers.



From Graph 4: Comparing the pH values of the soil around jasmine flowers within a range of 50 centimeters between intact and incomplete trees that affect their flowering. In summary, the pH value of the soil in the region is variable, which can affect the flowering of jasmine flowers. The pH value of the first intact tree is The pH values of the second and third trees in 4.7 are 6.6 and 7.2, respectively, while the pH values of the first incomplete tree are 6.3. The second and third values are 6.4 and 6.5, respectively. Display the soil acidity and alkalinity in uneven areas, which will affect the germination of jasmine trees.

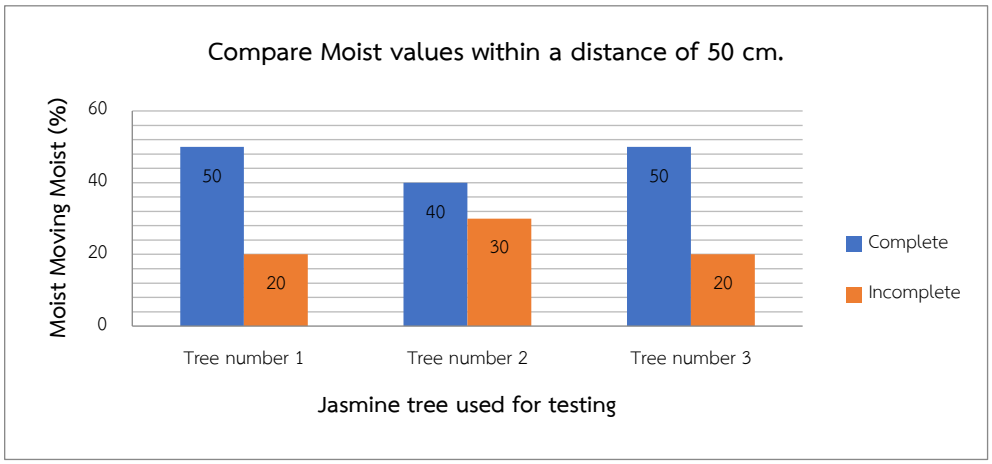
Graph 5 shows a comparison of soil pH values around jasmine flowers within a range of 100 centimeters between intact and incomplete plants that affect their flowering.



From Graph 5, the comparison of the pH value of the soil around the jasmine tree within a range of 100 centimeters between intact and incomplete plants will affect the flowering of the jasmine tree. In summary, the pH value of the soil in the region is variable, which can affect the flowering of jasmine flowers. The pH value of the first intact tree is The pH values of the second and third trees at 7.0 are 7.1 and 7.9, respectively, while the pH values of the first incomplete tree are 6.2. The pH values of the second and third trees are 6.6 and 6.6, respectively, representing the acidity and alkalinity of the soil in uneven areas, with some points displaying acidity and alkalinity. This will affect the germination of the jasmine tree.

Part 4: Study the humidity around the jasmine tree that affects the flowering of the jasmine tree

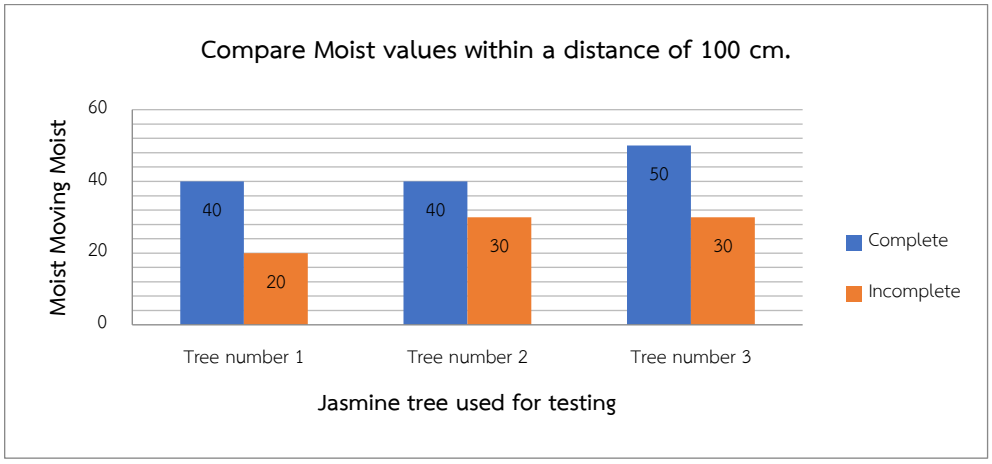
Graph 6 shows the results of comparing the humidity values of the soil around the jasmine tree within a distance of 50 cm. Between the perfect tree and the imperfect tree that affects the flowering of jasmine trees



From Graph 6: Results of comparing the humidity values of the soil around the jasmine tree within a distance of 50 cm. Between the perfect tree and the imperfect tree that affects the flowering of jasmine trees. The results can be concluded that the first complete tree has a value of 50%, the second and third plants have a value of 40% and 50%, respectively, while the first incomplete tree has a value of 20% Trees 2 and 3 have values of 30% and 20%, respectively. The humidity value of the tree should not be >50% because there will be too much humidity and should not be < 30% as well because the soil will be too dry It shows that the jasmine tree

is perfectly within the appropriate humidity level. But incomplete jasmine trees are at a lower level and are therefore not suitable because they will affect the growth and flowering

Graph 7 shows the results of comparing the humidity values of the soil around the jasmine tree within 100 cm. Between the perfect tree and the imperfect tree that affects the flowering of jasmine trees



From Graph 7, the results of comparing the humidity values of the soil around the jasmine tree in the range of 1000 cm. Between the perfect tree and the imperfect tree that affects the flowering of jasmine trees. The results can be concluded that the first complete tree has a value of 40%, the second and third plants have a value of 40% and 50%, respectively, while the first incomplete tree has a value of 20% Trees 2 and 3 have values of 30% and 30%, respectively. The humidity value of the tree should not be >50% because there will be too much humidity and should not be < 30% as well because the soil will be too dry It shows that the jasmine tree is perfectly within the appropriate humidity level. But incomplete jasmine trees are at a lower level and are therefore not suitable because they will affect the growth and flowering

Part 5: Study the nutrient values around jasmine trees that affect the flowering of jasmine trees

Table 1 shows the results of comparing the nutrient values of the soil around the jasmine tree in the range of 50 cm. Between the perfect tree and the imperfect tree that affects the flowering of jasmine trees

Jasmine tree	FERTILITY Value within 50 cm	
	Complete	Incomeplete
Tree number1	IDEAL	TOO LITTLE
Tree number2	IDEAL	TOO LITTLE
Tree number3	IDEAL	TOO LITTLE

From Table 1, comparing the nutrient values of the soil around the jasmine tree in the range of 50 cm. Between the perfect tree and the imperfect tree that affects the flowering of jasmine trees. In conclusion, the results concluded that all 3 perfect trees have a FERTILITY

value of IDEAL, indicating the completeness of the soil nutrients in that area, while all 3 imperfect trees have a FERTILITY value of TOO LITTLE, which indicates incomplete nutrients in that area

Table 2 shows the results of comparing the nutrient values of the soil around the jasmine tree in the range of 100 cm. Between the perfect tree and the imperfect tree that affects the flowering of jasmine trees

Jasmine tree	FERTILITY Value Within 100 cm	
	Complete	Incomplete
Tree number1	IDEAL	TOO LITTLE
Tree number2	IDEAL	TOO LITTLE
Tree number3	IDEAL	TOO LITTLE

From Table 2, the results of comparing the nutrient values of the soil around the jasmine tree are shown in the range of 100 cm. Between the perfect tree and the imperfect tree that affects the flowering of jasmine trees. In conclusion, the results concluded that all 3 perfect trees have a FERTILITY value of IDEAL, indicating the completeness of the soil nutrients in that area, while all 3 imperfect trees have a FERTILITY value of TOO LITTLE, which indicates incomplete nutrients in that area

Conclusion

Study of soil properties that affect the flowering of jasmine trees. By taking 3 complete and incomplete jasmine trees, repeating the experiment 5 times and then finding the average to compare. Between complete and incomplete trees within a distance of 50 cm. And 100 cm range. Therefore, the results can be concluded that A complete jasmine tree will have a higher number of jasmine flowers and an appropriate pH. There is soil moisture. and nutrients in the soil that are more suitable than the tree are incomplete, both within a distance of 50 cm. And 100 cm range. But complete and incomplete trees have salinity in the soil around the jasmine trees that is suitable for planting. That is, the salinity of the soil in that area does not affect the growth or flowering of jasmine trees

Discussion

From an experiment measuring the number of jasmine flowers in complete and incomplete plants, it was found that complete jasmine plants had more jasmine flowers than incomplete plants, that is, the first plant had 28 flowers. The second and third plants had a number of flowers. There are 30 and 29 flowers, while the incomplete plant is the first plant with a number of flowersAt 8 flowers, the 2nd and 3rd plants, the number of flowers is 6 and 7, respectively. That is, trees that are complete have a higher number of jasmine flowers than trees that are incomplete. To measure the salinity of the soil around the jasmine tree in the range of 50 cm. Between the perfect tree and the imperfect tree That affects the flowering of jasmine trees. It was found that all 3 jasmine trees had a soil salinity value of <2 mS/cm, meaning they had no effect on the growth of plants. The first complete tree has a salinity value of 0.25 mS/The second and third cm plants had soil salinity values of 0.17 mS/cm and 0.13 mS/cm, respectively, while the first incomplete plant had soil salinity values of 0.2 mS/cm, the second plant and the third plant had soil salinity values of 0.17 mS/cm and 0.23 mS/cm, respectively, in a range of 100 cm. The first complete plant has a salinity value of 0.26 mS/cm, the second and third plants have a soil salinity value of 0.16 mS/cm and 0.14 mS/cm, respectively, while the first incomplete plant has a soil salinity value of 0.22 mS/The 2nd and 3rd plant cm have soil salinity values of 0.14 mS/cm and 0.18 mS/cm, respectively. That is, the soil salinity in this area has appropriate salinity conditions. Measurement of the pH of the soil around the jasmine tree in the range of 50 cm. Between the perfect tree and the imperfect tree That affects the flowering of jasmine trees. It was found that the pH of the soil in this area is variable, thus affecting the flowering of jasmine trees. That is, the first complete tree has a pH of 4.7, the second tree and the third plant have a pH of 6.6 and 7.2, respectively, whileThe same, the 1st incomplete plant had a pH of 6.3, the 2nd plant and the 3rd plant had a pH of 6.4 and 6.5, respectively, in the range of 100 cm. The first complete plant has a pH of 7.0, the second plant and the third plant have a pH of 7.1 and 7.9, respectively; meanwhile, the first incomplete plant has a pH of 6.2, the second plant and the third plant has a pH of 6.6 and 6.6 In order, it shows that the pH of the soil in the area is not uniform and there are some points showing acidity and base. This will affect the flowering of the jasmine tree. Measuring the humidity of the soil around the jasmine tree within 50 cm. Between the perfect tree and the imperfect tree That affects the flowering of jasmine trees. It was found that the first complete tree had a value of 50%, the second and third trees had values of 40% and 50%, respectively, while the first incomplete tree had a value of 20% The second and third plants were valued at 30% and 20%, respectively, in a range of 1000 cm. The first complete tree has a value of 40%, the second tree and the third tree have values of 40% and 50%, respectively, while the first incomplete tree has a value of 20%, the second tree and the third tree have values of 30% and 30%, respectively, which the humidity value of the tree should not be >50% Because there will be too much humidity and should not be < 30% as well because the soil will be too dry It shows that the jasmine tree is healthy and within the appropriate humidity level. But incomplete jasmine trees are at a lower level, so they are not suitable because they will affect the growth and flowering. and measuring the nutrient value of the soil around the jasmine tree within a distance of 50 cm. And 100 cm range. Between the perfect tree and the imperfect tree that affects the flowering of jasmine trees. In conclusion, the results concluded that all 3 perfect trees have a FERTILITY value of IDEAL, indicating the completeness of the soil nutrients in that area, while all 3 imperfect trees have a FERTILITY value of TOO LITTLE, which indicates incomplete nutrients in that area From the results of the said experiment, it was seen that Various properties of the soil can affect the flowering of jasmine trees

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Appendix

Choose healthy and imperfect jasmine trees

Study the properties of the soil

Incomplete measurement of nutrients in soil

Complete measurement of nutrients in soil

Incomplete measurement of soil moisture

Complete measurement of soil moisture

Incomplete measurement of salinity in soil

Complete measurement of salinity in soil

Incomplete measurement of pH in soil

Complete measurement of pH in soil