

Evaluation of various controlled release fertilizers in nursery plants

The commercial fertilizer program depends on the species in question and its nutrient needs. The application of a dose, site and time of application and an appropriate type of fertilizer ensures successful production of a healthy plant.

OBJECTIVE:

1. Evaluation of plant growth and quality defined as the color of the plant, and the possible phytotoxicity
2. Develop information to give credibility to Multicote fertilizer over the competition currently used in the production

MATERIALS AND METHODS:

Trial design:

Randomized block

Repetitions: five (5)

Number of species studied: one (1)

Number of plants per replication and silver formula = three (3)



Term of study:

Initiation: 08/02/11

Completion: 04/11/11



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Location:
Flat Nursery, Vivers Planas, Púbol, Girona, Spain

species: *Cupresus Macrocarpa*

Type of substrate:
70% composted pine bark + 10% sand + 20% white peat

Container size:

10 liters

Fertilizers used:

No.	source	mark	Name	N-P-K	Release
1	Competition		Competition	18-5-13	12-14 m.
2	Haifa	Multicote	Haifa 4	14-7-14	12 m.
3	Haifa	Multicote	Haifa 5	17-6-14	12 m.

Application rate:

4 kg / cubic meter

Starter fertilizer:

Multimix 14-16-18

Method of application:

The fertilizer was incorporated and manually mixed with the substrate. The volume of each mixing process was sufficient to supply 15 plants. The amount of substrate



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preparation is calculated and mingled for a total of 18 containers (3 containers surplus were mixed to ensure adequate mixing). The process continued until all replicates and treatments were completed. The whole operation of mixing, filling and transplanted was performed on the same day.



Time of transplant:

The plants were transplanted into containers immediately after preparation of the container.

Reference Standards:

Name of each plant with a single label



Maintenance practices:

irrigation:

1. As necessary to maintain active plant growth by producers' decision
2. Depending on the needs of species demanded during the growing season



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Rating:

Person in charge: Ferran Lledo (Commercial Technical Haifa).

Accompanying the process: José Manuel Fontanilla (Marketing Manager)

Evaluation of parameters:

1. Quality: By visual observation of color, plant growth, density and the lack of any apparent injury.
2. Observation of damages, chlorosis, phytotoxicity, and / or change of color, being a reference to an unfavorable response of plants
3. Digital photo sequence at the start and then every 2-3 months until the end of the study.

Detection units:

Measure temperature every two hours by tube provided for this medium



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RESULTS

Observations:

Date: 19/05/2011

Phenological stage: Beginning of vegetative sprouting after the winter shutdown



Rating: Plants fertilized with fertilizer called Haifa 5 has a slight advantage in the beginning of sprouting compared to the Competition. Plants fertilized with Haifa 4 had an excessive sprouting with no quality of it. No damage is observed, chlorosis, phytotoxicity, and / or color change in any of the treatments.

Individual assessment:

Haifa 4: Enhanced sprouting in length, bit width of an outbreak. Sprouting fine.
(denote excess N)

Haifa 5: Good sprouting plants less than paid in Haifa 4, but with greater range and quality bud.

Competition: Good sprouting, plants less than 5 paid in Haifa, with good quality of spaciousness.



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Haifa 5

Haifa 4

Competition

Date: 09/09/2011

Phenological stage: vegetative growing



Rating: Plants fertilized with fertilizer called Haifa 5 present a better shape than the rest of the plants (greater force and more development). Among the plants fertilized with the Competition Haifa 4 and visual differences are not appreciated. No damage is observed, chlorosis, phytotoxicity, and / or color change in any of the treatments.



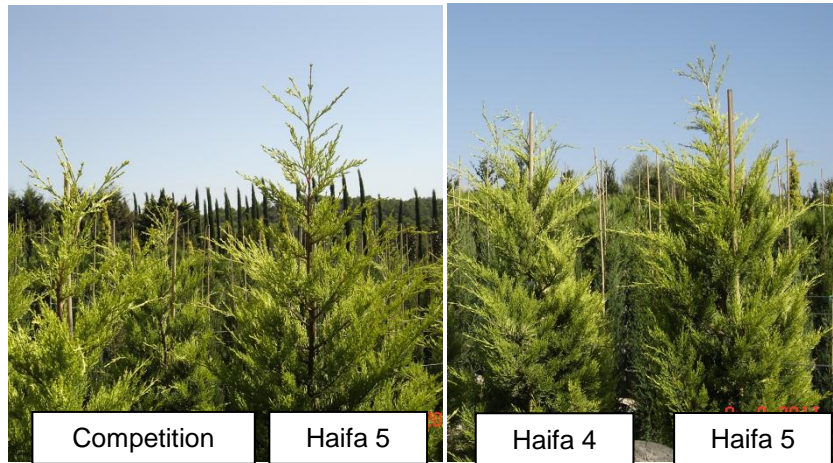
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Date: 09/09/2011

Phenological stage: vegetative growing

Assessment: There is clearly a major development in plants fertilized with fertilizer called Haifa 5, followed by the same level as the plants fertilized with the Competition and Haifa 4. No damage is observed, chlorosis, phytotoxicity, and / or color change in either treatment



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Date: 04/11/2011

Phenological stage: Final cycle (plant sales)

Assessment: There is clearly a major development in plants fertilized with fertilizer called Haifa 5, followed by the same level as the plants fertilized with the Competition and Haifa 4. No damage is observed, chlorosis, phytotoxicity, and / or color change in either treatment



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Detection units:

Measure temperature every two hours by tube provided for this medium



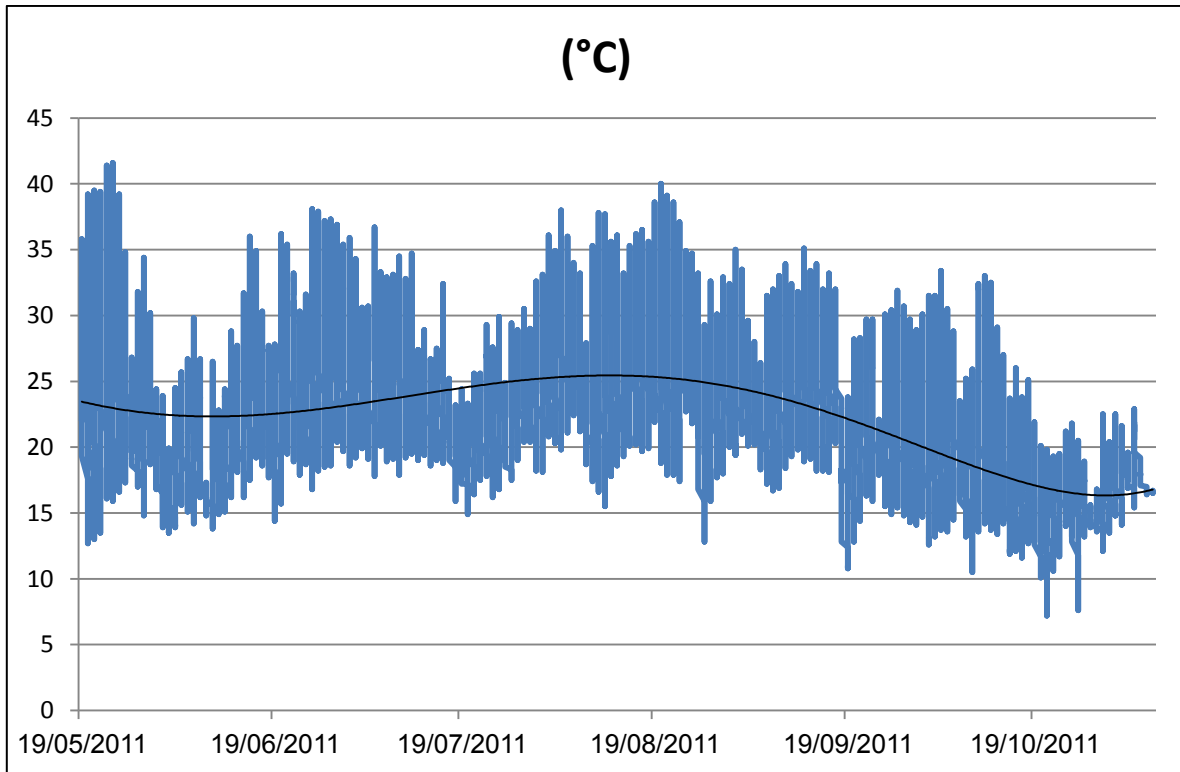
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Conclusions:

Plants fertilized with fertilizer called Haifa 5 has a slight advantage in the beginning of sprouting compared to the Competition. Plants fertilized with excessive Haifa 4 has an initial sprouting with no quality of it.

It is clearly seen further development in plants fertilized with fertilizer called Haifa 5 throughout the development cycle, with a homogeneous growth, followed by the same level as the plants fertilized with the Competition and Haifa.

No damage is observed, chlorosis, phytotoxicity, and / or color change in either treatment during the time the test was developed.

Acknowledgement:

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