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High Altitude Use of Electro Aeration Water Hemp and Cannabis Plants

In the early stages of development, the plants were in a completely controlled environment inside. They started in a 4x4x6 grow tent and they were placed on a table with a semi-reflective surface. Ventilation is done with a 4" incline fan connected to a carbon filter to help prevent dust. The lighting is done by a 1000w light that is on an 18h on and 6h off schedule. The nutrients that are being used are General Hydroponic nutrients that are added to the plants water. The nutrient water in the early stages had a range of 650-800 ppm, EC range of 1.3-1.6, and an average pH of 6.2. The temperature was a consistent 78 degrees with fluctuations of around 5 degrees up or down. Relative Humidity (RH) was 64% with fluctuations of 5 degrees up and down.



We used the Electro Aeration system to aerate the water for 20min. The plants would be in there for a month and a half before they would be moved into a greenhouse.

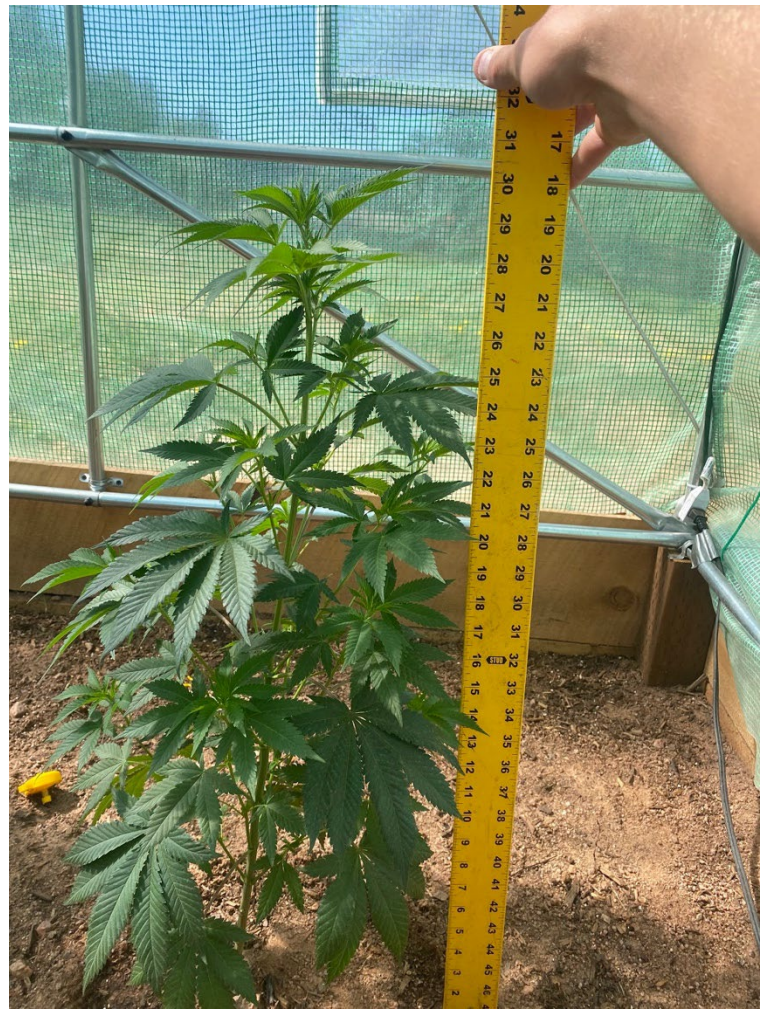
FloraMicro(ml/gal)	4ml
FloraGrow(ml/gal)	6ml
FloraBloom (ml/gal)	3ml
CalMag(ml/gal)	2ml
Floralicious PLus(ml/gal)	1ml
RapidStart(ml/gal)	1ml
Armor Si(ml/gal)	2.5ml
Aloe(ml/gal)	50ml
Microbes(tbsp/gal)	0.25tbsp



Later in vegetative growth the plants had been removed from a completely controlled environment into a greenhouse. The greenhouse is 10x20x7 with 6 windows on each side. The plants were placed in front of each window for easy access to fresh air and ventilation. There were just clamp fans and the wind to keep air moving. The sun was at a 16 on and 8 off light schedule. Nutrients were changed and increased. The Nutrient water had a ppm of 1100-1250 and an average pH of 6.1. The Plants at this point were getting about a quarter of a gallon every day or every other day.

The temp is an average of 78 with fluctuations of 10 degrees up or down. The RH was an average of 55% with fluctuations of 20% up or down. These fluctuations are caused by the dry air and condensation at night. But this didn't stunt the growth as the plants were growing about 6" a week. And Electro Aeration would aerate the water for 20min.

FloraNova Grow (ml/gal)	6ml
CalMag (ml/gal)	3ml
Floralicious Plus (ml/gal)	2ml
RapidStart (ml/gal)	1ml
Armor Si (ml/gal)	2.5ml
Aloe (ml/gal)	50ml
Microbes (tbsp/gal)	0.25tbsp



In Late vegetative growth the plants were between 5' and 6.5'. The 5' plants had started to bend towards the sun so although short the plants were bushy. While the 6.5' plants are a mix between bushy and tall. The plants had also been topped to increase main branches. The ventilation would also be increased by opening the side of the green house. As a result of this the path and the surrounding soil had to be wet or damp to maintain a RH of 50. The temp was mostly the same. The air movement was also increased by adding 2 16" standing fans. The nutrient water didn't change much other than more aloe. Due to their size the amount of water was increased to a half gallon every other day. The light schedule started to change so it was about 14-15h with and 9-10h without light. This means that the plants were going to start to flower. And Electro Aeration would aerate the water for 20min.



FloraNova Grow (ml/gal)	6ml
CalMag (ml/gal)	3ml
Floralicious Plus (ml/gal)	2ml
RapidStart (ml/gal)	1ml
Armor Si (ml/gal)	2.5ml
Aloe (ml/gal)	75ml
Microbes (tbsp/gal)	0.25tbsp



In early to mid-flower the plants have grown to be 5.5'-7' tall and 3.5'-4.5' in diameter. Although at this point vertical and horizontal growth has stopped to start the production of flowers. These flowers are starting to expand and bud up with vigorous growth. This results in the formation of initial trichomes. The light schedule has changed to 13h with and 11 without which will increase flower growth due to the red light in the afternoon.

The nutrients were changed to help promote flowers. The nutrient water was averaging at about ppm of 1100 and a ph of 6.1. The amount of water wasn't changed. The temp stayed the same but humidity would increase by 20-30% at night. Aeration would aerate the water for 20min.

FloraNova bloom (ml/gal)	4.8ml
CalMag (ml/gal)	2.5ml
Floralicious Plus (ml/gal)	2ml
KoolBloom (ml/gal)	1ml
Armor Si (ml/gal)	2.5ml
Aloe (ml/gal)	75ml
Microbes (tbsp/gal)	0.25tbsp

