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Food Science 2021: Evaluation of the effects of temperature, relative humidity, plants' age and time on nectar volume and concentration of Callistemon citrinus L- Kasim Roba - Holeta bee research center under Oromia agricultural research institute

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Abstract

To evaluate the effects of temperature, relative humidity, plants' age and time on nectar volume and concentration of Callistemon citrinus L. in and around Holeta bee research center Methods: Nectar Volume was measured by a graduated capillary pipette or micropipette with time interval of one and half an hour. Nectar concentration was measured by pocket refractometer at time of 7:30 AM, 9:00 AM, 10:30 AM, 12:00 AM, 1:30 PM, 3:00 PM and 4:30 PM -5:00 PM, relative humidity and temperature were measured by Hygrothermometer for these three age categories of Callistemon citrinus L. plants: smallest plants at the age of 7, medium at the age of 13 and oldest plants at the age of 34 in and around Holeta bee research center. Results: Result indicates that there was no effect of relative humidity on nectar volume of youngest plants of Callistemon citrinus L. and also there was no significant effect of temperature on nectar concentration of youngest plants but for medium and oldest plants temperature has an effect and they have highest concentration at temperature of 21C^{o} that was 36.1(w/w at 5:00 Pm and medium plants have 16.1w/w nectar concentration at temperature of 24.7. They have highest volume that was 24.87µl at relative humidity of 43 for medium and oldest has highest volume that was 24.04µ at highest relative humidity of 42%. Conclusions: The concentrations and volume of Callistemon citrinus L. is affected by plants age, time, relative humidity and temperature. For younger plants volume was not affected by relative humidity and also nectar concentration was not affected by temperature, but for medium and oldest ages concentration and volume were highly affected by age of plants, temperature, relative humidity and time and they have high concentration 16.1w/w and 36.1w/w for medium and oldest plants respectively.

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