The objective of this study was to determine the effect of Aloe vera edible coating on Musa acuminata and Vitis vinifera. Fruits were divided into two equal quantity and quality, one was kept as sample and other as control at room temperature of 28±3oC. Aloe vera coating didn’t show any change over Musa acuminata fruits, as there was no difference between control and the sample. But Vitis vinifera coated with gel showed good result of extended shelf life of 5 days. Physiological weight loss (PWL) found to be 19.14% and 20.29% for Musa acuminata sample and control on 7th day respectively. Considerably for Vitis vinifera PLW found to be 26.15% and 43.87% on 15th day. Similary reducing sugar, TSS found to get change with storage days. These derived parameters inferred that the acceptance of Vitis vinifera were extended to 15 days, while Musa acuminata didn’t showed the expected result.

Application of gel over Musa acuminata and Vitis vinifera
Musa acuminata and Vitis vinifera prepared for Aloe vera coating were cleaned with water to remove the external firms and dirt. The gel blended and prepared was filled in a bowl. The selected fruit with individual marking are dipped into the gel and turned over several times to ensure the coating done whole over the fruit. Then the fruit are kept immersed in the bowl for 5 to 10mins for fixing the gel over the fruits. Then the fruits are dried under fan for drying the film coated at ambient temperature of 30oC.

Results and Discussion
The control and sample fruits of Musa acuminata show similar values on all the analysed parameters. But the Vitis vinifera showed the different values for coated and uncoat-ed, showed the increased shelf life of 15d. It shows the Aloe vera effect was good with Vitis vinifera on comparing Musa acuminata.

Materials and Methods
Preparation of Aloe vera gel
Matured leaves of Aloe vera plant were collected and washed with water. Aloe vera gel matrix was then separated from the outer cortex of leave and this colourless hydro parenchyma was grounded in a mixee. The resulting mixture was filtered to remove the fibres. The liquid obtained constituted fresh Aloe vera gel. The gel matrix was pasteurized at 70°C for 45min. The gel was cooled immediately to an ambient temperature and ascorbic acid (1.9 or 2.0 g L⁻¹) was added. Citric acid (4.5 or 4.6 g L⁻¹) was added to maintain the pH at 4. The viscosity of the stabilized Aloe vera gel and its coating efficiency was improved by using 1% pectin. It was further used as coating agent. (Adetunji et al., 2012).

Study on Changes over Musa Acuminate And Vitis Vinifera By Aloe Vera Gel as an Edible Coating

KEYWORDS
Vitis vinifera, Musa acuminata, Aloe vera, edible coating, shelf life.

Suressh kumar. J
M. Tech Scholar, Food processing technology, Annamalai University

S.Niveadhitha
M. Tech Scholar, Food technology, College of food and dairy technology, TANUVAS

ABSTRACT
The present study was carried out to evaluate the effect of Aloe vera gel as a coating material over Musa acuminata and Vitis vinifera. Fruits were divided into two equal quantity and quality, one was kept as sample and other as control at room temperature of 28±3oC. Aloe vera coating didn’t show any change over Musa acuminata fruits, as there was no difference between control and the sample. But Vitis vinifera coated with gel showed good result of extended shelf life of 5 days. Physiological weight loss (PWL) found to be 19.14% and 20.29% for Musa acuminata sample and control on 7th day respectively. Considerably for Vitis vinifera PLW found to be 26.15% and 43.87% on 15th day. Similary reducing sugar, TSS found to get change with storge days. These derived parameters inferred that the acceptance of Vitis vinifera were extended to 15 days, while Musa acuminata didn’t showed the expected result.
era at room temperature of 28±3°C

Weight loss
This quality parameter is quite decisive, since every loss on weight is translated into a financial loss. The results showed that coating of Aloe vera gel in Musa acuminata was similar to each other with minute deviation, this shows similar result with Kittur et al. (2001), while Vitis vinifera shows a drastic reduction of weight loss with storage periods at ambient temperature. The physiological loss in weight (PLW) was shown in fig 1. The final value for weight loss of coated Musa acuminata and Vitis vinifera was 19.14% and 26.15% respectively, while vale for uncoated Musa acuminata and Vitis vinifera was 20.27% and 43.87% respectively. Aloe vera gel on the PLW of Vitis vinifera was significant compared to uncoated Vitis vinifera. These results show beneficial effects of aloe vera gel coating on increasing the shelf life of Vitis vinifera and for Musa acuminata increases the shelf life for one day. These coatings provide a semi permeable barrier to gases and water vapour and therefore, they can reduce respiration and water loss.

Figure 2 Total soluble solids at storage period of 7th and 15th day for Musa acuminata and Vitis vinifera respectively at 28±3°C

Total soluble solids.
It was found that for Vitis vinifera, the °brix value indicates delayed go up in value for sample and rapid in case of control fruits. Fig 2 shows that the value of TSS for coated and uncoated fruits including Musa acuminata and Vitis vinifera. In regard the Musa acuminata fruit seems that the °brix value has raised from 3 °brix to 10 °brix. The rate of conversion is same for control Musa acuminata and sample Musa acuminata. TSS concentration significantly increased during storage for control Vitis vinifera, from levels at initial of 19 °brix to 23.4 °brix. This conversion shows that TSS of Aloe vera coated Vitis vinifera has slow raise up and increases the acceptance of shelf life.

Figure 4 Assessment of sample and control fruits. Musa acuminata at 8th day and Vitis vinifera at 12th day at ambient temperature.

Sensorial Quality.
Panellists evaluated the visual aspect of the fruits and gave the highest scores to Vitis vinifera clusters and Musa acuminata fingers (coated and uncoated) as shown in fig 4. In case of Musa acuminata the enzymatic browning was similar for both the cases, but firmness of each control and sample gets differ. Coated Musa acuminata shows good firmness, but sweetness and taste found to be less similar on comparing the both. Uncoated Musa acuminata shows a lose firmness. In case of Vitis vinifera which became significantly different from day 7 of storage compared to treated clusters. These results indicated severe symptoms of dehydration and shrinkage in control Vitis vinifera after 7 days at ambient temperature and slight moderate effects for those clusters treated with A. Vera gel after 14 days of cold storage. The highest scores after 12 days of storage for berry aspect, firmness, crunchiness, juiciness, and sourness were given to the Aloe-treated berries compared with controls. An inverse tendency was found when sweetness was tasted, because control Vitis vinifera had significantly higher scores. Judges sensed the development of “off-flavours” in Vitis vinifera at 12 days of storage. Thus, for control fruits, of the panellists found bad aroma, whereas for those treated with Aloe, none of the panellists found the occurrence of “off-flavours.”
Figure 5 Rate of conversion of reducing sugars in *Musa acuminata* and *Vitis vinifera* 7th and 15th day of storage at 28±3°C

Reducing sugar
Reducing sugar of a fruit is based on the rate of respiration of such fruits. Ripening also indicates the conversion of starch to sugar. Such starch converted into reducing sugars which impart taste to the fruits. The rate conversion of reducing was shown in fig 5 which shows that sample *Vitis vinifera* reducing sugar conversion rate is slow on comparison with control *Vitis vinifera* fruits. Reducing of *Musa acuminata* shown in fig 5 says that reducing sugar was minimum at initial stage and maximum at ripened stage. Thus the day which attains the maximum of 34.2g/mL for *Vitis vinifera* and 19g/mL for *Musa acuminata* is inferred that slow conversion takes place on comparing with control fruits.

Conclusion
The results that derived above experimentally indicate that there is further scope to develop the Aloe vera edible coating to other perishable fruits. The experiment shows the different values for *Vitis vinifera* with various parameters like PLW, sensory etc. This experiment conclude that shelf life of *Vitis vinifera* can be extended to 15 days at ambient temperature (28±3°C) with coating of Aloe vera gel. But the experimental results found for the coating of *Musa acuminata* sample doesn’t gave the satisfactory result. Further work has to be carried out in *Musa acuminata* for edible coating and extending the shelf life. Almost the result found with *Vitis vinifera* are satisfactory, however further work is required to optimize the coating type.