



March 9, 2013.

Lisa M. Brines, Ph.D.
National List Manager
Standards Division
USDA National Organic Program

MS Brines:

Please find the answers to NOSB Handling Subcommittee questions.
If further information and/or clarification would be needed, do not hesitate to contact me again.

Kind regards,

Luis Monge
Dole Organic Program

Handling Subcommittee questions in blue.
DOLE answers in black.

1. **Plastic Wrapping (Alternative Practice)** – At the last NOSB meeting, there was information verbally presented about an alternative practice that includes wrapping plastic around banana crowns. The HS is interested in more information about this alternative practice, including the following:

First we need to clarify that wrapping the crown of the banana clusters with plastic IS NOT a substitutive practice for GA application. One practice is a complement of the other, not a substitute of the other.

Plastic wrapping will create an anaerobic condition on the surface of the crown avoiding or delaying the development of postharvest fungus (physical barrier).

GA is a growth regulator and will delay the natural ripening process of the fruit.

Plastic wrapping has become an identification item for organic bananas at retail stores.

a. How much more [than gibberellic acid] does this practice cost?

As previously said, both practices cannot be compared as substitutive practices. But in terms of costs, plastic wrapping can cost US\$0.01 per pound of organic bananas and GA application can cost 10 times less than that.

b. How much difference does this practice make to the quantity of bananas reaching the United States and the income of banana farmers?

As presented in the Petition documentation, RIPES represent more than 50% of the quality claims all year around. We have the evidence to believe that by using GA on Postharvest of Organic Bananas, that percentage can be reduced considerably.



During certain times of the year (cold, cloudy and/or rainy season) the organic banana plantations have less functional leaves to feed and allow the growth of the fruit. The organic bananas produced during those times of the year are much more susceptible to premature ripening.

As GA Postharvest application delays the natural ripening process of the fruit, the organic bananas can be harvested at the right time all year around without the risk (or with a much lower risk) of premature ripening during transportation from the country or origin to the market.

Thus the organic banana farmers will increase their income not only for the reduction of quality claims but also for the fact that their fruit can be harvested at the right time all year around with a positive effect on the yields (how many bananas the farmer need to pack to complete a 40 pounds box).

Again, and this is very important to understand correctly... there is no direct relation between GA application postharvest and yield increase. Yield increase is a consequence of being able to harvest the bananas at the right time (also during cold, cloudy and rainy seasons when normally the fruit needs to be harvested at earlier development stages to prevent premature ripening).

c. Is there published research on the use of plastic in this manner?

As far as we know, there is not published research information regarding the use of plastic wrapping of the crowns of the bananas. We have conducted our research projects but the information is proprietary and confidential.

2. **Cultural Practices** – The first NOSB checklist on gibberellic acid requested a review of cultural practices that could enable the bananas to hold up better after harvest. Very little information was received on this subject in the new petition. The HS suggests amending the petition to include additional discussion on any relevant cultural practices that may reduce or eliminate the need for gibberellic acid.

By applying cultural practices on the organic banana farms is precisely how we deal with the situation today. But all of them have a “negative impact” on the grower’s economies. Because the alternative is to harvest the fruit earlier, meaning younger, two or three weeks earlier during those cold, cloudy and/or rainy seasons of the year.

Sometimes the fruit is not ready (it is still too thin) to be harvested and the grower cannot let the fruit for more time on the plant without putting all his fruit in a bigger risk –premature ripening-.

The problems goes even worst because once one single cluster of bananas starts ripening, it produces Ethylene gas provoking the ripening of the rest of the fruit, most of the cases the whole container (20 tons).

If the fruit arrives ripe at the destination, the whole load is rejected and dumped.

When the banana is hanging on the plant, it receives GA naturally produced by the plant preventing the fruit to ripe. Once the fruit is harvested, that GA natural supply is over and the fruit begins its natural ripening process.

There are very few “cultural practices” to stop or delay that natural process. Most of them are currently used as part of the Standard of Procedures in Banana Handling such as:

1. Transport the fruit in low temperature to decrease its cellular respiration and slow down the metabolic processes.
2. Reduce the exposure of the fruit to sources of Ethylene during transportation.