

AN EXPERIMENT WITH VINYL FILM FOR THE PRESERVATION OF AVOCADO BUDWOOD

WILSON POPENOE

Escuela Agricola Panamericana Tegucigalpa, Honduras

For many years we have used sphagnum moss (and occasionally a few other materials) for packing avocado budwood for shipment. Sphagnum is fairly satisfactory, though it requires some experience to have the moisture content just right. This point is quite an obstacle, for we have often received shipments from inexperienced persons who add far too much water to the moss.

Recent shipments made in small pliofilm bags have turned out very satisfactorily. We particularly have in mind shipments we have made from Honduras to Mexico, Florida, and California by air mail. No packing material (sphagnum or other) was used in making these shipments.

We now desire to report a test made of Goodyear Vinyl film (.004 gauge). Through the courtesy of the Goodyear Company, we received at Escuela Agricola Panamericana a sample of this material, from which we cut two sheets, each about 15 inches square. In one of these we wrapped six freshly cut avocado bud sticks, each about six inches long. In the other we wrapped the same number of budsticks but included a small amount of sphagnum moss moistened to the extent we use when making shipments wrapped in wax paper.

The two packages were kept in our office at room temperature, which at this season fluctuates between 60 and 85 degrees. The packages were opened after one week, and all material found to be in perfect condition. After two weeks the packages were again opened. There appeared to be no change in the condition of the material in either one.

Though a shipment by air mail will rarely be more than two weeks in reaching its destination, we decided to continue the experiment. The packages were opened at the end of the third week and the material still found to be in satisfactory condition. A critical examination of the budsticks was made on this occasion.

At the end of four weeks we considered it time to terminate the experiment. The condition of the material was as follows:

Without sphagnum. Budwood still fresh and green, no shrivelling anywhere. Slight callusing at upper and lower ends of the budsticks. No buds had "pushed" and there is every reason to believe they would give an excellent account of themselves if used on satisfactory stock-plants.

With sphagnum. The moss feels as moist as the day the experiment was started—as far as one can judge by touch. The wood does not look quite so fresh. Some of the leaf bases are showing definite signs of decay. Several of the buds have "pushed" one-

eighth to one-fourth inch. It would probably be possible to use more than half of the buds successfully, but their condition is definitely poorer than that of the buds packed without sphagnum.

We have the following comments to offer on the above experiment:

1. Apparently there would be no advantage in using any packing material when shipping avocado budwood wrapped in this fabric; in fact the contrary is the case.
2. We have to remember that temperature conditions were favorable to the experiment. But in making shipments to other parts of the world, we can also remember that airplanes usually fly at elevations where high temperatures are not experienced. In the old days when we made shipments by steamer, temperatures in the hold, where the mails were usually carried, were often so high (in the tropics especially) as to be injurious or even fatal to budwood carried one week or more.
3. Even with the high cost of air mail, the elimination of packing material such as sphagnum moss brings down the expense to a reasonable figure.

(Ed. note: The following comments are excerpts from a letter written by Wilson Popenoe, included here as a supplement to the foregoing article.)

Since making our test with Vinyl Film we have tried another product, "Airwrap," which we obtained through the courtesy of Dr. Francis B. Lincoln of the Subtropical Experiment Station at Homestead, Florida. This material is much like Vinyl—it seems a trifle thinner—and we are under the impression it is made by the Goodyear people and has been known as Vitelon but we are not certain of this. The point is, Airwrap can be obtained in small lots from Airwrap Products, Laurel, Florida. They issue a circular regarding the use of this material for air-layering tropical plants. This circular carries a facsimile of a letter from my old friend Norman A. Reasoner of Bradenton, Florida, whose father was one of the founders of the famous Royal Palm Nurseries at Oneco, near Bradenton, where innumerable tropical plants were first introduced to the United States. We understand the Airwrap process has been highly successful in the growing of lychees which we know from long experience are hard to propagate by ordinary means.

As a check, we made the following experiment here: We wrapped ten budsticks in this material—no moss or anything else used—and kept the package from September 22 to November 4. Upon opening the package on the latter date, the budsticks appeared to be in excellent condition. Desiring to find out if the same wrapping material could be used a second time, we made another bundle of ten clean, fresh budsticks and held it in a drawer of my desk from November 4 to December 8. Upon opening the package on the latter date, the budsticks were in splendid condition—no shrivelling, no decay.

We shall continue to use this material—if it remains available—for shipping avocado budwood to all parts of the world. Recently we sent a shipment of nine varieties to Cuba. The postage, airmail, was just about five dollars. The recipient got 102 buds in all. When you can introduce nine new avocado varieties for five dollars you haven't

much to kick about.