

Did You Know?

A glass of orange juice was rare more than 60 years ago, and even then it was fresh-squeezed from oranges, mixed from a tasteless concentrate, or came direct from a can. Since oranges grow in only 5 percent of the United States, transporting them, or their juice, was impractical because they lose flavor once they're picked and juiced.

About the end of World War II, Louis G. MacDowell, Director of Research for the Florida Citrus Commission (FCC), speculated that flavor lost in concentrating orange juice might be restored by adding extra amounts of fresh orange juice during the concentration step. He came to ARS scientists for expert and technical help with his idea—and ARS scientists found it worked! ARS experts not only determined the amount of orange flavors and aromas needed to keep the fresh-squeezed taste, but they also discovered how to remove them, and that the concentrated juice could be frozen easily. The removed flavors and aromas are later added back when the concentrated juice is reconstituted with water; this discovery led to the flavor pack industry and later the frozen concentrated orange juice (FCOJ) industry. The process for making FCOJ was developed under the direction of ARS scientists in collaboration with scientists from FCC.

These discoveries, including dehydrating orange juice into powders, led to products like Tang and Crystal Light®, which were consumed by Apollo 13 astronauts and by astronauts on other space flights.

To date, ARS researchers have discovered about 40 compounds that are important OJ flavors, many of which are lost during the concentration process. Fresh-squeezed juice is still the best, but scientists at the ARS Citrus and Subtropical Products Research Laboratory in Winter Haven, FL, continue to provide aroma information to industry for developing higher-quality flavor packs that are more like the original flavor. Making less-expensive juice with fresh-squeezed flavor would improve the desirability of U.S.-processed orange juice and help it compete globally.

In this way, and others, ARS continues to support and advance this agricultural sector. In fact, more than 80 percent of the U.S. citrus grown is from an ARS-developed variety or rootstock.

ARS researchers are working to bring Americans the perfect glass of OJ!

Written by Gerald Smith, ARS Information Staff.

Orange Whirls

1 scoop vanilla ice cream or frozen yogurt

2 ounces 100% Florida orange juice

Blend ice cream and juice in blender until smooth. Serve immediately. Makes 1 serving.

Source: Florida Department of Citrus
<http://www.floridajuice.com/page.php>



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