

Never let the facts get in the way of a good story.

-- Marion Farmer Pearson

My grandfather was a master storyteller. But you could always tell when one of his stories was being polished up a bit because his eyes would twinkle. Aside from that sort of high-quality entertainment, there is a word for people who tell little white lies... it is "liar." If we want people to believe what we tell them, we must be trustworthy, and to be trustworthy we must be truthful. January's article, [Just the Facts, Ma'am](#), admonished us to say what we mean and mean what we say; we continue that theme this month by examining a "little white lie" that most of us have heard and probably have repeated.

It must be true...

The problem we often face as Bee Ambassadors to The Public is that all we know is what has been told to us. Few people, beekeepers or otherwise, research a fact before repeating it as "truth", especially if the "fact" already aligns perfectly with our philosophy and message.

One such "fact" that is "obviously true" because of frequent repetition is, as stated on a respected beekeeping supply company's website, "Our planet's food supply is absolutely dependent on pollination. One out of every three bites of food Americans consume come from a plant visited by bees or other pollinators." The clear and intended implication is that without honey bees, one third of our food supply would disappear. Yikes! It doesn't take much imagination to realize that would result in empty store shelves and mass starvation! There would be food riots and political upheaval. Our society as we know it would come to an end!

But wait... how true is the "one of every three bites" statement? I know that I'm not a poster child for proper nutrition, but when I look in my refrigerator I don't see that a third of the items are pollinated by honey bees. The "one of every three bites" idea comes from the



Honey bees will visit the blossoms of coffee trees, such as these in the mountains of the Dominican Republic. Does honey bee pollination provide a boost to coffee crops? Yes! Are honey bees critical, or even "important", for us to have a cuppa Joe? Absolutely not!

seminal document by S.E. McGregor, [Insect Pollination Of Cultivated Crop Plants](#),¹ which is available free on-line. What McGregor said was, "...it appears that perhaps one-third of our total diet is dependent, directly or indirectly, upon insect-pollinated plants." Hmm. "Insect-pollinated plants"... not "honey bees." So that includes things like tomatoes, that are a noticeable part of the American diet but aren't pollinated by honey bees, and even paw paws, which, due to their rotten-meat smelling flowers, are shunned by honey bees and are pollinated by carrion flies.

We beekeepers throw the "one of every three bites" claim around as evidence of the importance of honey bees. Isn't that okay, since pollinators are critical, and honey bees are pollinators? Even if the "one of three bites" number is grossly exaggerated, doesn't it prove the importance of honey bees? No! When we use that number, we clearly intend for The Public to associate "pollinators" with "honey bees" as a homogeneous grouping. But equally clear is that we are promoting honey bees, not

¹ S.E. McGregor, [Insect Pollination Of Cultivated Crop Plants](#), USDA, 1976.
<https://www.ars.usda.gov/ARSUserFiles/20220500/OnlinePollinationHandbook.pdf>

yellow jackets, brown bats or butterflies. The problems and issues associated with bluebirds are not the same as those associated with parakeets; neither are the issues affecting native pollinators the same as those affecting honey bees. We are beekeepers, not pollinator-keepers. In this context, to use the word “pollinators” as a direct synonym for “honey bees” when they are not equivalent is a lie.

Consider this: do we want people to associate all stinging insects with honey bees? No, we take great care to point out that of the 50 or so deaths in the US each year resulting from insect stings, almost all of those are caused by yellow jackets; only one, on average, is due to honey bees. But with respect to pollination, we want to paint all pollinators with the same brush and put “Honey Bees” in the header.

Ta-da! How to go from 1% to 33%

Even more important to a fact-checker is that McGregor does a lot of hand-waving to come up with his “one-third” number. He tells us upfront that:

Worldwide, more than 3,000 plant species have been used as food, only 300 of which are now widely grown, and only 12 of which furnish nearly 90 percent of the world's food. These 12 include the grains: rice, wheat, maize (corn), sorghums, millets, rye, and barley, and potatoes, sweet potatoes, cassavas or maniocs, bananas, and coconuts. The grains are wind-pollinated or self-pollinated, coconuts are partially wind-pollinated and partially insect pollinated, and the others are propagated asexually or develop parthenocarpically. However, more than two-thirds of the world's population is in Southeast Asia where the staple diet is rice. Superficially, it appears that insect-pollination has little effect on the world's food supply - possibly no more than 1 percent.

Within the United States ... about 286 million acres were cultivated in 1969. About 180 million acres were devoted to the wind pollinated or self-pollinated crops, primarily

barley, corn, oats, rice, rye, sorghums and wheat, grass hay crops, sugar beets, sugar cane, potatoes, sweet potatoes, and tobacco. About 60 million acres were devoted to crops that may receive some benefit from insect pollination but are largely self-pollinating (beans, cotton, flax, peanuts, peas, and soybeans). About 40 million acres were devoted to hay crops produced from bee-pollinated seeds (alfalfa, clovers, lespedezas). About 6 million acres were devoted to producing fruits, vegetables, and nuts--most of which are dependent upon insect pollination. Table 1 lists the cultivated crop plants... that are dependent upon or benefited by insect pollination. These plants provide about 15 percent of our diet.

The animal products we consume contribute about an equal amount to our diet. These include beef, pork, poultry, lamb, and dairy products--derived one way or another from insect-pollinated legumes such as alfalfa, clover, lespedeza, and trefoil.

When these sources, the animal and plant products, are considered, it appears that perhaps one-third of our total diet is dependent, directly or indirectly, upon insect-pollinated plants.

Wait a minute... McGregor is counting crops that are “dependent upon” and “benefited by” honey bees as the same. He also counts fully 15 percent of our diet as animal products, and because some cows in some states (not North Carolina) are fed high-dollar alfalfa, then all milk, eggs and meat go into the “indirectly due to insects” column. That is utterly ridiculous. (Since we are talking about cows, would it be “utterly ridiculous”?) I’m not a cattleman but my neighbors’ livestock eat fescue and orchard-grass, neither of which depends on insect pollination, and my chicken feed is made up mostly of corn and grains. According to the [University of Minnesota](#), a typical pig diet should contain corn, soybean meal, dicalcium phosphate, limestone (for calcium), salt and

vitamin/mineral mixes. No bee-dependent foods there!

The cold hard facts

I wanted a little different perspective on McGregor’s claims and statistics a bit more up to date so I looked at the [United Nations Food and Agriculture Organization’s](#)² crop statistics for the most recent year posted (2014). I focused on the tonnage of production rather than the acres in production since the former seems more closely tied to diet.

Top 10 Crops, US Agricultural Production, 2014	
Item	Metric Tonnes
US Grand Total	717,825,336
Maize	361,091,140
Soybeans	106,877,870
Wheat	55,147,120
Sugar beet	28,381,270
Sugar cane	27,600,190
Potatoes	20,056,500
Tomatoes	14,516,060
Sorghum	10,987,910
Rice, paddy	10,079,500
Seed cotton	9,791,640

Source: [UN FAO](#)

As you can see from the table above, the top 10 crops in the United States account for nearly 90% of the entire tonnage of US crop production. Of these crops, seed cotton is the only one that benefits from honey bee pollination but it isn’t required.

I’ll go out on a limb here, based on what we’ve seen thus far: There is no way that the typical person in the US, and more specifically the typical person in NC, depends on honey bees for a third of our diet. The numbers just don’t add up without making a lot of unrealistic assumptions. Just consider a typical meal at McDonalds (not a nutritionist’s dream but certainly an American staple): the only bee-

² Food and Agriculture Organization of the United Nations
<http://www.fao.org/statistics/en/>

pollinated product on the tray is the cucumber (pickles) and perhaps the onions on the burger, and I always flick those off.

The truth is worth telling

Here’s the thing: honey bee pollination is genuinely critical for many of the foods we enjoy and choose to depend on! We don’t need to lie to make a case for needing honey bees. Dr. David Tarpy at NCSU compiled a monograph, [The Value of Honey Bees as Pollinators in North Carolina](#),³ which lists crops by their degree of dependency on insect pollination and the percentage of that dependency that is provided by honey bees. Just a few examples are provided in the table below.

Pollination by Crop		
Crop	Dependency on Insects	Proportion that are honey bees
Apples	100%	90%
Blueberries	100%	90%
Blackberries	80%	90%
Cucumbers	90%	90%
Melons	80%	90%
Pumpkins	90%	10%
Squash	90%	10%
Grapes	10%	10%

Source: Tarpy, [The Value of Honey Bees as Pollinators in North Carolina](#)

Notice that the table includes many foods that must have honey bee pollination: cucumbers and apples are prime examples. Those are the ones we as beekeepers should emphasize in our message to The Public about the importance of honey bees. However a few surprising ones should be left out. For example, who knew pumpkins and squash can get along

³ David Tarpy, “The Value of Honey Bees as Pollinators in North Carolina”, NC State Extension Publications, 2015.
<https://content.ces.ncsu.edu/the-value-of-honey-bees-as-pollinators-in-north-carolina>

fine with insect pollinators other than honey bees? So they shouldn't be on our "No Bees, No Food" posters... including them would be a lie.

The other important point that we should be honest about is that if we didn't have these honey-bee-dependent foods, we wouldn't starve to death. What would happen if we went to Food Lion and they were out of apples? Personally, I would buy bananas instead. Problem solved. I may prefer apples over bananas but nutritionally, bananas are an excellent option. Don't like bananas? Substitute peaches for your apples: they don't require our honey bees either. The point is, without honey bees we would eat other foods but we would end up just fine. How do we know this is true? Well, before 1622, when the first honey bees were shipped to Jamestown, the New World didn't have a single one. But the residents seemed to get along without even noticing. I'm pretty sure the first thing Pocahontas said to John Smith was not "Hey, did you bring any kiwi fruit?" This in fact explains what we saw earlier: squash, pumpkins and grapes, which are all pre-Columbian New World crops, don't depend on honey bees.

And guess what? If alfalfa didn't exist, cows in the Midwest could live off of the same fodder our North Carolina cows eat. So we would still have beef... but even more of it would be grass-fed beef than now.

What you can do

I hope that you'll ponder these thoughts and join me in adopting two simple messages when we go out among Normal People and share our love of honeybees:

1. Yes, pollinators as a whole deserve attention but that's not what I'm talking to

you about. I'm talking about HONEY BEES. I'm not going to quote wishy-washy, hyped-up statistics that don't apply to honey bees. If you want to learn about bats, go talk to somebody at the [NC Wildlife Resources Commission](#).

2. Our food supply does not depend on honey bees. We would get along just fine, nutritionally, without them, just as many societies have done throughout the ages and continue to do now in some parts of the world. However our diets would be boring without our honey bees. Who wants to eat rice, corn or bread all the time? We love apples, blueberries, blackberries, cucumbers, melons and lots of other American joys such as almonds. We could do without them, but why would we want to?

We don't have to lie to be convincing: our message stands by itself without artificial enhancement. Let's not cheapen that message by diluting it or puffing it up beyond the boundaries of truth. We don't need to add in other pollinators or include trivially-relevant crops in the story of the importance of honey bees. Our bees deserve better than that!

Randall Austin is a NC Master Beekeeper who keeps a few honey bee hives in northern Orange County, NC. He can be reached at s.randall.austin@gmail.com.

Copyright 2017, no reproduction in whole or in part without permission of the author, except for noncommercial, educational purposes.