

FROM US TO YOU

COMMENT

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THE business of pollination is not nearly as quaint as many would like to believe. There is a picture of happy bees, flitting from flower to flower, greedily imbibing floral nectar and brushing pollen hither and yon, accomplishing the fine act of fertilization in the process. You can almost hear the soft flute music in the background, can't you?

Beekeepers know better though, or at least those that are in the business of pollination, and when it comes to large scale pollination that soft flute music is mostly drowned out by the roar of heavy duty diesel engines and bobcat motors. This is serious business...serious for the beekeeper who strives to make sure his or her colonies live up to the specifications on the contract; serious for the grower, who absolutely requires enough bees in the right place at the right time so there's enough pollination going on to set the crop; and it's serious for the bees, who have to endure all of this and still keep on keepin' on.

For the beekeeper and the grower to get done what they need to get done, it's usually the bees that have to bend the most. Or it has been in the recent past. Perhaps that is changing now, since scientists, beekeepers and growers are looking a bit harder at what it is we have been expecting from our bees.

The most extreme pollination job on the planet is probably the almond crop in California. Unless you have been too busy planning the protest at 10 Downing Street for the lack of research funds, you certainly know something about this crop. That something is undoubtedly the value of almonds, the cost of renting a colony of bees for pollination, the fact that half the bees in the US are used to doing this job, and that for some reason, the media focus on this crop when discussing Colony Collapse Disorder. So why should we be different?



1. Colonies are moved from all over the US to California on large trucks, then off-loaded directly into orchards that are just beginning to bloom. Look carefully at the orchard floor...nothing but almond trees and grass live here.

2. A holding yard in southern California. Forage is nonexistent here as it is desert dry. The only food available comes in tanker trucks and bags.

3. Digging colonies out of snow banks and expecting them to perform at peak is a stretch in most cases.

So let's look at this Extreme Pollination job, should we, though for the sake of brevity I'm going to generalize a bit.

Basically, bees arrive at the almond crop from several sources. California beekeepers run about 350,000 or so colonies but since less than half are pollinators they don't have nearly enough bees to pollinate the entire almond crop that needs around 1.5 million or so colonies. As a result bees from other parts of the US, and even Australia, must travel there.

There is variety in how they get from here to there, certainly.

Some leave home in the fall after honey harvest and travel to California to spend the winter. These are mostly from the northern parts of the US, since winter's hard up there, and it's not supposed to be in California. Some bees stay in their frigid locations until just before the early February bloom and get dug out of snow banks and trucked to California – sort of a just-in-time operation. These tend to be not quite as far north as the first group.

Others, those that spend the winter in the southern parts of the US, also tend to leave just in time, but rather than dig them out

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of snow banks, they have been busy being split, making honey, raising queens and the like because the weather and the forage allow it. They are usually at pollination strength when they leave states like Texas, Florida and Arizona.

Still others arrive in the US in the late fall as packages from Australia which are installed in equipment and built up in a hurry to get strong enough to do the job. Some Australian packages come even later and go right into the orchards, or almost so rather than spending time building up.

No matter where they come from, several criteria must be met before they can even get into California. Those that come from down south have less trouble getting up to the necessary strength (a good pollinating colony should have a minimum of eight frames of bees and brood) in time since they have been making honey, and even growing to the point of swarming or being split late in the year. But they have to contend with the notorious fire ants that live in our fair south. Treating for the ants during the summer, washing colonies of ant nest residue, and installing new or clean bottom boards and pallets are added chores for these beekeepers before the colonies even get on the truck to head west. This has added considerably to the cost of managing hives.

Getting to the required strength is probably the most difficult part of all of this for many of the beekeepers who send bees west. Traditionally, colonies stuck in a snow bank in January are at the season's lowest population, with the queen just getting back to speed. To get these colonies on a truck can be a challenge, then trucking them thousands of winter-weather miles to a warmer but still barren landscape is an even greater challenge. Usually, but not always, these colonies come to California early enough to sit in a holding yard somewhere to be built up to pollinating strength. For most of these there is no forage available and the only food comes out of a tanker truck and a bag. High fructose corn syrup or, more commonly now, sucrose syrup and a protein supplement are poured into these colonies in an attempt to get them growing fast, and up to strength even faster. If the colonies were healthy when they arrived, this mostly works, but they are pushed hard. If they weren't healthy no amount of food is going to get a sick colony strong.

The colonies that came from the south, colonies that were built up from packages from Australia, and colonies that live in California year round generally do OK, but they, too, have to make sure they are healthy when they leave home (even for short drives



This is what it's all about...get bees and blossoms together.

from home yards in California), and that they stay healthy after they arrive. The incidence of Colony Collapse Disorder that visited some last year and the year previous seems to show up dramatically after they arrive in California and are in the process of being built up on that artificial diet, or right after they are moved into the almonds.

Once bloom starts, colonies are moved from holding yards as fast as possible. Many of these orchards are huge, with nothing for bees to eat except almond nectar and pollen. But almond nectar and pollen aren't bad, and after a diet of artificial food for months this is pretty good stuff. Bees do fairly well on it for the month or so they are there.

Some orchards are adjacent to other crops however, mostly tree crops in the *Prunus* family and these provide a bit of variety...and occasionally a bit of danger from pesticides being sprayed. Coordination between growers is important during this time.

Almond growers are very, very careful about not allowing anything except almonds grow in these orchards. Some may allow a narrow strip of closely-mowed grass between

trees in the center of the row, but nothing beneath the trees. The goal is to make sure every available resource...fertilizer and water...is used by the trees and not a freeloading weed. Thus, for those bees in almond-only country, it's almonds only for the month they are there.

After four weeks or so of this the petals fall and the bees leave for other pollination jobs on the west coast, for honey crops or splitting and requeening back in the south, or for additional buildup in preparation for honey production back in the Midwest when the weather turns.

Some head back to the east coast and prepare to move to Maine to pollinate blueberries, but stop along the way to do apples and tree crops along the east coast on the way north.

The bees...well, they don't seem to complain much. But for a busy pollinator on this kind of schedule, losing half of his livestock over a season is a predictable event. Maybe the bees don't complain so we can hear them, but dying seems to me a pretty straightforward way of getting your point across.