

# **POLLINATION CONTRACTS AND EVALUATING HONEY BEE COLONY STRENGTH**

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When cranberry growers rent honey bee colonies for pollination, it is important that the grower and the beekeeper have a clear understanding of each other's expectations. The information here is to be used a guide to help growers understand what beekeepers expect and need. The word "guide" is key here: growers will need to tailor these recommendations for their particular circumstances and for those of the beekeeper.

Most growers will want to rent from 1-3 colonies of honey bees per acre of cranberries. The more honey bees the better, although over 3 colonies per acre is not necessary. Without honey bees, growers will still get a crop of cranberries, but having lots of bees available will definitely increase yield, fruit size and quality.

The grower should establish a working relationship with a reliable beekeeper. How do you know if a beekeeper is reliable? If a beekeeper is willing to negotiate and sign a pollination contract, it is a good first indication that the person is trustworthy. A sample pollination contract can be found on the next page. Basically, the grower and beekeeper need to agree on how many colonies will be rented, and what the rental fee will be. They need to agree on when the bees will be brought into the cranberry plantations, where they will be located, and when they will be removed. And they need to agree on pesticide use, and who is responsible for vandalism and stinging incidents.

Here is an example of how rental fees are determined for almond pollination in California. Many almond growers determine the fee by the strength of the colonies upon arrival. An independent person (not the grower or the beekeeper) sets up the pollination contract, and inspects 10% of the beekeeper's colonies to evaluate colony strength. In most cases, the grower pays for the services of this independent contractor. Colonies must be of minimum strength, which for almonds is 6-8 frames of bees (this minimum will be higher for cranberries, see below). The grower will pay the beekeeper \$6.50 to \$7.00 per frame of bees, with a cap at 10 frames of bees. Sometimes the grower will pay a flat fee of \$55 or \$60 per hive, but will require that the colonies have a minimum of 8 frames of bees. If they have less, the weak colonies must be removed or replaced. If they have more (on average), the grower may increase the pay.

In some cases, the grower pays the beekeeper half of a pre-determined rental fee on arrival of the bees. The grower and beekeeper then each pay half of the cost to bring an independent person in to evaluate colony strength. If the colonies are all of a minimum strength, the beekeeper gets his money back, and the grower pays the remainder of the set fee. In California, beekeepers have learned which growers do not give their money back, and these growers now have a hard time finding reliable beekeepers for pollination.

Almonds bloom in February, at a time when bee colonies are not as strong as later in the season. Research has shown that a colony with 6-10 frames of bees is sufficient for almond pollination, and stronger colonies do not increase efficiency.

Cranberries bloom in mid to late June. This is the time of year when honey bee colonies are very strong and have sufficient bees of foraging age to collect honey. It is also the time of year when clover and other flowers are in bloom, which are much more attractive to bees than cranberries, and produce much more honey. To move their bees into cranberries for pollination, the beekeeper must be paid enough to compensate the beekeepers for the loss of honey production. Otherwise, the grower will likely end up with hive boxes containing colonies that are too weak to provide adequate pollination. In May and June, beekeepers can split their strong colonies, keeping the strongest units for honey production and renting the weakest one for pollination. If growers want strong colonies for pollination, they must be willing to pay for them. How much? The price should be negotiated with the beekeeper, and may vary depending on honey prices. Most experienced beekeepers know how much honey they produce during the 3 week period when they would bring in bees for pollination, and also know how much their bees will produce from the cranberries, so can give the grower an honest estimate of the difference. Another thing to consider is where the cranberry property is located. If the property is surrounded by open fields, the bees will tend to forage on both the cranberries and on surrounding clover and wildflowers in the area. Pollination efficiency may go down, so more colonies may be needed per acre (2-3 per acre), but the beekeeper will not lose too much of a honey crop, so the negotiated price may be less. If the property is surrounded by woods, the bees will tend to forage more on the cranberries, fewer colonies may be needed (1-2 per acre), but the rental fee may be higher because the beekeeper will lose more honey.

How strong should a colony be? A colony should contain *a minimum* of 9-10 frames of bees, and a maximum of 15-16, although a colony with 9-10 frames of bees is sufficient. To be more specific, one deep hive box (brood chamber) contains 9-10 frames. Most colonies are kept in 2 deep hive bodies, with honey supers (less deep boxes) on top. A good frame of bees is *covered* with bees, both sides, top to bottom. If there are 10 frames of bees, there should be 6-8 frames of brood of all ages (eggs, larvae, and pupae). If there are 16 frames of bees, there will be 10-13 frames of brood. There should be a laying queen, noted by the presence of eggs in the combs. Lots of brood in the colony, especially larvae which require constant feeding, stimulates bees to collect pollen – this is an important thing for a grower to know.

Another important point is that the colonies should have empty supers where they can store honey. If the supers are full when they arrive, the bees will have no place to store honey and may swarm. Empty supers stimulate the bees to collect honey – another important fact for growers.

In sum, strong colonies with good, laying queens and room to store honey will be the best pollinators of cranberries. After 2-3 weeks in the cranberry fields, the beekeeper will want to move the bees to a different location where they can build back up and produce more honey.

### **Main points:**

1. Growers and Beekeepers should have signed pollination contracts. Handshakes and gentlemen agreements don't ensure payment or responsibility.

2. The bee colonies should have a minimum of 9-10 frames of bees. They should have a minimum of 6 frames of brood and should all have laying queens. They should also have at least 1 empty honey super on arrival.
3. At least 10% of the colonies should be inspected, preferably by an independent person, for strength (frames of bees).
4. The rental fee should consider the minimum and maximum the grower will pay per frame of bees or per colony, the current price of honey, and how much honey crop the beekeeper would lose by putting *strong* colonies in the cranberries. (Note: a beekeeper will not lose any honey crop from weak colonies because weak colonies neither pollinate nor make honey!)
5. The contract should stipulate when the bees should be brought into the cranberry fields, and when they should be removed. It is best to have the bees brought in during very early bloom to ensure they first flowers they find are the cranberries in front of their 'noses', which will help ensure they keep on foraging on the cranberries.
6. The contract should also stipulate that the grower will NOT use toxic insecticides on the cranberries or surrounding edges during the rental period, except with the understanding and consent of the beekeeper.
7. The grower should assume liability for vandalism while the bees are on his property, and for stinging incidents. Foraging bees rarely sting unprovoked, but the colonies can stage a good defense if need be.

Questions? Feel free to contact me:

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# Pollination Agreement

Date \_\_\_\_\_ For Season \_\_\_\_\_

## The Beekeeper

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone Number \_\_\_\_\_

## The Grower

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone Number \_\_\_\_\_

No. of colonies ordered \_\_\_\_\_

Rental Fee for Grade A colonies \_\_\_\_\_

Rental Fee for Grade B colonies \_\_\_\_\_

Compensation for Additional Movement

Of bees or other Extras \_\_\_\_\_

Total Rental Fee \_\_\_\_\_

Name of Crop \_\_\_\_\_

Location of Crop \_\_\_\_\_

Distribution Pattern of Colonies shall be \_\_\_\_\_

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### The Grower Agrees:

1. To give \_\_\_\_\_ days notice to bring colonies into crop
2. To give \_\_\_\_\_ days notice to take colonies out of the crop
3. To pay one-half the agree total fee when the bees are delivered
4. To pay in full within \_\_\_\_\_ days after the delivery date
5. To pay one percent a month interest on amount unpaid after the due date.
6. To use no toxic pesticides in the crop during the rental period, except with the understanding and consent of the beekeeper, and to warn the beekeeper if neighbors use toxic sprays
7. To provide an uncontaminated water supply
8. To assume liability for livestock damage or vandalism
9. To assume public liability of stinging while the bees are located in the crop.

### The Beekeeper Agrees:

1. To open and demonstrate the strength of colonies randomly as selected by the grower.
2. To leave the bees in the crop for a period necessary for effective pollination, estimated to be approximately \_\_\_\_\_ days with a maximum period of \_\_\_\_\_ days, after which time the bees will be removed or a new contract negotiated.
3. To ensure that colonies are properly located and will remain in good condition while pollinating the crop.

Signed \_\_\_\_\_

Date \_\_\_\_\_

\_\_\_\_\_  
Grower

\_\_\_\_\_  
Beekeeper