Bee Biosecurity Workshop
Beekeeping Operation Case Study

This fictional example will illustrate and explain some of the key biosecurity points outlined in the National Biosecurity Standards. The questions related to the beekeeping case will prepare you for completing your own self-assessment and action plan.

Operation Management and Lay-out:

Mark and James Smith, have a 1,000 hive beekeeping operation in South Bruce County. Their father kept a couple hives to produce honey for their family when they were growing up and they were always intrigued when he was working with the bees. They decided to get into beekeeping as a summer job when they were attending the University of Guelph. Once they graduated, they increased their number of hives until they had a viable full-time operation. The brothers live on a 75-acre farm, across from their parents' farm, which is comprised of 24 wooded acres, and 50 acres they crop in a corn-soy-wheat rotation. There is approximately one acre of land around the house, drive shed and two buildings for beekeeping equipment storage. They borrow their parents' field equipment for the cropping operations.

The 1,000 hives are spread out over 30 bee yards on property owned by 23 different landowners. The land on which the 30 yards are situated include a variety of farming operations: cash crop farms (corn, wheat, canola and soybeans), two dairy farms with forage acreage, a couple of berry and fresh market vegetable growers, and mixed livestock operations. They also have a few yards on municipal and conservation land. The Smiths have a very good rapport with all the landowners who communicate with them regularly about any pesticide applications or other field operations which might impact the bees.

The Smiths usually start new hives from self-raised queens. However, occasionally, packaged bees are used to establish new hives and replace any winter losses. New bees are purchased from an Ontario inspected supplier who provides a written statement regarding his bee health management and biosecurity practices. Mark and James only use new equipment when establishing hives. Their father gave them his old equipment but they heard that it can harbour pests and disease for a long time so they have never used it. The old hive boxes are stacked against one of the storage buildings.

All hive boxes are marked with the Smiths' names and telephone number and have a unique hive identification number. Mark and James keep written records on each hive including in which yards it has been placed, any bee health or pests issues, treatment information, etc. Generally they check on the hives twice per month. They look for signs of pests or disease and ensure the bees have ample food. Mark carries hand sanitizer with him but it always seems to be rolling around the floor boards and is more of a nuisance. James doesn't like the sanitizer so carries a spray bottle with soapy water and some paper towels.

The Smiths keep bees for both pollination services and honey production. In June, they bring 800 of their hives to their farm where they are loaded onto trucks and sent to Nova Scotia for blueberry pollination. They use a transport company that is familiar with shipping bees and that ships bees to Atlantic Canada for several other Ontario beekeepers. The drivers are good about ensuring that nets and tie downs remain secure to avoid bee escapes and to protect the hives during transport. The trucking company backhauls freight to Ontario.

All of the Smiths' hives go to one blueberry grower in Nova Scotia but are moved around to several different blueberry fields. The hives are intermingled with bees from other provinces and from other Ontario beekeepers but, since each of the Smiths' hives carries a unique identifier as well as the farm name, they are not concerned that they will not get their own hives back. The bees are typically in Nova Scotia for three to four weeks returning in early July. The grower notifies the Smiths when pollination is complete and they arrange for trucking back to Ontario. Typically, the trucking company tries to get loads from Ontario to Nova Scotia and then use the bees as backhaul. Lately, they have been taking used farm equipment from an Ontario dealership to one in Nova Scotia. Since Mark and James send 800 hives, they are shipped and come back on two loads within a couple of days of each other. The Smiths are then very busy shuttling the hives out to the bee yards. Their goal is to have all hives back in the yards within two days of arriving back at their farm. In most cases, the returning hives are going into yards with some of the 200 hives kept back.

Once all the hives have been relocated to the yards, Mark and James extract honey from all 1,000 hives. The honey from the hives that were in Nova Scotia is kept separate from the "Ontario honey" as it can be marketed at a premium price as blueberry honey. A second extraction is done in September. The extraction equipment is cleaned and disinfected before each use.

Getting the 800 hives back into the field and then collecting honey from 1,000 hives spread over 30 yards makes for a very busy few days. Mark and James have discussed whether it might not be more efficient to extract the honey from the 800 hives before they are returned to the yards. It would save a lot of time having them in one central location.

The Smiths' honey is sold through several local stores plus two on-farm markets owned by growers who have one of the Smiths' bee yards on their properties. They do not have any direct from farm sales however Mark's girlfriend is very artistic and painted a beautiful farm sign for their laneway reading "Smith Apiaries and Honey Production". Now they get people driving into the farm wanting to buy honey. Their mother recently saw someone coming out of one of the storage sheds when the boys were away visiting the bee yards. She went over to their farm and learned that the person had seen the sign at the road and wondered if they could buy honey.

The hives are wrapped for the winter and left in the yards. Mark and James check on them two or three times over the winter months and watch for wildlife damage. Some of the yards, especially the ones located on municipal and conservation land, are near heavily wooded areas. Raccoons, skunks and rodents are the usual pests but they have occasionally had bear damage during the fall and spring at yards located in the northwest part of the county. The bear seem to just be moving through so they haven't implemented any deterrents as it doesn't seem worthwhile for the smaller wildlife.

Case Study Questions

In many cases, there is no single correct answer. The choice of action may depend on several factors, and what is practical and achievable under the circumstances.

1. Identify **three** biosecurity risks in this beekeeping operation related to bee health management and suggest how these risks could be mitigated.

2. Identify **three** operational management biosecurity risks and list some possible solutions.

3. What are these beekeepers doing that would be considered good biosecurity practices? List at least **five**.