Bees at Tocal 360 - transcript

Hi my name is Liz Frost, I work here at Tocal Ag College for the Department of Primary Industries as a Honey Bee Technical Specialist. My job is to provide research and development for the beekeeping industry. Australia has a lot of commercial beekeepers and beekeepers that keep hives for recreational purposes. In New South Wales we've got just over 800 registered beekeeping businesses and over 5,000 registered recreational beekeepers.

[00:41] Today we're on the Tocal College, specifically at the dairy, you can probably hear some Sulphur-crested Cockatoos making a racket and there is a lot of things that happen at this site. Right around me are four bee hives, one just in front of me and another back there. And they're located on this site specifically because we do most of our training at the dairy ruminant training centre just over my left there. So the access to training is the most important thing about this site as well as vehicle access. Hives are quite heavy so we need vehicle access right next to the hives (and) floral resources. Bees get their food from the bush basically, so they get their energy from nectar from flowers and they get their protein from pollen from flowers so ideally we have a site where we can train people and the bees get access to good nutrition so flowers in the form of trees or flowering crops or pasture species.

[01:50] So now we'll check a hive. I've got one just in front of me and the components are an emlock - that's the strap around all the components to keep them from falling apart. Importantly I've got personal protective equipment on ... so this is my half bee suit which I'll just do up now that I'm going to open the hive. Each worker bee is a female and each one can potentially sting you so we need to be careful that we're taking the appropriate precautions ... we're wearing protective equipment to our level of comfort and safety. So I've got a half jacket, it's got a veil on the top so bees can't get caught in my hair or sting my face. I'm not wearing gloves because I'm quite comfortable with bees but as a new beekeeper or someone who has any degree of allergic reaction we need to wear gloves and make sure we've got tight ankles because bees - especially in cooler weather - can crawl up our pant legs and that's not a good situation.

[02:51] So I've got my jacket on now I've got my smoker and my hive tool. The hive tool allows us to remove the lid and move frames within the box if we don't have this basically we can't do our job of checking on the bees, keeping them healthy, harvesting honey, transporting them around the countryside.

[03:14] So with our bee smoker, this is cool smoke, we puff some of this in the entrance to the hive and that smoke calms the bees down. It lets them know that we're here and there's some management activity that's going to happen. So bees naturally talk to each other through chemical signals, so when you disturb a beehive they send out these chemical signals to tell each other that there's some disturbance and this smoke masks that sign. So on top here we've got an inner hive mat, we've got a few hive pests - small hive beetle which ... I'll just pinch those … that's a pest of the beehive. It came from Africa in 2002. It was first found in the country in the

Richmond area and unfortunately it wasn't possible to contain that pest. So we can use smoke as little or as much as necessary. I'll take out this first … so this frame's got several hundred bees on it, it's got some capped honey here. So when bees have collected nectar and processed it to the extent were the water percentage is such that it won't spoil if they cap it, they'll cap it with wax that they also produce themselves.

[04:45] So this colony is a single box, we'll set that frame aside to give us some room so when we move the other frames we don't squish any bees. So this frame they're building new wax on, you can see this one has a black plastic insert, that's just a guide for the bees. They naturally would make their hexagonal wax cells without the guide but from a commercial or recreational basis where we want to easily make honey for human consumption, it helps to have that guide so your beehive is nice and orderly and easily to be manipulated. So this frames got brood on it and we can see capped honey and open brood and pollen so when beekeepers do their disease checks, what they do is they shake the bees into the colony gently, remember bees don't have a skeleton like us, theirs is on the outside of their body so we have an endoskeleton, bees have an exoskeleton. So just because we are shaking them doesn't mean that it's harmful. So shake them back into their own colony.

[06:03] This colony here lives here at the dairy site but sometimes they get a bit ... I suppose stressed if there is not enough floral resources, enough flowers for them to feed on. So if that was the case at the dairy site I would transport all these hives to another part of campus where more flowers are blooming.

[06:22] So it's starting to rain a little bit and I don't want to stress the hive out so I'll just close it up because bees are quite sensitive to temperature and moisture changes. They like to keep this broodnest at 35° celsius so they regulate that temperature themselves through eating nectar, vibrating their flight muscles and creating heat. So I've put those frames back in the same way and now I'm going to close the hive up with my emlock so that if there is a strong wind or a cow gets loose and scratches up against the hive it doesn't accidentally knock that lid off so rain or pests can get in. I'll pick up my smoker and now it's time to extinguisher my smoker safely so I don't start any fires and call it a day.