GROWERTALKS

Corr on Cannabis

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Scents of Humor

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While checking into my hotel after arriving in Colorado for a consulting trip, I detected an obvious fragrance in the air around the hotel. I straightaway asked the clerk where the cannabis production facility was. He laughed and said it was blocks away. He said some less-aware people asked if the hotel had a problem with skunks.

Names of cannabis cultivars ("strains") show the aroma of cannabis is part of its allure. Names like "Grape Ape," "Banana OG," "Cherry Pie," "Blueberry," "Grapefruit," "Juicy Fruit" or even "Fruity Pebbles" attest to the pleasant fragrance some people detect from cannabis.

However, names like "Diesel," "Sour Diesel," "Blue Cheese," "Hindu Skunk," "Shiva Skunk," "Skunkberry" or just plain "Skunk" are evidence the aroma from these plants may not be pleasing to every nose.

The compounds in cannabis that first come to mind are cannabinoids (THC and CBD, for example), but cannabis can contain up to 140 different terpenes. Terpenes are compounds that give plants their fragrance. Terpenes are responsible for the distinctive smells of lemons (limonene), pine (pinene), mangos (myrcene), cloves (eugenol), carnations (beta-caryophyllene) and many, many other plants.

Terpenes in cannabis are important not only for their fragrance, but may have health benefits. For example, lavender oil (rich in terpenes, including linalool, pinene and limonene) has been demonstrated to reduce anxiety. It's likely some of the terpenes in cannabis also have health benefits.

Because of fragrance and potential health benefits, terpenes are important components of cannabis. However, terpenes in the air around a cannabis facility can lead to trouble. Lawsuits have been filed by neighbors claiming their property values have been reduced. Municipalities have established ordinances attempting to regulate nuisance odors from cannabis facilities.

One of the trickiest parts of the cannabis odor issue is measuring the odor, in part because the odor released isn't consistent. Young cannabis plants are almost odor-free; it's only when the plants begin to mature and produce trichomes that terpene content spikes. Sunny, warm days cause more terpenes to be volatilized. Wind can dilute terpenes in the air. So while walking the perimeter of a facility there may be no detectable odor if plants are young, the temperature low and a strong wind is blowing. In contrast, the same site may have significant odor issues if the plants are mature, the temperature is high, the sun is strong and the air is calm.

The time of greatest potential for complaints about cannabis odors is at harvest time when plants mature and are

being handled, bruising the leaves and flowers releasing even more terpenes.

Rather than just sniffing air outside a cannabis facility, there are devices that enable a trained user to have a somewhat standardized measurement of odor in the air. Most common is the Nasal Ranger. This device looks a bit like a large pair of binoculars that's pressed against the user's nose. (Google it. There are some great videos.)

Air is first sniffed through an activated carbon filter, which removes odors from the air. Gradually, the operator decreases the amount of filtered air and increases the amount of unfiltered air until the odor can be detected.

A similar device is the Scentroid SM100. Rather than using filters, this device uses odor-free bottled air, which is gradually mixed with the air to be tested until the odor is detected.

For greenhouse or field production of cannabis, the only practical odor management method is to introduce odor-neutralizing compounds into the air. Companies such as Ecolo, OMI, Benzaco and others have long histories of dealing with difficult odors (garbage transfer stations, sewage treatment plants, asphalt plants, etc.) and are now branching out into cannabis odor control.

For example, OMI has the product Ecosorb CNB 100 and Benzaco has the product Odor-Armor 420—both of which have been specifically designed to neutralize cannabis odors. These products are composed of compounds that change the airborne terpene molecules in such a way they no longer have an odor.

How odor-neutralizing compounds are delivered is as important or perhaps more important than the compounds themselves. The compounds are typically introduced into exhaust air as a spray, mist or vapor. In general, the smaller the particle size of the odor-reducing compound, the more effective it will be. Large droplets settle out of the air too quickly and droplets containing water can freeze in the winter. Systems producing vapor instead of droplets avoid these issues.

It's important to keep odor-neutralizing compounds away from cannabis plants, since these compounds will neutralize desirable terpenes on the plants in addition to terpenes in the air. This is typically not a problem in greenhouses, since the exhaust fans push the material away from the greenhouse. But if used in outdoor production, changing winds can move the material back over the plants.

One person's stinky cheese is another person's gourmet Limburger. To the owner of a facility, cannabis smells like profit; to the neighbors, it's a nuisance. Minimizing odor complaints to maintain good relations with neighbors is essential for long-term profitability. **GT**

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