Soil, Water, and Tissue Testing for CBD Industrial Hemp Production

Resources to help you begin your search for the testing laboratory that may be best for you.

Most CBD hemp growers will want to test their soil, water, and plant tissue at some key points during the season. Soil, water, and plant nutritional tests can help determine what nutrients the plants will need to be provided and what fertilizers will be most appropriate. Tissue testing for phytochemicals such as CBD and THC are important to monitor your crop for quality and to anticipate harvest timing. Here, we have provided some resources to begin your search for the testing laboratory that may be best for you.

Some things to consider

- Test your water source and soil source for plant growth elements; Nitrogen, Phosphorus, Potassium, and micronutrients. This is important information so you can optimize plant growth of this high-value crop. Your crop may require feeding throughout its life cycle, and these needs may change depending upon growth stage.
- THC/CBD is an important test. Since industrial hemp may not exceed 0.3% THC, tracking the level of your crop may be critical as you approach harvest to prevent crop loss due to noncompliance. CBD levels may fluctuate during the season.
- In Pennsylvania, a Certificate of Analysis (COA) will need to be provided to the PA Department of Agriculture to document delta-9 tetrahydrocannabinol concentration if your crop is not among those randomly tested by the Department.
- Many wholesale purchasers may also require a COA of your biomass which include tests for heavy metals and microbial contaminants.
- A terpene profile may be required by buyers of wholesale floral and bud material.
- Choose a lab that is ISO 17025 accredited

Helpful tips when submitting a sample

- Check with your chosen laboratory to understand how they would like to receive material. Laboratories may have differing requirements regarding quantity, plant parts, and moisture content of the samples they can receive and process.
- Include a copy of your state hemp growing permit with your sample. Place this in a ziplock bag to protect from moisture in shipping.
- USPS allows hemp plant parts to be mailed if these products comply with local laws and compliance records are maintained. Private delivery services may have policies prohibiting the shipment of hemp plant material. If not using USPS, be sure to check with your delivery service before attempting to ship your sample

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This information is provided only as a guide. It is the permit holder’s responsibility to understand and comply with all federal and Pennsylvania policy. Reference in this publication to any specific laboratory is for general information only, and does not constitute an endorsement or recommendation by Penn State. This is not an exhaustive list of laboratories. List is subject to change as authors become aware of new information.

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