University of Nebraska-Lincoln scientists are expanding their research into pesticide drift, amid new legal and regulatory concerns.

Greg Kruger, a cropping systems specialist at UNL's West Central Research and Extension Center at North Platte, is leading the research into the potential of pesticide drift, which occurs when pesticides drift to unintended targets when they're applied to fields.

The UNL research will evaluate drift through different nozzle types, application pressures and spray solutions and at different wind speeds.

The addition of the new facility will enable research to be conducted on spray collection efficiency, pesticide penetration into the plant canopy, and spray quality and pesticide efficacy comparisons.

Unwanted pesticide drift has been the subject of lawsuits, and the Environmental Protection Agency is planning a new Drift Reduction Technology policy that will require labeling all pesticides with wording aimed at reducing drift. That wording likely will include information on allowable particle sizes at which the pesticide can be applied, as well as guidelines on buffer zones to minimize drift.

After those DRT policies are in place, research will be needed to determine each pesticide's potential for drift, taking into account application speed, pressure, nozzle selection, tank mixtures, wind speed and more.

Plans at West Central are to build a system of two drift tunnels, which would be only the second in the country to conduct such research.

This will be the first commercial testing wind tunnel facility in the U.S.

Kruger noted that this new research will build on years of pesticide research at West Central. The center already has considerable technology in place as well as thousands of acres of land for field research and greenhouse facilities.

The drift tunnels, which will take about eight months to build, will have variable speed fans at one end to simulate wind flow and scrubber systems at the other to prevent contamination of the environment by the pesticides being tested.

Plants, insects and other living specimens will be placed in the tunnels for application and a laser will be used to determine particle size.

One tunnel–48 feet long, 4 feet wide and 4 feet tall–will be used to test low wind speeds, zero to 25 mph. The other–at least 30 feet long, one foot high and one foot wide–will be capable of testing winds up to 220 mph, which will enable researchers to replicate aerial application conditions.

The tunnels will cost about $1.2 million to build, to be funded by BASF, Winfield Solutions and the Wilbur-Ellis Co. Other support is being provided by UNL Extension and Agricultural Research Division, both part of the Institute of Agriculture and Natural Resources.