Statement from Steve Strauss, Distinguished Professor, OSU / HB 2469

Dear Chairman Clem and distinguished committee members and guests:

I have come up to Salem to testify against this bill from the viewpoint of a working biotechnology researcher and teacher. I speak as an individual scientist and citizen; I do not speak for OSU or as an employee of OSU. Later today, I will provide similar comments to the house judiciary committee meeting in relation to HB 2739 on legal remedies against admixture of biotech and non-biotech crops.

At OSU, I have conducted biotechnology research on tree crops, and taught undergraduate and graduate classes on biotechnology and society, for two decades. I was director of the OSU Outreach in Biotechnology project within the College of Agricultural Sciences for 8 years, and have been invited to take part in numerous local, state, federal, and international conferences on tree and crop biotechnology, including to be a member of the State of Oregon Governor's Task Force in from 2012 to 2014. I am here because I believe that I know this area pretty darn well, from the science to the applications to the social dimensions. Today I will give a broad view of crop improvement past and future, and where biotechnology fits. I will let others tell you about how Oregon is managing coexistence among different types of farming, and of the economic and legal issues thereof.

Genetic modification is the basis of civilization. You heard it right. Genetic modification is the basis of civilization. Without the extensive modification of most of our wild plants and animals to make them suited to cultivation we would not have anything resembling today's agricultural productivity, and we therefore would not have cities and laws and all the benefits we take for granted every day. And in making these modifications we have taken the best plants and animals from wherever we could find them, moved them all over the world, hybridized and propagated them, and continue to do this at an increasingly rapid rate today. Obviously this is in no sense "natural," though those against biotechnology will often tell you so in an effort to stigmatize the newer forms of genetic modification. And they will often tell you that patents are bad and only undertaken by evil corporations, but they are in fact widely used to promote investments in new science and technology of all kinds. Patents are of course widely used by plant breeders and crop biotechnologists, including those working on Oregon crops at OSU.

Although genetic modifications have been major contributions to agricultural development for thousands of years, for the majority of our history we have not had the benefit of science to tell us what we were really doing, and of course we did it very slowly and inefficiently. Increasingly we have such knowledge. Why should we not be able to use it in the most innovative ways possible?

In my laboratory at OSU we work on a new and exciting family of methods called "gene editing," where changes to DNA are directed with a precision and efficiency never before possible. This technique has been the subject of extensive news coverage, including a feature on the cover of Time magazine. USDA has already ruled that many forms of gene editing are

essentially just new and more targeted forms of conventional breeding, and has chosen not to regulate them at all. There are many new applications of these methods relevant to important Oregon crops—including wheat, grapes, potatoes, and corn—that have been demonstrated in research. And they include many traits of obvious benefit to us all, including pest resistance, productivity enhancement, and improved nutrition. I know that many farmers, organic and otherwise, are interested in taking advantage of this new and revolutionary method for modifying native genes. Unfortunately, this distinction is not considered by HB 2469; it treats all forms of advanced biotechnology as one thing. A stance that is directly against the global scientific consensus that it's the product, not the method, of genetic modification that matters to food safety and public benefit. Why should there be legal prejudice against the most advanced and precise methods for modifying the native DNA of crops, especially as the bill allows all other forms of breeding, including random mutagenesis with chemicals and radiation? As a scientist, it just makes no sense.

Gene editing and related methods are not going away; their potential and efficiency is too great. So my question for all of us here today, and to all in Oregon, is do we wish to further stigmatize and penalize such advances? Do we wish to slow down, or perhaps completely stop, such scientific innovations that can benefit farmers in Oregon? Do we wish Oregon agriculture to be known for exclusions that are against the scientific consensus, rather than innovations based on the best science and the most precise technology? Should we not instead be working to promote coexistence so consumers and farmers have a full suite of options, without the fear of prosecution or lawsuit?

I am fully in support of all forms of Oregon agriculture, and that farmers work hard to be good neighbors. But I am not in favor of one form of agriculture, informed by what I consider to be unscientific and short term perspectives, having dominance over others.

Thanks much for considering my views.