

Potential Impacts of Hydraulic Fracturing on Agriculture

Soil Contamination

Explosions, spills, flares and leaky gas pipes are all shown to have negative effects on agricultural soils. One study shows that gas flaring adversely affects soil fertility; causing the soil to become more acidic and reducing total organic carbon, nitrate, and phosphate content. Another study reports that methane from pipeline leaks changed the oxygen and bacterial composition of the soil, and altered a plant's ability to fix nitrogen, to successfully complete cellulose conversion, and to maintain an adequate hydration level.

Radioactivity

Naturally occurring radioactive materials (NORM) has contributed to widespread contamination of oil and gas production areas. In some cases contamination may be severe. In addition, some shale basins are very rich in Radium 226. Uranium, radon and other radioactive decay products may be prevalent in the air, in soils and even in drinking water at or near natural gas sites. Taken up by plants, these radioactive elements bioaccumulate in the foodchain, eventually appearing in milk and dairy products.

Heavy Metals

Similarly, heavy metals like strontium, arsenic, barium, cadmium, chromium, lead, and mercury may be found in drilling waste and can be absorbed by plants and incorporated into the food chain. While it is possible to decontaminate soil, it takes a minimum of four years of specific successive plantings to get these metals out.

Soil Erosion and Compaction

Soil erosion from well site construction is not as detrimental as compaction from hundreds of heavy truck trips, but in either case, farmers are finding restoration difficult, if not impossible.

Farmland Fragmentation

Every time a well pad or access road cuts across a farm field, it fragments productive farmland. As parcels become smaller there are fewer contiguous acreage available to operating farms. Eventually farms may become too small to operate profitably. As farms go out of business, the critical mass to economically support related businesses is reduced. Loss of those businesses leaves remaining farms without nearby supply or service providers. As a result other farms will inevitably fail simply from being caught up in the spiral.

Water Usage

The natural gas industry points to agriculture's water usage, but in making a comparison neglects to mention that their use is a consumptive one. Water used in agriculture remains in the hydrologic cycle, while most water used in gas drilling is lost forever.

Ozone Impacts & Decreasing Crop Yields

Gas drilling emissions lead to increased ground level ozone. Many long-term studies document serious impacts to agricultural productivity due to ground level ozone on. A declining crop yield depends upon the specific crop sensitivity. Loosing such crops would harm farmers economically and negatively impact food production.

Falling Reproductive Rates

At least 40% of the chemicals used for fracking are known endocrine disruptors. Scientific findings indicate adverse effects of endocrine disruptors on reproduction by affecting male fertility and the ability of a female to carry an embryo. Benzene, a volatile organic compound is easily absorbed through inhalation. Besides causing cancer it is the leading cause of abortions, fetal death and irregular cycles. It is the primary reason for breeding failure. It has been found in the blood and urine of livestock and humans living in close proximity to a natural gas field. If

Livestock Poisonings

Livestock often drink surface water from ponds and streams which is easily contaminated in the process of handling fracking fluids at the surface---injecting, withdrawing, collecting, storing and disposing of massive amounts of highly toxic liquids. Small spills can have very big effects on livestock by contaminating their drinking water or the grasses that they eat. Livestock are attracted to the saltiness of these fluids. There are growing documented reports of livestock illness and death from acute toxicity poisoning from exposure to these spills.

Toxic Compounds Throughout the Foodchain

Bioaccumulation is the process by which compounds accumulate or build up in an organism at a rate faster than they can be broken down by the body's liver. Toxic chemicals and radioactive elements taken up by and accumulated within plants travel throughout the food chain from one living organism to the next, eventually reaching human consumers.

Inadequate Food Safety Inspections

Most food is NOT adequately inspected for chemical residues. Even in cases with known exposure to fracking chemicals, there is no system in place for the testing of affected crops or meat for such toxins. The Government Accountability Office reports that the National Residue Program - responsible for monitoring chemical residues - is missing known heavy metal residues and chemicals present in meat and poultry. The USDA, FDA, and EPA, all responsible in part for the program, may not have complete information on fracking chemicals; therefore, the extent to which potentially harmful fracking chemicals may affect our food are unknown. Some food buyers are already raising concerns about the safety of food produced in close proximity to fracking activity.

FRACKING IN OUR FOODSHED



Photo by Sue Smith-Heavenrich

Could Local Food Production Be Impacted by Natural Gas Drilling?

You can help. Get involved. Find an organization near you at:
www.GasMain.org

Sources quoted can be found at:
<https://acrobat.com/app.html#d=cx0ZyEPSWPh9WxIjwDJbTA>