

agronomynews

Colorado Chemsweep - 1997 Statewide Sweep

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Colorado Chemsweep successfully disposed of 23,248 pounds of waste pesticide in October/November 1997. Participants in 25 counties were able to dispose of banned and unwanted pesticides for under \$3 per pound, thereby reducing their future liability for the chemicals.

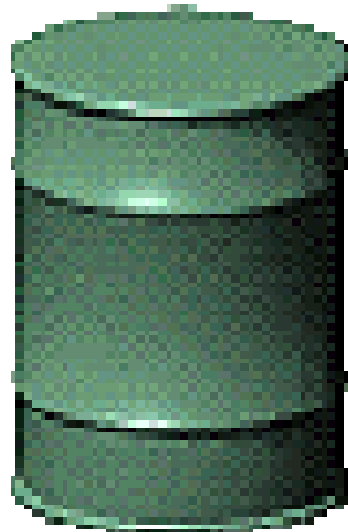
MSE Environmental conducts Chemsweep under the "Universal Waste Rule" which allows their company to enter a site, properly package the waste, take possession of the waste, and become the generator of the waste. There were no problems for participants on either sweep, and MSE incinerated 99.99 percent of the chemicals they collected.

This second Chemsweep brings the total waste pesticide disposal in 29 Colorado counties to 50,904 pounds since 1995. In March 1997, 10,656 pounds of pesticides were collected in 11 counties. A

pilot program in 1995 gathered 17,000 pounds of pesticides in four counties.

In 1994, Colorado Agricultural Statistics Service (CASS) surveyed

pesticide operations to determine the quantity of EPA suspended or prohibited pesticides in Colorado. At that time, approximately 57,000 pounds of unwanted pesticides were reported by the 12,139 respondents. We encourage those



who are still holding banned and unwanted pesticides to take advantage of this low-cost program for disposing of potential liability problems.

Cooperative Extension's role in Colorado Chemsweep is to provide promotion and outreach.

Sandra McDonald

Chloride Quest : The search for Chloride Deficiency in Colorado Wheat Fields

Reports of wheat yield responses to chloride (Cl) fertilizer have flourished in the past several years. These reports have come from South Dakota, Kansas, and Montana, as well as Canada and Australia. Should we be on the lookout for Cl deficiency here in Colorado?

The impact of Cl on wheat yield is usually indirect, through suppression of leaf and root diseases. In

general, take-all and leaf spot complexes are not as prevalent in Colorado and as a result there has been less research on Cl response in wheat. Some wheat varieties are more tolerant of low CL levels than others. Most varieties that have shown yield response to Cl fertilization (Cimarron, Karl92, Kestrel, Redwin, Sierra, Promontory, and Manning) are not commonly grown in Colorado. Weather has an important effect on symptom development; cool, wet weather increases incidence of symptoms. These factors make Cl deficiency a very difficult problem to diagnose.

Figure 1: Cl levels observed in soil and plant tissue from these nine sites do not explain the poor growth or in-field variations. To view figure, go to

The keys to diagnosis are soil testing and plant analysis for Cl. The critical level for whole plant Cl analysis is 1,500 ppm (prior to head emergence). Soil test critical levels have been reported as 1 ppm in Montana and 5 ppm in South Dakota.

This past summer we went looking for Cl deficient wheat. We sampled nine wheat fields in Weld, Morgan, Adams, and Washington counties with the help of Bruce Bosley, Ron Jepson, and Stan Pilcher. Each field had poor wheat growth in part of the field, and we sampled whole

plants from the poorest part of the field (where plants were stunted and chlorotic), the best part, and a moderate section in between the two extremes.

Two of the nine fields we sampled had plant Cl levels less than 1,500 ppm. None of the fields sampled had soil Cl levels less than 1 ppm; however, four of the fields had soil Cl levels less than 5 ppm. One of these fields also had plant Cl levels below the critical level, and we noted the presence of Septoria leaf spot. However, this leaf spot may actually have been what is known as physiologic leaf spot, which has been related to Cl deficiency.

There was no significant difference in plant or soil Cl levels between the best and worst looking parts of the field. Clearly, the Cl levels observed in these soils and plant tissue do not explain the poor growth or the in-field variability. Because of the other factors which impact Cl uptake, plant Cl levels were not significantly correlated to soil Cl levels (Figure 1).

So... what's our conclusion???

Well, at this point, we're not ready to jump on the fertilizer Cl bandwagon. We intend to go back to the fields with low plant Cl levels for a follow-up evaluation in 1998.

Jessica Davis and Merle Vigil

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Testing Hay to Determine Forage Quality

Drilling fluid (mud) is a common waste material from the oil and gas drilling industry that contains mainly production water, bentonitic clays, formation cuttings, barite, Na compounds, and synthetic organic polymers. The Colorado Oil and Gas Conservation Commission (COGCC) has rule making authority over drilling fluid disposal. Crop-land application is one accepted method for disposing of this material and is common in many agricultural areas with a high density of drilling activity. Land owners are usually compensated for allowing drilling fluid application on their property.

The COGCC adopted new rules for application of drilling fluids at a November 24, 1997 hearing, and these rules became effective December 30, 1997. The new rules continue to require written authorization from the surface owner. However, they now require the drilling operator to retain responsibility for land application of the drilling fluids. The actual application of the material is usually contracted to an outside hauler.

The rules limit the amount of drilling fluid that can be applied, specify that application must prevent ponding or erosion, and require soil incorporation. The rules also specify limits on the resulting concentrations of various contaminants in soils following application. These contaminants include: total

petroleum hydrocarbon (TPH), benzene, toluene, ethyl benzene, xylene, sodium adsorption ratio (SAR), pH, salinity (EC), Cl, SO₄, boron, barium, and 10 heavy metals. However, testing of the drilling fluid and the soil for these contaminants is not required and these limits will only be enforced on a complaint driven basis. Research has shown that the primary contaminants of concern for crop production following application are total salts and sodium.

If you have any questions or concerns regarding these new rules or application of drilling fluids in general, contact Troy Bauder at (970) 491-4923 or the COGCC at (303) 894-2100.

web sites

Looking for information on water quality, soils, or the latest corn trial results? It's on the web! Colorado State University cooperative Extension has added two sites and updated test results. Visit:

[Http://www.colostate.edu/Depts/SoilCrop/extension/WQ/index.html](http://www.colostate.edu/Depts/SoilCrop/extension/WQ/index.html)
For water quality information and water quality links.

[Http://www.colostate.edu/Depts/SoilCrop/extension/Soils/index.html](http://www.colostate.edu/Depts/SoilCrop/extension/Soils/index.html)
For soils information, upcoming soils events, and soils links.

[Http://www.colostate.edu/Depts/SoilCrop/extends.html](http://www.colostate.edu/Depts/SoilCrop/extends.html)
for latest crop testing results.