



Parks and Open Space

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TO: Board of County Commissioners

DATE AND LOCATION: Tuesday August 25, 2009, Commissioners Hearing Room, 3rd floor
Boulder County Courthouse, 1325 Pearl Street, Boulder, CO

AGENDA TITLE: Roundup Ready Sugarbeet Request

PRESENTER: Tina Nielsen, Special Projects Manager, Boulder County Parks and Open Space

ACTION REQUESTED: Decision

Background

In December 2008, a group of six Boulder County Parks and Open Space (BCPOS) Agricultural tenants submitted a request to raise Roundup Ready sugarbeets on open space properties they lease, in accordance with the GMO protocols adopted by the Board of County Commissioners in 2003. The GMO protocols allow three varieties of genetically modified corn to be grown on county land, and require Commissioner approval for any other GMO crops.

Staff has been working with the two advisory committees to the Parks and Open Space Department: the Parks and Open Space Advisory Committee (POSAC) and the Food and Agriculture Policy Council (FAPC). Staff has taken several steps to help advisory board members formulate a recommendation to the BOCC on this matter:

- Joint study session on May 28, to present background information and identify questions.
- Roundtable discussion with several experts and two of the applicant farmers to brainstorm potential alternatives to sugarbeets, on June 12.
- Field trip for board members to visit the fields where conventional and Roundup-ready sugarbeets are grown, on July 15.
- POSAC hearing on July 23 and FAPC hearing on July 30 to answer questions raised at the joint study session and provide a recommendation.
- In addition, Sandy Cruz of the FAPC hosted two community meetings to brainstorm and explore further crop alternatives on August 4 and August 11.

BCPOS staff has researched the growers' claims regarding the benefits of Roundup Ready sugarbeets and investigated the questions and concerns raised about GMO technology through literature searches and consultations with research scientists and a variety of experts. We have documented our findings and provided research materials to the two advisory committees and posted them on our website. All the supporting documents are provided as attachments to this memo.

Sugarbeet Growing Practices

The staff compared Roundup Ready sugarbeet production with conventional sugarbeet growing practices (as far as we know, sugarbeets are not grown organically). Sugarbeet cultivation is management and labor intensive, and weed control is a paramount to crop success. Under conventional practices, weed control is a delicate balance between killing the unwanted weeds and not unnecessarily harming the sugarbeet seedlings. This is accomplished with a several applications of several different herbicides. At a certain point in the growth process, herbicides are no longer effective and hand labor is required.

Benefits and Concerns of Roundup Ready Sugarbeets

Roundup Ready sugarbeets are genetically modified to resist the herbicide glyphosate (the active ingredient in Roundup). The United States Department of Agriculture deregulated Roundup Ready beets in 2005 and they were first grown commercially in 2008. Over 90% of sugarbeet crops under cultivation in the U.S. this year are Roundup Ready sugarbeets. Application of Roundup kills the weeds but not the sugarbeet crop, simplifying the growers' job considerably. The benefits are decreased herbicide toxicity on the plants and soil, increased yields and increased profits.

Since the introduction of herbicide resistant technology in the 1990s, concerns have been raised about many aspects of the technology. Many of these points have been raised by the Center for Food Safety (included in Attachment A: Attachments S and T to staff white paper). The two main concerns that pertain to Roundup Ready sugarbeets are gene flow and weed resistance.

Gene Flow. Since sugarbeet is a biennial plant that flowers in the second year, there is minimal risk of cross-pollination/gene flow. A very small percent of plants will send up bolts in the first year. The bolted plants are readily visible since they quickly grow to a much greater height than rest of the crop. The seed producer and Monsanto require growers to check for bolted plants and rogue them. One of the recommended conditions of approval is a requirement to monitor and rogue for bolted plants every two weeks.

Weed resistance is a concern in parts of the world where several Roundup Ready crops are planted in succession (e.g. Roundup Ready corn, followed by Roundup Ready soybeans, then Roundup Ready canola). There are no known cases of glyphosate resistance in Colorado. Crop rotation practices will minimize the chances of such weed resistance developing. BCPOS recommends requiring crop rotation/herbicide rotation for resistance management as a condition of approval.

Discussion

Boulder County's mission is to steward the public's land, as spelled out in the Boulder County Comprehensive Plan:

Open Space Policy 2.03.03: Management of individual open space lands, including those under agricultural leases, shall follow good stewardship

practices and other techniques that protect and preserve natural and cultural resources.

This concept is central to the Parks and Open Space Mission and Goals:

Parks and Open Space Mission: To conserve natural, cultural and agricultural resources and provide public uses that reflect sound resource management and community values.

Goal #6: To promote and provide for sustainable agriculture in Boulder County for the natural, cultural and economic values it provides.

Sustainability is often represented as a stool with three legs: environmental sustainability, economic sustainability and social sustainability. While BCPOS does not have a formal sustainability policy at this time (this work is currently scheduled for 2011), BCPOS follows and seeks to encourage sustainable agricultural practices in all three of these dimensions.

How do Roundup Ready sugarbeets fit into the sustainability framework? A full discussion is contained in Attachment C (Attachment 1 to POSAC and FAPC memo, “Responses to Questions from May 28, 2009 Joint Study Session”) and summarized here:

- From an environmental sustainability perspective, using Roundup Ready technology results in a reduction in the number and toxicity of herbicide applications compared to conventional practices. Roundup Ready also complements strip tillage practices, which result in lower energy/fuel consumption, increased soil and water conservation, and improved carbon sequestration.
- From an economic sustainability perspective, Roundup Ready technology reduces costs of weed control and enhances yields, thus increasing profits. It enables the farmers to continue raising sugarbeets in the possible absence of reliable supply of conventional seed. This helps with risk management through diversification in the crop portfolio, and ensures that farmers will meet their sugarbeet coop obligations. Further, sugar beets are the most economically productive crop in cropland rotation; the net return from sugarbeets is often 3 to 6 times the net return on other crops in rotation, including wheat, barley and corn. While other crops are susceptible to harsh weather, beets are a root crop that can survive severe events.
- From a social sustainability perspective, access to federally approved technology improvements is equitable, and it helps maintain stable farm incomes. This helps to ensure the ability of family farmers to continue to make a living farming in Boulder County.
- The county’s leadership responsibility lies in ensuring that the environmental safeguards are in place as new technology is adopted. In addition to existing lease requirements regarding soil and water conservation and weed control, POS seeks to ensure responsible use of Roundup Ready technology through conditions of approval that address notification, prevention of weed resistance, and protection of aquatic habitats.
- In summary, Boulder County’s agricultural tenants are our “partners in conservation.” They provide a vital service caring for the public’s lands. It is in the county’s interest to ensure that they are economically viable so that they will continue to farm Boulder County lands. If farmers can’t make a living farming on open space land, we will have a difficult time keeping farmers on open space land.

Another way to consider the request is to compare Roundup Ready sugarbeet technology with Roundup Ready Corn technology, approved in 2003. Compared to Roundup Ready Corn, Roundup Ready Sugarbeets have minimal concerns.

POSAC and FAPC Recommendations

POSAC voted 6 to 1 in favor of the request at their hearing on July 23, with one member abstaining and one member absent but sending in a message in favor of the staff recommendation. Most POSAC members expressed that this was a very difficult decision, but those voting in favor stated that their recommendation was based on practical considerations and desire to ensure farmers can continue to make a living farming on county open space. The member voting against the request expressed discomfort with the technology, and the abstaining member expressed a hope that this would be an opportunity for the community to come together to find a better solution.

FAPC voted 10-3 against the staff recommendation at their hearing on July 30. Several FAPC members expressed a sentiment that the community has many misunderstandings about farming, and that weed control on this scale is daunting. FAPC members voting in opposition to the request stated a desire to address the request in the broader context of a policy dealing with GMOs rather than piecemeal; many cited too many questions about the technology, including long term health and environmental effects; and concerns about the impact on Boulder's reputation as a center of organic and natural businesses. Those voting in favor of the request stated that federal regulatory processes are in place to evaluate and approve the technology, that farmers should have access to the latest technology available on the market, and that fears about possible negative impacts are falsely overshadowing the positive aspects of this technology.

Staff Recommendation

The Roundup Ready sugarbeet request has generated significant community interest and raises questions about the role of agriculture on public land. One of the questions for the BOCC to consider is whether we want our farmers to continue to be able to raise commodity crops on county land. If the answer is yes, the staff feels that Roundup Ready technology has a place in the toolbox for county farmers and after evaluation and appropriate conditions, if necessary.

The staff compared the Roundup Ready sugarbeet production with conventional sugarbeet growing practices and finds that using Roundup Ready sugarbeets offers a number of benefits over conventional practices. Therefore, Parks and Open Space recommends approval of the growers' request to plant Roundup Ready sugarbeets on Boulder County land, with the following conditions:

1. Notification. BCPOS growers are required to notify Parks and Open Space Agriculture staff by February 15 of their plans to plant Roundup Ready sugarbeets. BCPOS growers are required to keep BCPOS staff informed of any changes in their plans.

2. Prevent Gene Flow. To prevent any possibility of gene flow, BCPOS growers are required to check crops for rogue bolts every two weeks at a minimum, and promptly remove any bolted plants found.
3. Resistance Management. To prevent development of weed resistance to glyphosate, BCPOS growers are required to rotate to a non-Roundup Ready cropping system in the year following a Roundup Ready crop. If this is not possible and Roundup Ready cropping is done in two consecutive years then a field must stay out of Roundup Ready cropping system for two years before returning to a Roundup Ready crop. In years out of Roundup Ready crops weed control in a field may not include glyphosate.
4. Protect water quality and aquatic habitat. BCPOS growers are required to leave a 50-foot buffer free from Roundup Ready sugarbeet plants around areas of surface water, including rivers, streams, main ditches, lakes, ponds and wetlands. (In response to public concerns, we have added main ditches to this condition. This condition does not pertain to ditch laterals for several reasons: laterals are dry most of the time, running on average once a week; the water in ditch laterals does not run back into the main ditch; and it is illegal to overspray Roundup on water by federal regulation.)

Alternative Staff Recommendations

BCPOS staff acknowledges and appreciates the community interest in the Roundup Ready sugarbeet request and the concerns regarding genetically modified organisms. This process has resulted in a huge learning curve for the community, staff and growers. There has been an outpouring of sentiment in favor of organic production on county owned land, and while BCPOS heartily supports that goal, it is not possible for all county land to be farmed organically in the near term. A summary of our initiatives in support of organic agriculture is included in Attachment E.

While BCPOS continues to support the growers' request, in light of the significant interest expressed by the community and in acknowledgement of the desire to step back and address the bigger picture of genetically modified products, the staff would like to offer these alternatives for consideration.

1. Delay decision to allow for additional consideration:
 - a. POS is scheduled to develop a management policy for agricultural croplands in 2011. This policy will address agricultural sustainability and could address GMOs on County land.
 - b. Form a task force to work on a broader policy regarding GMOs including both conventional and organic interests.
2. Delay decision with limited conditional approval for Roundup Reach Sugarbeets. Some options to consider:
 - a. Limit the total acres that farmers could plant in GMOs. We currently have 1,518 acres of Roundup Ready corn planted on open space property (plus 650 acres of conventional corn), and staff would recommend setting a 2010 and 2011 limit of 1,200 acres, thereby reducing GMO acreages but giving individual farmers the

ability to choose which GMO crop best suits their operation. GMO acreages after 2011 would be addressed in the agricultural cropland policy. This would then give the farmers time to respond to the new policies.

- b. Limit the acres of Roundup Ready sugarbeets to the minimum necessary to satisfy the coop obligations. This acreage would vary by grower and the total would amount to between 400 and 500 acres.
3. Regardless of the decision on RR Sugarbeets, commit to additional sustainability investments in agricultural infrastructure. If the open space sales tax passes, the county will have the resources to fund up to 15 additional center pivot sprinklers. BCPOS currently has invested in center pivot sprinklers on 12 properties, covering over 1,600 acres of cropland. At an average of 130 acres, an additional 15 center pivot sprinklers would cover approximately 2,000 acres of cropland. One of the challenges our farmers contend with is the heavy weed seed load delivered through irrigation ditches. The settling pond typically used with a center pivot sprinkler system provides the ability to screen out a large portion of the weed seeds. Center pivot sprinklers also contribute to improved sustainable practices through increased water efficiency and reduced tillage, which helps the soil retain carbon, and reduced emissions from tractors. Center pivots help in the context of conventional agriculture and organic agriculture.
4. Regardless of the decision on RR Sugarbeets, work with organic operations such as Aurora Dairy and other large scale buyers to transition large parcels to organic production. The ability to succeed with this strategy depends on identifying markets in which prices are sufficiently competitive to make the transition to organic economically feasible for the growers.
5. Additionally, POS would continue to work on initiatives to increase organic production on county open space lands. This includes continued expansion of small parcel farming opportunities for local food production and working with farmers to pursue and develop organic crop markets, and continuing the community brainstorming efforts.

BOCC Action Requested: Decision

ATTACHMENTS (available at <http://www.bouldercounty.org/openspace/Sugarbeets.htm>)

- A. May 28, 2009 POSAC & FAPC Joint Study Session packet materials
- B. Packet materials from the POSAC hearing (7/23/09) and FAPC hearing (7/30/09) along with audio recordings of the committee discussions and recommendations
- C. Materials entered into the record from members of the public presented at the POSAC and FAPC public hearings
- D. Correspondence (due to the volume, this includes only the correspondence received after the July public hearings with POSAC and FAPC. All the correspondence is posted on the Parks and Open Space web page <http://www.bouldercounty.org/openspace/Sugarbeets.htm>)
- E. Summary of BCPOS initiatives to increase organic production on county open space