

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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MINUTES OF HAND WEEDING ADVISORY COMMITTEE
MARCH 24, 2003

Heidi Smith, Counsel, called the meeting to order at approximately 10:15 a.m. Also present from Board staff were Michael Manieri, Principal Safety Engineer, Tom Mitchell, Senior Industrial Hygienist and Donna Lively, Staff Analyst. Committee Members present were Emanuel Benitez, CRLA, Inc., Carl Borden, California Farm Bureau Federation, Chris Bunn, Grower, Mark Draper, Del Puerto Harvesting Company, Elizabeth Ecks, California Labor Federation, Robert Falconer, California Association of Nurserymen, Fadi Fathallah, University of California, Davis, Biological and Agricultural Engineering, Roy Gabriel, California Farm Bureau Federation, Bill Hoerger, CRLA, Inc., Anne Katten, CRLA Foundation, A.G. Kawamura, Grower, William Krycia, Division of Occupational Safety and Health, Ted Kubota, California Floral Council, Tom Lanini, University of California, Davis, Jesus Lopez, CRLA, Inc., Richard Matteis, California Seed Association, Mike Meuter, CRLA, Inc., Julie Montgomery, CRLA Foundation, Robert Roy, Ventura County Agricultural Association, Mark Schacht, CRLA Foundation, Rayne Thompson, Agricultural Council of California, Michael Webb, Western Growers Association.

Also present were Mary Jacka, CRLA, Inc., Betsy Peterson, California Seed Association, Steve Smith, Division of Occupational Safety and Health, Celine Garcia, Western Growers Association, Rod Gonzalez, Esparza, Inc. Contracting, Marshall Aguilera, Esparza Enterprises, Aurelio Meno, Esparza Enterprises, Vanessa Bogenholm, California Certified Organic Farmers, Kate Campbell, California Farm Bureau Federation, Kevin Thompson, Cal-OSHA Reporter, Bob Martin, Rio Farms, Wallace Condon, CCOF, Rick Hight, Division of Occupational Safety and Health, Malcolm Ricci, Bolthouse Farms, Ann Thrupp, Fetzer Vineyards, Bob Riddle, ICMCI, George Daniels, FELS, and Paul Underhill, Grower.

Mike Webb, Western Growers Association, summarized the growers' position and stated that: they do not believe there is a reasonable alternative to hand weeding and thinning; long handled tools are widely used and it is the industry standard to use them whenever possible; detached weeds must be picked up and removed from the field; the proposed standard would increase chemical use for all growers and would be particularly harmful for organic growers; the standard would economically harm California agriculture and would result in lost jobs and farms; and the standard is not necessary to protect employees.

Carl Borden, California Farm Bureau Federation, explained that the growers' video presentation would cover a number of commodities, including spring mix, celery, cabbage, green onions, spinach, color pack nursery, container nursery, and parsley. The video footage was taped in

Monterey (spring mix), Ventura (vegetables) and Orange Counties (nurseries). Separate presentations were provided on seed and cut flowers. Mr. Borden explained that the taping opportunities were limited because of the short notice and time of year, so they were not able to obtain footage of as many crops as they would have liked.

Because of background noise on the videotape, and comments made in the room while the video was running, some of the commentary is unintelligible. In addition, the microphone failed to capture some comments made by people at one end of the room. The minutes will attempt to reflect those portions.

Spring Mix (miniaturized salad mix)

The video showed a crew hand weeding miniaturized lettuce. Bob Martin, Rio Farms, narrated and explained that the field had an unusually low number of weeds. The field is a non-organic field, but he noted that it usually has more weeds. Last year, they spent \$1,000 an acre on hand weeding and had large crews dedicated to the work. At times, the weed population is almost as great as the crop population and the weeds can be very small and difficult to see because the crop is so dense.

Mr. Martin explained that the crop is mechanically harvested and stated that the weeds would be harvested with the crop if they were not removed from the beds. The weeds can either be thrown into the furrow or removed from the field entirely. The crop is harvested with something that resembles a band saw blade that lays horizontal and almost touches the ground. If weeds are found in the product, especially weeds such as stinging nettle, the customer will reject the whole field. Mr. Martin explained that the crop is harvested March through November and the weed population tends to increase in the warmer weather. Rain also produces a lot of weeds, because it germinates the weed seed in the ground.

Mr. Martin asserted that the workers must hand weed, because tool use results in removal of two to three crop plants for every weed removed. Mr. Martin stated that they use tools when they can, but there are instances where it is infeasible. Tool use also displaces soil, which contaminates the crop. It is difficult to remove the soil effectively after it is harvested and customers do not like to see dirt in the product because of food safety concerns. Mr. Martin noted that the workers tended to kneel as they moved.

Vanessa Bogenholm, California Certified Organic Farmers, added that organic farmers are held to the same standards of crop cleanliness, but they cannot use herbicides to control weed growth. A.G. Kawamura, Grower, stated that the weed populations vary with the surrounding environment. Factors such as wind can increase the weed population. Also, if the field has a lot of weeds when it is harvested, a lot of seed will be left in the field. Mr. Bob Riddle stated that herbicides have a pre-harvest interval. Because spring mix is often ready for harvest in 20 to 30 days, a lot of herbicides cannot be used.

Celery (Ventura County)

The videotape explained that the plants shown are about four inches apart and, if a hoe were used to try to weed the plants, it would nick the crop, because the weeds grow right next to the crop. The narrator pays his workers by the hour to weed. Some days, the workers weed all day long, which is eight to ten hours of work. Because the farm shown is not a big operation, they do not have a weeding crew per se, so sometimes the workers perform multiple tasks in a day. It would be unusual for them to work more than four or five days in a row weeding. If that happened, it would likely be after a rain when the soil is damp. (commentary unclear). After a rain, there are often days when you cannot weed, so there is more to do when you can. Most of the weeding is done about half-way through the crop growth. (commentary unintelligible).

Mr. Borden commented that the video captures the actual movement of the workers and he noted that the workers in the video were in an upright position much of the time. Mr. Kawamura clarified that the field depicted in the video was a fairly clean field in terms of weed population and suggested that a herbicide likely had been used previously. Mark Draper, Del Puerto Harvesting, commented that fields are rarely weeded one time, because conditions usually preclude removal of all the weeds on the first pass. Rob Roy, Ventura County Agricultural Association, added that herbicides would usually be used followed by long handled tools. Hand weeding is only used when tool use would damage the commodity. Mr. Kawamura stated that most farmers have aggressive weed abatement programs that include cultivation with a tractor and long handled hoes. He noted that weeds are like pests; they carry diseases and serve as a host for insects.

Emanuel Benitez, CRLA, Inc, inquired about the use of modified tools and Mr. Kawamura responded that they can be effective at times, but even a modified tool would damage the crop if the weeds are growing too close to the plants. Mr. Borden noted that spacing the plants further apart would allow for more weed growth and would not eliminate the problem, because the weeds would continue to grow next to the plants.

Mr. Kawamura stated that celery is a tough crop to grow. He noted that the video showed the workers carrying the weeds out of the field and stated that he has done that all day long for many days on end just to get the big weeds that get by the cultural practices. He emphasized the need to get the weeds up off the crop and out of the field, because the weeds can rot and the rot will spread through the field and damage the crop. In addition, a lot of weeds are regenerative; if you cut them at the stem, or leave them in the field, they'll come back. Mr. Kawamura noted that removing them from the field requires the workers to bend. Chris Bunn, Grower, added that carrying weeds and a hoe, and trying to hoe weeds out, can be very awkward and cumbersome for the workers.

Cabbage (Ventura County)

The commenter on the videotape stated that you could not remove the weeds at the base of the plant with a hoe and not injure the plant. The weeds were growing essentially under the outside leaves of the cabbage. The commenter stated that crop yield is important and damaging crop will cost money. He stated that plants can be injured even when hand weeding, because you have to manipulate the plant to see the weed. (Several minutes of tape shown without commentary). Mr. Kawamura explained that spacing plants farther apart in an effort to provide better access to weeds would not work, because, if you give certain plants more room to grow, they will grow large and there is no market for oversized crops. Crops are planted to yield a certain size product. Mr. Riddle reiterated that spacing plants out can also result in greater weed populations. Paul Underhill, Organic Grower, stated that the field shown had almost certainly been hoed previously when the plants were smaller and a hoe could be used effectively.

Mr. Kawamura described the typical weeding sequence for cabbage for a conventional field. The grower will have a cultivation protocol. He emphasized that weeds continue to grow and are an ongoing problem. He explained that, if it rains before the crop is planted, weeds may grow and they can be removed before the crop is planted. Once the crop is planted, additional rains may follow that produce more weeds. A tractor attachment is used to remove the first weeds. While the plant is still a transplant, a crew can use hoes or other tools to remove more weeds, but some weeds will remain. Once the plants are more mature and have filled in the spacing, it becomes necessary to remove the weeds by hand. The alternative is to let the weeds go, and wait for them to produce more seed, which will produce more weeds. Mr. Kawamura stated that hand weeding can be very expensive and no farmer would willingly allow his field to get behind in his weed program, because it would increase cost and reduce yield.

Mr. Draper added that there are two types of herbicides: pre and post-emergence. Post-emergence herbicides are spread on dirt and kill the weeds. On cabbage, you would use a pre-emergence herbicide that you incorporate into the soil. The pre-emergence herbicide kills the weeds as they germinate and the crop is then transplanted into the field. Only a few crops allow for use of a post-emergence herbicide without hurting the crop. Mr. Kawamura also stated that if weeds get to a certain size because, for example, rain precluded earlier weeding, they can become resistant to post-emergence herbicides. Ms. Bogenholm explained that, in organic fields, they use flame to eliminate weeds, but it must be used during a certain window to be effective.

Mr. Martin added that leaving the weeds in the field allows for re-propagation of the seed and some weeds go to seed very quickly, so they must be removed before the wind or birds spread them further. Some weeds, like Malva, are immune to most herbicides, including methyl bromide.

Spinach (Ventura County)

The videotape showed green onions from a prior plant rotation growing among the current crop of spinach plants. Mr. Borden explained that, in this case, the green onion is a weed. Mr. Roy's narration on the tape stated that there was insufficient room to insert a tool to remove the onion without damaging the spinach plant, so hand weeding was needed. Mr. Roy stated that it is

necessary to move the plant aside to remove the weed. The video then showed a gentleman using a long handled tool to weed. The tape discusses the difficulty in removing the weed without damaging the crop. (Unintelligible discussion) A commenter observes that the weed is in the seed line and asserts that no implement would work to remove the weed without damaging the plant. Mr. Roy commented that the grower pulled out several plants while using the hoe to weed and did not appear to get the weed's root base. The commentary is very hard to understand but relates to the need to remove the weeds to the furrow to ensure that they are not harvested with the crop. Similarly, the plants that are pulled up while trying to weed with the tool have to be removed from the crop bed before the crop is mechanically harvested. Otherwise, they will be harvested with the rest of the crop and packaged, but they will have turned yellow.

On the tape, Mr. Roy hand weeded an onion growing inside a spinach plant and commented that it would be impossible to use an implement to remove such weeds without damaging the crop. The video showed the grower attempting to remove the volunteer onions using a hoe in an upright position. The grower commented that he was doing substantial damage to the crop. The commentary is hard to understand, but discusses that hand weeding would not damage the crop.

Mr. Borden tried to use a modified hoe to weed out the onions and commented that he had to work slowly in order to avoid damaging the crop. In one instance, he noted that it was difficult to find the root and stated that the weed was very close to the plant. He asserted that he could have pulled it out by hand. Someone on the tape observed that Mr. Borden was not standing upright while using the hoe. (Overlapping discussion in room and on tape unintelligible) Mr. Roy then began hand weeding, which he was able to do more quickly than Mr. Borden was able to weed with the hoe. Mr. Borden was also damaging plants whereas Mr. Roy was not. Mr. Borden commented that he was going very slowly and stated that he was not extracting the roots. (Unintelligible commentary). Mr. Schacht questioned the value of having Mr. Borden, the Farm Bureau's lawyer, demonstrate use of a long handled hoe and asserted that an experienced, trained worker likely would have been more effective.

Green Onions

The commenter on the tape stated that a hoe cannot be used on the onions without damaging them and asserted that this is true both when the onions are small and big. He stated that no hoe of any kind would work and he attempts to remove weeds growing between plants. Some of the plants were damaged in the process and Mr. Roy observed that the worker was not standing erect while trying to use the hoe. The worker then weeded standing straight and stated that he damaged the onions. While using the hoe, he moved slowly to avoid damaging the plants, but he damaged them anyway. He then weeded by hand.

Mr. Benitez commented on the technique used when using the long handled tools and asked if other techniques were tried. Mr. Kawamura commented that the roots on the weeds are six to eight inches long and stated that a narrow blade would only push the weed to one side or the other. Mr. Kawamura described a tool that could conceivably be effective in actually removing

the weed, but said that he has never seen such a tool. Mr. Martin added that onions and a lot of weeds grow from inside and, if you cut them off at the surface, it might appear that you had an effect on them, but they will come back in a few days. If the weed is snapped off at the ground surface or pulled out at the roots, it will not grow back.

Color Pack Nursery

Mr. Borden explained that the plants in the tape were not displayed as grown, but were set aside to demonstrate use of the long handled tools. He stated that the tape showed a trained worker trying to use a modified hoe. The tape showed a modified hoe moving around in planter containers. Mr. Borden stated that the worker was unproductive in removing the weeds and was damaging the plants. The tape then showed the worker successfully hand weeding. (Unintelligible commentary) Mr. Borden stated that it is not practical to put the plants on benches and someone commented that putting the plants on benches temporarily would still require extensive bending, because the worker would have to bend to get the plant, then weed, then return the plant to the ground. The commenter stated that the plants are originally grown on benches but they are then hardened off to sell them.

Container Nursery

The tape panned some large nurseries. Mr. Borden explained that he attempted to capture the size of some of these facilities, because the size precludes some options such as building trenches for workers to stand in. One of the nurseries on the tape was approximately 200 acres and some are as large as 500 acres. The tape showed a worker weeding some segregated containers with a modified long handled tool and by hand, the former of which was unsuccessful and the latter of which was successful. The worker stated that he did not like the long handled tool, because it was too slow. The tape then showed a worker weeding in the area where the plants are actually grown. Mr. Borden stated that, although the worker proceeded slowly with the long handled tool to avoid damaging the plants, they were damaged. Someone confirmed that the workers are paid hourly for weeding and Mr. Borden said that an hourly wage is industry practice.

Bob Falconer, California Association of Nurseryman, commented that the nurseries on the tape were particularly weedy and noted that weeding at nurseries has always been done by hand for the reasons seen in the tape. He stated that weeding is typically done in conjunction with other duties, such as spacing and turning containers, but sometimes crews just weed. Mr. Falconer stated that little is standard in nursery production: weed population, types of plants and locations all vary, which makes it difficult to establish standards.

Mr. Falconer commented that the video showed containers packed tightly together and said that is typical when plants are young to allow for temperature control and efficient watering. As the plants mature, they are spaced farther apart. With respect to using benches, Mr. Falconer stated that bedding plants are often started on benches. Container nurseries also often begin on benches in greenhouses. Eventually, however, the plants have to be “hardened off,” which means they are

acculturated to the environment they will be used in. That usually means placing them on the ground. In addition, if the plants are put on benches outside, they dry out very quickly and require at least twice the water that is required if they are placed on the ground.

Nurseries start with very clean soil that is sometimes steam sterilized. 95% of the weeds in nurseries are blown in by wind. The weed problems typically start when the plants are moved outside from the greenhouse and, depending on the plant being grown, they are outside for a couple of weeks to a couple of months. Mr. Falconer said that herbicides have limited effectiveness.

Mr. Falconer also noted that state laws govern nursery products and do not permit shipments of weed-infested plants. The laws allow some leeway, but are more restrictive for noxious weeds. Mr. Falconer displayed two plant samples to show how difficult it would be to see where a weed was growing and how difficult it would be to insert a tool in the container. Mr. Falconer also showed some pictures of dense root stock to demonstrate how weeds grow within them. If the plants were damaged or nicked, it could result in serious fungus problems and would prevent sale of the product. If a mature tree is nicked near the ground, it can develop crown gall.

Mr. Falconer also stated that nurseries that plant in the ground typically fumigate the soil. He noted that the trees in the pictures would be sold to farmers and are certified to be free of nematodes. To certify under the applicable regulations, the soil is typically treated with methyl bromide, which kills the weed seed, but even with the fumigant, weeds still develop.

Mr. Falconer displayed some photographs of other nursery productions. The first three showed wisteria growing in the field. The field was fumigated beforehand, but weeds continue to grow. The pictures also showed the spacing of the plants and the weeds growing next to them. The fourth picture showed a lilac propagation and the spacing used there. The last two pictures were of St. Julian semi-dwarf root stock and Mr. Falconer commented that they were rooting the cuttings in five-foot beds. Mr. Falconer wanted to show the diversity of production and stated that weeding other than by hand would be very difficult.

Organics

Several organic farmers described their experiences and practices. Paul Underhill, Organic Farmer, stated that he grows vegetables, fruits and nuts on 150 acres. Mr. Underhill explained that organic farmers are now subject to federal regulations that preclude them from using synthetic herbicides and fertilizers, which excludes use of almost all herbicides. The remaining herbicides would kill the crop with the weeds.

Mr. Underhill stated that organic growers spend a lot of time controlling weeds and do everything possible to avoid hand weeding. He stated that they let fields sit for a month, irrigate them, (unintelligible comments), do it again and try to get more weeds up. They try to protect the moisture in the soil and plant seeds into the moist soil so that the plants germinate without

germinating more weed seeds. They do a lot of transplanting, which gives the plants a head start over the weeds.

They routinely hoe most crops and Mr. Underhill uses hula hoes and hoes of several different widths. He stated that hand weeding costs two to ten times what hoeing costs and they only do it as a last resort. He cited carrots, onions and leek transplants as examples where hand weeding is required. He noted that the crops are fragile and slower growing than the surrounding weeds. They weed when the plants are an inch high. Rather than stand and bend throughout the field, they squat, kneel or sit. It is hard to see the weeds.

Mr. Underhill has a small crew and knows them all by name. They talk about their work preferences and sometimes workers will complain about having to use a hoe. They want to use their hands to do a good job and are worried about damaging crops, because they know they will not be able to harvest the damaged plants later. Mr. Underhill stated that, if a regulation resulted in multiplying the hours needed to perform the work, it would eliminate jobs and farms.

Ms. Bogenholm commented that she has a small operation and grows vegetables and berries. She stated that, like Mr. Underhill, she has to get the weeds out of the way or the crops cannot compete. She stated that the organic industry is in financial trouble, because their margins are smaller than ever. She has a regular core group of employees and has for many years. She discusses different ways to complete the work, including weeding, with them. For weeding, they always use tractors first, always use long handled hoes, always use gloves and knee pads. She tries to make the workers as comfortable as possible to increase effectiveness. Weed control is the hardest thing for an organic farmer to manage and they are always looking for ways to innovate. She stated that the same employees weed and harvest the field and they know that if they get the weeds out of the way, there will be a better crop.

Wallace Condon, Organic Grower, farms a field and grows heirloom cultivars, including potatoes and garlic. Mr. Condon and his wife do much of the work on their land and he has a good weed control program for his potatoes. For the potatoes, he uses a tractor to create furrows and plants in the furrows by hand. The soil is then turned with shovels and a tool bar. As a result, the former furrow becomes a ridge. The potato pieces are five to six inches below the surface, so it takes some time for them to reach the surface. Before the potatoes emerge, he drags chain link fence material behind his tractor and the coils pull up the weeds, which is fairly effective. As the potatoes emerge, he can keep the furrows clean with his tractor and he can hoe between the potatoes. He uses a hula hoe, which makes it easier to see the cutting edge and makes it easier to avoid damaging the stem of the plant than would a single stem hoe. Sometimes, however, he still needs to hand weed. He noted that some weeds grow just below the surface and if you reach just below the dirt, you can extract the whole root. That is the best approach, because the weed cannot re-propagate.

For garlic, the weeds grow very close to the plant. Mr. Condon asserted that this is because the plant is like an inverted umbrella that allows water to collect and drip down the stalk, which

provides moisture for the weeds. The garlic is planted more densely than the potatoes and is planted in the fall and irrigated. Planting at other times has been unsuccessful. This year, he was able to use a tractor and a hoe for a while, but when the rain started, he could no longer use the tractor because of the heavy clay in the soil. When he was able to return to the field, the garlic was hard to find among the weeds. Mr. Condon explained that garlic grows a few inches up and then stalls while it grows its root system. In the meantime, the weeds continue to grow. Mr. Condon stated that, if the soil is moist enough, you can get the root out when you weed, but if the soil is dry, it will break off and grow back.

Next year, in an effort to resolve the weed issue for the garlic, Mr. Condon will try planting buckwheat with the garlic. The buckwheat will die in the frost and lay down, which he hopes will serve as a weed suppressant like mulch. He also attended a workshop that addressed weed control, including the use of flame and heat. He bought an infrared instrument that is heated with propane, which, if used correctly and at the right time, should burn the weeds, but it does not work on large weeds. Mr. Condon stated that organic farmers are probably doing more than anyone else to try to control weeds. Sometimes, it is necessary to weed by hand and if that is prohibited, a farmer might as well write off his investment, which can be substantial.

Malcolm Ricci, Organic Farmer, works for Bolthouse Farms, a top carrot producer in the country. Mr. Ricci has extensive experience in this area and described the efforts made to control weeds. He stated that they pre-irrigate. In a conventional field of carrots, they can employ a variety of tactics, including discing the field, germinating the weeds, discing again, pre-planting, and bedding it. They also have pre-plant and post-emergence herbicides available. Despite these tactics, they still require occasional hand weeding crews.

In an organic field, they try to get on the land a year in advance, but it is usually closer to six months. They do the same land preparation and try to germinate as many weeds as possible before planting. They pre-shape the bed three to four weeks before planting in order to germinate weeds and then irrigate again. They designed a special machine to lift approximately two inches of soil, which uproots the weeds. They then plant the carrots and irrigate. If more weeds emerge before the carrots, they use a propane torch they developed to burn off the weeds. After the carrots come up, however, they have to use hand weeding. After the weeding crew passes through the field, weeds continue to emerge and they use a specially designed cultivator three or four times to remove those weeds. The cultivator is designed to avoid lifting more weed seed. Mr. Ricci stated that this is a five to seven month process.

In addition to the cultural practices, they use rotational practices. They grow cover crops and they look at planting cash crops, such as barley or safflower prior to the carrots to suppress the weeds. They have also looked at planting mustard, which produces a chemical that they hoped would suppress weed growth.

Mr. Ricci stated that carrots are planted very densely. The plants grow 1 million to 1.5 million per acre and there are approximately 40 to 60 plants within a five-inch by twelve-inch area. He

asserted that it is difficult to eliminate a weed that is 1/4 to 1/8-inch from a carrot plant from a standing position with this crop density, especially if there are multiple weeds in the area. He has yet to see a tool that would allow for that. Mr. Ricci stated that they have ways to control pests and disease, but their options with weeds are limited. If they cannot hand weed, the economic consequences would be tremendous. They could lose the crop, which would amount to \$2,500-3,000 per acre or they could experience reduced yield. They do not like hand weeding, but they have no choice.

Mr. Schacht asked about the factors that drive the crop density. Mr. Ricci indicated that the number of carrots per foot is determined by the type of carrot grown and yield. They plant to continue to make a profit, which is often difficult to do. A comment was made that greater density also helps crowd out weeds. If space is left, something will grow and it will likely be a weed. Mr. Ricci agreed.

Ann Thrupp, Fetzer Vineyards, stated that Fetzer grows approximately 2,000 acres organically. She manages Fetzer's organic development and also works with other growers. She stated that the industry consists of small and large-scale growers and asserted that the proposed standard would affect them all. Other growers who heard about the standard called her to express concern. Most organic growers grow grasses, oats, barley or rye during the off-season to suppress weed growth. Weeds that grow under the vines must be removed or they present too much competition for the vines. Organic growers use a cultivation tool that goes under the vines whereas conventional growers spray herbicides. Organic growers then do clean up or spot weeding where workers use a long handled shovel. They do have to bend over to remove the weeds, though. These crews perform a variety of other tasks, too. The amount of weeds varies. (Commentary unintelligible). Ms. Thurpp expressed concern for the workers, acknowledged the value of their backs and stated that they have no interest in harming their relationship with their workers.

Ms. Bogenholm added that the Santa Cruz wineries cannot use tractors, because of the mountainous terrain. They have newly planted vines that they just brought from France that would not withstand damage from a hoe and they are very concerned about this issue.

Seed

Richard Matteis, California Seed Association, stated that they grow seed for over 400 commodities that are regulated by law in addition to flower species. They confront every type of growing condition and weed condition imaginable.

Betsy Peterson, CSA, narrated a power point presentation and commented that seed is very strictly regulated. It must, among other things, be pure and free of diseases. It can be difficult to assess the purity of a crop until it is mature. If a rogue plant is found, it must be thinned or rogued out. The label must describe, by percent, the weed seed in the seed packet produced for sale. The label must also describe the amount of restricted weed seed per pound and the amount

of other crop seed found. Growers are allowed approximately one off-type plant per ten thousand when producing seed. Ms. Peterson stated that it would be difficult to remove the plant shown in one picture with a hoe because it is densely planted. It would have to be removed by hand. Mr. Matteis noted that buyers will sue them or refuse to pay for the product if they find something in the seed that they do not like. He stated that crops are hand groomed for lettuce mosaic and explained that the allowance for lettuce mosaic is 0 in 30,000.

Weeds also pose problems. Ms. Peterson showed a picture of dodder, a restricted, noxious weed that attaches itself to the plant. If a noxious weed is found in any lot of seed for sale, it is disallowed. The weed must be physically removed from the field, or it will leave its seed in the field and reproduce. Nightshade is another weed that is not restricted, but is problematic, because it will discolor the crop if it is not removed before harvest. Another picture showed an artichoke plant growing in a wheat field and Ms. Peterson stated that it would damage the harvester if it was not removed prior to harvest and it would count against the grower when he tried to label his seed. Most seed production is also mechanically harvested. Anything that is not removed from the field prior to harvesting will be included with the harvest.

Ms. Peterson showed a picture of barley growing in a wheat field and noted that their seeds are about the same size, which would make it difficult to separate out once harvested. This is true for other plants, as well. Mr. Matteis added that the rogue plants must be carefully removed so that no seed is shaken off and left in the field during the process. Removing rogue seeds can be extremely expensive and time consuming.

Ms. Peterson used hybrid sunflower seed production as an example of when hand weeding is needed. The grower needs a male pollinator in bloom at the same time as a female plant. Roguing crews walk the fields every few days to thin out the female pollinators and off-types. Mr. Matteis commented that those plants must be pulled out as opposed to hoed out to prevent the pollen from spreading. Ms. Peterson added that the plant spacing and density would make it awkward to carry a hoe through the field. Mr. Matteis also stated that spacing plants farther apart to allow for hoe use is not an option because it would interfere with needed pollination.

Mr. Schacht questioned whether the latter activities described by Mr. Matteis and Ms. Peterson would fall within the scope of this discussion, because it involves culling undesirable product from the field. The comment initiated a discussion regarding what would constitute a “weed” and Mr. Schacht noted that the issue would have to be resolved. Mr. Schacht suggested that removing off-types would not be weeding and Mr. Matteis noted that the advisory committee is considering both weeding and thinning. He indicated that thinning is as much of a concern for the seed industry as weeding.

Ms. Peterson explained that roguing off-types from vine-type plants requires that the worker manipulate the plant to find the base of the root, because the weeds wind around. She also explained that organic food must be grown with organic seed under the federal laws promulgated last year. As a result, they cannot use herbicides to produce organic seed and confront all the

same issues described by the organic farmers. They also have to keep the plants in the ground longer so that they have a chance to go to seed, so weeds have a lot of time to grow.

Ms. Peterson stated that the seed industry is a billion dollar industry that provides a lot of jobs. Mr. Matteis explained that UC Davis is compiling the actual number of workers at present and estimated that it is a couple thousand jobs, not all of which are farm workers. Mr. Matteis clarified that they also contract with growers to produce seed and the job estimate would not include those situations. Mr. Martin also commented that other growers cannot farm without the seed industry.

Mr. Matteis added that a lot of seed production has left the state and commented that, if the parties cannot find an acceptable way to address this issue, it will hasten the industries move to other countries. Mr. Matteis noted that some of the words in the labor representatives' petition require clarification, such as what constitutes a weed and what is thinning. In response to a question, Mr. Matteis clarified that the industry's cultural practices are created in part by the industry. They are law, but sometimes they emanate from growers' wishes, like the lettuce mosaic ordinances.

Mr. Matteis stated that they are very dependent on their farm workers and do whatever they can to enhance their welfare. In nurseries, they bench everything that they can bench. He stated that much of the work is precision work. For example, with vine plants, the workers get on their hands and knees to sex flowers. Mr. Matteis stated that such work cannot be done from four feet away.

Parsley

Commentary in Spanish. A worker is attempting to hoe the weeds and says is damaging the plants. He then weeds by hand. Mr. Borden stated that the field is drier than they would like for this purpose. More commentary in Spanish. Mr. Borden adds that even a very narrow hoe head would not allow the worker to maintain control. Mr. Bunn added that the soil is pretty sandy and if it were wet, the weed would come out pretty easily even though it is big. He stated that they typically water before weeding to facilitate the process. Mr. Benitez commented that too much water could be problematic and Mr. Borden agreed. Mr. Riddle agreed with Mr. Bunn and stated that it is common practice to irrigate before hand weeding. He explained that, in this instance, they were under the gun.

Mr. Draper explained that fresh parsley is harvested with a knife and a rubber band is placed around it. The work is paid piece rate. It is important not to get weeds in the bunch and it is very time consuming for the worker to remove the weeds from the bunch during harvesting. The grower will not pay the worker extra to remove the weeds. Mr. Borden added that, if a worker wanted to remove the weeds while harvesting, he would need a long handled tool under the standard proposed by the labor representatives. Mr. Bunn noted that it is also important to

remove the weeds before the harvest, because the weeds will go to seed if they are not removed sooner.

Mr. Martin noted that they grow a lot of parsley for dehydration that is mechanically harvested. If a grower tries to sell parsley with weeds in it, the customer may refuse to buy from that grower in the future. Mr. Webb asked if buyers would have a means to obtain parsley if the standard went into effect and the buyers would no longer accept Mr. Martin's product. Mr. Martin responded that they likely could, but not from California. Mr. Martin stated that agriculture is leaving California. He said that growers are always trying to stay one step ahead of going broke and asserted that regulatory pressures are driving business out of state. He said that they are not always able to keep up. Mr. Martin cited sugar beets, cannery tomatoes and garlic as examples of crops that are no longer grown in the Salinas valley.

Mr. Schacht commented that crops are not leaving Salinas because of a hand weeding standard and Mr. Martin agreed, but suggested that such a standard would make it that much more difficult to compete. Mr. Webb added that the standard would put California farmers at a competitive disadvantage and Mr. Schacht responded that the group is no where near knowing what a final regulation might look like here. Mr. Webb noted that they are responding to the regulation proposed by the labor representatives.

Flowers and Other Crops

Mr. Ted Kubota, California Floral Council, narrated some power point photographs. He showed lilies growing in a greenhouse in Salinas. The flowers are planted outside in boxes and they confront weeds from time to time. The wind might blow in a seed while the plants are in the ground that is then brought into the greenhouse. Chickweed is an example. He explained that the lilies will grow 24 to 36 inches tall and, while they are in the ground, the boxes are covered with netting, so it is very difficult to use any kind of implement to weed. The netting helps hold up the plant, so that they can grow long stems, which is what the florists want. They also use drip tape, which is a more efficient form of irrigation and does not wet the plant, which reduces the chance of disease in greenhouses. The bulbs are also very expensive.

Mr. Kubota also sells seed to a lot of growers. One photograph showed bedding plants with a stinging nettle in the middle of it. Another picture showed transplant bell peppers on the ground. Mr. Kubota asked the grower why they were not benched and he explained that they would dry out even if watered everyday, because the roots extending from the bottom of the containers need to be in contact with wet soil. Another picture showed spring mix, some of which had been harvested at four to six-inch crop height. He said that the crop was too dense to weed with an implement.

Another picture showed an iceberg lettuce field planted in January. It was thinned to ten-inch spacing and was weeded with long handled hoes two weeks later. Drip tape was then installed to conserve water, reduce fungicide use and allow for more rapid crop growth. The tape was

installed off of tractors. The lettuce grower told Mr. Kubota that he would need to hand weed from time to time, because the weeds are too close to the plants and because a hoe could nick the drip tape, which would have to be fixed.

Mr. Bunn noted that tape is a lot easier for the workers, because it does not require the heavy back work involved in moving pipe. Ms. Bogenholm stated that drip tape can be placed on the surface or about an inch underneath the soil. Mr. Martin added that the tape used on the surface is more durable, but it is not strong enough to hold up to a hoe. He tries to train weeding crews to watch for the drip tape. Ms. Peterson noted that another advantage of drip tape is that it reduces the weed population, because the weeds only grow where the water is. Ms. Bogenholm stated that drip tape began widespread use in the United States in 1972.

Mr. Martin stated that, with lettuces, the crews thin with long handled hoes and they can do so upright, but they cannot see the doubles, so they do a second pass where they weed and get the doubles. The doubles become apparent when the plants are three to five inches tall. Mr. Martin asserted that you cannot get the double with a hoe and asserted that the doubles must be removed because the lettuce will not grow that way. Someone commented that one of the doubles is actually a weed. If it does not belong in the field, it is a weed.

Mr. Kubota showed a calla lily field and noted that the plants are grown from bulbs. A pre-emergence herbicide was used on the field after it was planted. The field also uses drip tape. The bulbs will be in the field for two or three years, because they are very expensive. The field in the picture was about two months into production. After the herbicide wears off, they have to hand weed and they have to remove the weeds from the field.

The last photograph was of a strawberry field with a malva weed showing. Mr. Kubota stated that, if the weed went to maturity, it would produce ten thousand seeds.

Mr. Kawamura commented on a picture showing a pile of weeds off to the side. He noted that, if the weeds were not removed and it rained, the weeds would rot and the spores could be carried by the wind back into the crop. In addition, if the weeds did not rot, the weed seed could blow back into the field. He stated that it is important to get the weeds away from the field where they cannot pose these problems.

Mr. Gabriel acknowledged that Mr. Schacht had submitted a re-draft of the proposed standard to him some weeks ago and he responded that he was not in a position to negotiate for that diverse a group. In addition, the growers wanted an opportunity to present their arguments before having any further discussions. Mr. Gabriel appreciated Mr. Schacht's effort to reach consensus, however, and indicated that the parties had a ways to go.

Mr. Draper explained that he was a vegetable farmer before becoming a farm labor contractor and he explained what occurs when a grower contracts with a contractor for lettuces. First, the crop is planted by a planter. The spacing is 1 _ to 2 inches. The contractor then uses hoes

appropriate for the variety and desired spacing to thin to 8 to 12 inches between plants. The grower then cultivates, side dresses and irrigates the field. The labor contractor then comes back to weed what was missed and to pull out doubles, if the thinning crew did not already do so. Mr. Draper, unlike most contractors, gives the grower a pre and post-thinning plant count. After the crop has been side dressed and irrigated, the workers come back in and hoe with an implement appropriate to do the job. It is then side dressed and cultivated a second time. Some weeds likely will be left. Depending on the grower and the market, they may require one more pass through the field, which would be much like the one shown on the video where workers were weeding celery. On that pass, they weed by hand, because the crop is getting close to harvest and has filled in the spaces.

Mr. Draper introduced one of his workers, Mr. Francisco Nada. Mr. Nada provided his observations of fieldwork based on his many years as a farm worker. He noted that there are certain types of plants for which you cannot use a tool, because the tool would damage the plants. Since the goal is not to damage the plants, sometimes it is easier to do the work by hand. He explained that the work today is different than it used to be, because they no longer do the same thing all day long. Now they do one thing half-day and another task for the other half. It is easier to work this way and less damaging to the back. Sometimes the work must be done by hand like with watermelon and tomatoes where they use plastic. Recently, he worked in a transplant tomato field and they only used the hoe in the furrows. Crops like cilantro and spinach are grown very close together, and there is no way to use a hoe. He questioned whether anyone knew of a tool that could be used. He does not know of one. He explained that he is paid by the hour and said that you cannot pay piece rate for weeding, because some beds are full of weeds and others are not. Mr. Nada also explained that, prior to the ban on short handled tools, they would weed using a knife and afterward, no.

Mr. Kawamura stated that the agricultural industry is struggling. When he told people in other states that he was attending a hearing on banning hand weeding, they could not believe it. Mr. Kawamura stated his belief that it is unrealistic to attempt to regulate a cultural practice. He stated that weeds are a danger to the food supply and questioned non-agricultural people's ability to regulate a cultural practice that is an inherent part of agriculture. He stated that it is not the 1960s anymore either with respect to cultural practices or labor practices and asserted that California has the most politically correct food supply in the world. He credited that to a lot of well-intentioned people and advanced technology. However, when he sees the industry attacked by good intentions, without a good understanding of the industry, it becomes a concern. He stated that it seemed that the parties should be able to work together to find viable ways to protect the safety of the employees. He is alarmed, however, that as the groups discuss this issue, the industry's ability to remain competitive is being chipped away by laws. Mr. Kawamura understands that the Board must evaluate various factors in deciding whether a regulation is warranted and asserted that the agricultural industry has never stood in the way of good science. He has yet to see that hand weeding is an issue that requires further regulation.

Mr. Webb stated that the proposed standard, as it stands now, would economically harm agriculture and the ability of the industry to compete. Mr. Webb asserted that agriculture is experiencing tough economic times and is operating with very thin profit margins, which makes it very difficult to survive and compete. He explained that agriculture cannot set its own prices for its products, so it cannot pass on increased costs to consumers. California is also one of the most expensive areas in which to grow. Costs are set locally, prices are set globally. Competition comes from other states and other countries that can produce less expensively than can California growers and they do not have a standard like the one being proposed. The cost of doing business has increased significantly in the last few years, including through worker's compensation, health insurance, labor, energy, fuel and diesel costs. Mr. Webb asserted that the consequences of the proposed standard would be higher costs and less yield. He stated that some product will be destroyed if the standard is adopted.

Mr. Webb commented that the labor presentation included a statement that different production approaches could make the use of long handled tools more acceptable. He believes the suggestion being made was to narrow rows and beds. If that occurs, it will result in less yield per acre and more spacing will result in growth of larger products that may not have a market, because the market will be able to obtain the product they want elsewhere. Another concern with the standard is increased labor costs. Such costs would put some farms under and could cause some farmers to lose their crop. Mr. Webb stated that one in ten or eleven jobs in California is in agriculture. If costs increase too much, some businesses will be eliminated and small business will be most affected. If businesses fail, jobs will be lost.

Mr. Borden stated that the proposed standard is not necessary to protect employees. He stated that the standard assumes that all hand weeding, thinning and hot capping is injurious to employees irrespective of how long or often the employee engages in the activity. Mr. Borden suggested staff carefully read the 1993 Division of Occupational Safety and Health Medical Unit's report, which discusses performing these tasks for prolonged periods and substantial periods of time. Page 5 of that report mentions being in a stooped position for greater than 50% of a six to eight hour period.

Mr. Borden stated that the presentation demonstrates that hand weeding is a third step and in the process and is only done when absolutely necessary, in part, because it is expensive. Mr. Borden noted that the video showed the workers who were hand weeding in an upright position much of the time. Mr. Borden asserted that the presentation shows that workers do not spend more than 50% of a six to eight hour period in a stooped position. Rather, they engage in occasional, intermittent hand weeding activity, which would not be injurious to the worker.

Mr. Borden stated that there is a lack of physiological reports on the particular issue. While Mr. Borden does not believe a standard is needed, if one is to be promulgated, there should be research and results on this issue. He did not find the analogies to other industries contained in the Division's Medical Unit's report appropriate because of differences in the working conditions. Mr. Borden mentioned micro-rests in which standing upright for relatively brief

periods of time can counteract any effect of bending on the body. Rather than rely on a conclusory, old report, good scientific evidence should be obtained. Mr. Borden further commented that the labor representatives have provided no statistical evidence of injuries or epidemiological studies. He mentioned that causation of these injuries is an issue, because a worker who hand weeds or thins may also engage in a greater amount of hand harvesting or non-work related activities that require bending. Mr. Borden also noted that the Medical Unit's report does not discuss kneeling, squatting or their tendency to cause injury.

Mr. Tom Lanini, UC Davis Weed Ecologist, commented that most of the crops included in the presentation were high value crops. He noted that low value crops are no longer grown in California because of farming costs in the state. He stated that many crops are grown out of season, because they are grown when the market is right. Because they are grown at times that are not ideal for the crop, they are not as competitive. One way to compensate for that is tighter spacing to get an earlier canopy cover. The growth stage later in the season limits tool choices. Herbicide use is also less of an option closer to harvest and is generally considered less desirable at that stage in California. Available herbicides are also relatively limited for vegetable crops and plant rotations further limit the herbicide options.

Mr. Lanini added that weeds, because they germinate over such a long period of time, may emerge after the herbicide is no longer effective or after cultivation, and they are very difficult to control other than by pulling them or some other means. Mr. Lanini did not agree that all weeds need to be removed from the field. He stated that this was only true for weeds producing seed or where they are harvesting lettuce where (comment unclear). Almost all weeds will re-grow if cut at the surface. They have a bud just below the ground that will generate a new top. Some are also able to re-root and they have to be removed for that reason.

Mr. Lanini stated that hand weeding is very slow compared to using a hoe, so there is no incentive for a grower to hand weed when a hoe could be used. He commented that California is the only state that bans short handled hoes and stated that these tools are still used in Florida, Chile and Mexico.

He also has a bad back and does a lot of hand weeding. At the end of the day, his back is sore, but he went to a back therapist who taught him how to stretch, so that, even if he is in pain at the end of the day, he can stretch and be ready to hand weed again the next day. He suggested that all workers who hand weed should receive back training.

Mr. Roy stated that the facts neither support that there is a loophole in Section 3456 nor that there are reasonable alternatives to hand weeding. Mr. Roy stated that Section 3456 only addresses the use of short handled implements. With respect to reasonable alternatives, Mr. Roy stated that the bulk of labor's evidence consists of still photos. He asserted that the grower's presentation debunked labor's presentation in that regard. He stated that it would be best to avoid all industrial injuries, but Labor Code 6306 recognizes that zero tolerance is not the safety standard in the workplace. That section requires such freedom from danger as the nature of the

employment reasonably permits. Mr. Roy stated that this standard should guide the Board in its consideration of this issue.

He asserted that hand weeding is an absolute necessity with regard to certain means of production. Hand weeding also is only done after other means have been applied and where it is necessary to remove the weed without destroying the plant growing adjacent to it. Because this work is compensated on an hourly, and not a piece rate basis, workers do not rush to perform the work. Mr. Roy stated that the proposed standard is not necessary, and, if the Board decides to pursue a regulation, the issue of necessity, as defined in the Administrative Procedure Act, will have to be addressed.

Mr. Roy stated that the record shows that use of a long handled hoe: is not always feasible and will damage certain crops in certain operations; delays work and is more costly in certain operations; can cause defective crops and place soil on the crops, which interferes with mechanical harvesting and presents food safety issues; is the common practice in most row crop weeding operations. Mr. Roy stated that it will be difficult to establish a common standard in such a diverse industry. The Legislature and regulatory bodies have treated agriculture differently than many other industries because of this. Mr. Roy stated that the labor representatives have not met their burden of proving the necessity of banning or regulating hand weeding.

Mr. Webb added that they could not address all the commodities grown in California, but they know that most of them would have serious problems with the proposed standard. For all the foregoing reasons, he asserted that the proposed standard should be rejected.

Ms. Smith opened the floor to questions and comments, but encouraged the parties not to focus on the issue of necessity, because rulemaking has yet to begin. Mr. Schacht stated that the labor representatives would like to have a chance to offer rebuttal evidence to the growers' presentation. He also reiterated that the labor representatives' goal is to close the loophole in Section 3456 and he drew Board staff's attention to the testimony of the growers' witness that, before the ban on short handled tools, workers used short knives and post-ban, workers began to hand weed.

The issue for labor is whether there is unnecessary hand weeding occurring and whether the industry appropriately tries to develop tools when none exist. Mr. Schacht asserted that the growers' presentation was largely devoid of discussion regarding alternative tools or the efforts made to develop such tools. The challenge is to try to develop a regulation that puts a burden on the industry to try to develop these tools and use them where possible and bans unnecessary hand weeding.

Mr. Schacht stated that labor showed a lot of flexibility in the legislative process. While the degree of flexibility might be different here, he noted that the growers spent a lot of time on nurseries and seeds during their presentation, both of which labor proposed to exempt during the

legislative process. Mr. Schacht was not agreeing to do that now necessarily, but he mentioned it to address the issue of flexibility and the willingness to find consensus.

He added that it was disconcerting that the growers did not seem open to discussing changes to production or cultivation practices, seem to advocate a zero tolerance policy toward damage to crops and seem to assert the need to remove the root of the weed in all instances. Mr. Schacht suggested that Mr. Lanini argued against the latter point and Mr. Lanini clarified that he said it was not necessary to remove all weeds from the field. Mr. Schacht stated that they know some growers weed by chopping off the weed and not pulling it out altogether. Mr. Schacht also stated that there seemed to be no willingness to tolerate a greater weed population. Mr. Schacht suggested that worker safety might justify some greater tolerance of weeds even if it resulted in some reduction in yield. He stated that the Board's challenge is to find a way to close the loophole without burdening the industry with higher labor costs. He thought there were a lot of ways to approach the issue and stated that the parties, with the Board's help, might be able to craft a viable solution.

Mr. Schacht proposed that the labor representatives be given a few weeks to look at the growers' presentation. He also said that labor has videotapes and other evidence that they have not submitted, but that they will submit when they have to carry their burden. Mr. Gabriel asked whether the growers would then be given the opportunity to submit more evidence. Mr. Schacht said that raises the issue of whether they are going to get down to the business of trying to develop a regulation. Mr. Borden asserted that the labor representatives were supposed to have made their presentation last time and Ms. Smith stated that labor previously indicated their intent to supplement the record, but that the committee did not have time to debate the issue of evidence submittal. She suggested that the parties address that issue with each other outside the committee forum, if it is a concern.

Ms. Elizabeth Ecks, CLF, stated her appreciation for the presentation, but added that she found the growers' suggestion that labor has no role in affecting cultural practices disconcerting. She stated that they have been instrumental in crafting regulations to combat industrial injuries in many different industries. She further stated that industry regularly asserts that labor's proposals will result in job losses. She objected to the assertion that labor's efforts to protect workers would result in dire economic consequences and cause everyone to move out of state. She stated that it just does not happen. She understands that agriculture is very varied and stated that she would be curious to know more about the subsidies that agriculture receives. She stated that the intent of the ban on the short handled tool was to prevent workers from bending over in the field all day and hoped that the parties could agree that the regulatory intent is being abrogated here.

Ms. Bogenholm objected to Mr. Schacht's suggestion that the presentation did not address growers' efforts to avoid hand weeding and stated that Mr. Ricci provided substantial detail regarding his efforts in the field to avoid weeds. Mr. Schacht clarified that he stated that the presentation did not address the use of alternative tools or their development. Ms. Bogenholm

disagreed. She stated that they grow in dirt and have to do stoop labor to harvest and complete other tasks. She suggested that the effort here is to outlaw California agriculture and stated that she is fighting for her business. She stated that it is expensive for her to participate in this process and stated that she does not think labor cares about their businesses.

Mr. Kawamura stated that there is a high level of misunderstanding regarding the industry, especially the specialty crops. Mr. Kawamura stated that specialty crops do not receive subsidies. Most subsidies go to commodity crops and North Dakota receives more subsidies than California. He stated that California growers want to protect their workers and would love to pay a higher wage, but everything labor has done in the last couple years makes it more difficult for the growers to survive. He questioned why the parties cannot work together and did not understand how the labor representatives could deny all the things that were presented regarding why they weed. He expressed confidence that the parties could get to a compromise position that would work, but stated that, if the concept of bending over to pick a vegetable is not acceptable, they will not be able to get past it. He suggested that labor is pushing California toward greater herbicide use, genetic modification and the death of the organic industry.

Ms. Smith suggested that the parties try to stay focused on the issues before the committee, which is a potential regulation on hand weeding and thinning. She clarified that the next step will be to determine whether there is viable language that the parties could all live with. Ms. Smith stated that she heard comments from both groups that suggested that there is some common ground between them and she heard from both groups that a black and white solution was not going to work. She was not sure that the parties were able to hear that from each other.

Ms. Thrupp echoed Mr. Kawamura's statement that the two groups need to work together. Her background is in sustainable agriculture. She stated her belief that everyone in the room believes in social responsibility, part of which involves maintaining the health of all concerned. She believes the parties can find a way to build bridges and work in a non-adversarial way. Ms. Thrupp responded to Mr. Schacht's comment that some growers cut their weeds rather than remove them. She noted that in the wine grape industry, they plant cover crops, including grasses that are mowed or tilled under. The practice helps develop the soil, but just because it works with wine grapes, does not mean it will work in all practices. In addition, processed products, like wine grapes, can tolerate more weeds under the vines than table grapes or lettuces because of the market. The industry must react to consumer input or it will adversely affect both the industry and the workers.

She also asked whether labor had done any analysis of industries that had incorporated stretching and back exercises to avoid injuries and stated that an ounce of prevention is worth a pound of cure. She suggested that such training and information could be significant in preventing back problems. Mr. Martin explained that they routinely require their employees to do exercises before they enter the field and they insist that the labor contractors have the workers do them, as well. The workers are paid to do the exercises. He asserted that all the growers he knows use the same practice. He thought that was common knowledge. Mr. Schacht stated that the issues

raised in the Carmona case and in the Ventura County studies refer to abnormal degeneration of the spine caused by excessive bending. He is not aware of any evidence that suggests that exercise is a remedy for that kind of structural destruction. He is not suggesting, however, that there is no place for stretching and back exercises for people performing physical labor.

Mr. Roy noted Mr. Schacht's reference to developing a regulation to ban unnecessary hand weeding and stated that he did not see any unnecessary hand weeding in the presentation. Mr. Roy said that there may be a perception by labor that workers hand weed for eight to ten hours, but in 27 years, he has never seen it. Mr. Roy and Mr. Schacht discussed the video testimony of a celery grower who stated that crews sometimes weed eight to ten hours in a day and Mr. Roy stated that those workers use a long handled hoe. Mr. Roy reiterated that hand weeding is the last phase in the process and is used to get straggler weeds. He questioned how "unnecessary" would be defined. Ms. Smith agreed that that is one of the main challenges ahead. Mr. Roy reiterated that it is wrong to think that crews are out eight to ten hours a day hand weeding.

Ms. Julie Montgomery, CRLA Foundation, stated that the labor contractor she mentioned last time against whom they obtained an injunction prohibiting use of short handled tools, has a specific weeding crew that weeds all day long in the various fields that the contractor manages. Once the injunction was obtained to prohibit short tool use, the workers switched to hand weeding. She asserted that some people in the industry do have workers hand weed all day. Mr. Roy said that the employer Ms. Montgomery referenced should have been using long handled tools. He stated it was a clear violation of the act that should have been enforced. Mr. Roy questioned whether the entire industry should be prejudiced because of people who do not want to abide by the law. Ms. Smith suggested that the committee members not conclude that such an outcome would be the product of the committee's work.

Mr. Jesus Lopez, CRLA, Inc., stated that he has seen crews in Salinas weeding for at least eight hours a day for two weeks in a row. Mr. Roy said that he does not condone that and believes long handled hoes should be used in that situation, but said that banning hand weeding when it is necessary is not the answer. He stated that what Mr. Lopez described is unnecessary hand weeding. Mr. Lopez clarified that not all companies operate that way, but it happens. Mr. Borden asked Mr. Lopez how he knew the crew spent so much time hand weeding and Mr. Lopez explained that he believes he has a tape that shows the crew at 8:00 a.m. and 3:00 p.m. on at least one day. After that, he observed the crew each morning and afternoon, but did not tape them. He does not know if the crew performed other tasks during the times he was not there.

Mr. Bunn stated that the dialogue is good and suggested that the Board keep "linkage" in mind in considering this issue. He said that a lot of the issues under discussion are linked to something else. He suggested that the Board try to bridge some of the links to make more sense out of the discussion and avoid some of the road blocks perceived by the parties.

Mr. Ricci stated that they use weeding crews and sometimes they do hand weed all day, but it is because it is necessary. If they had a tool they could use, they would. Mr. Ricci further stated

that all regulations cost money, either through how they are implemented or how they are monitored. He stated that it is better to have good management practices and tell everyone what you would like to see them do. Chances are, if it will help cut costs and will benefit farm workers, it will be much easier for a grower to accept.

Mr. Hoerger asked whether the growers could provide any research or resources that address the issue of hand weeding. Mr. Hoerger observed that the growers contend that it is a costly issue, and one that they would like to eliminate. Labor contends that it is an industrial health issue. He questioned whether anyone is looking at the issue. Mr. Lanini commented that there is no funding to do that type of work and noted that he has looked at the cost of leaving weeds in a bell pepper crop. He found that, if there is a very weedy field at harvest, it takes more time to find the bell peppers, so harvest efficiency is slower and you miss some peppers so the yield is lower.

Mr. Hoerger questioned why funding is unavailable if it is a significant cost. Mr. Kawamura stated that the herbicide, chemical and genetic modification companies are constantly striving to come up with something new. He stated that there is a huge volume of literature regarding weed control and related issues, including through the state's universities. Ms. Bogenholm noted that there is a product to sell in those cases and stated that no one is going to put the money into that research for the organic industry because there will not be a product to sell. Ms. Bogenholm added that the state universities are also experiencing funding cuts. Mr. Kawamura noted that legislation is pending that would attempt to secure some of the farm bill money for California and states that produce specialty crops to fund research, export assistance and health insurance. He stated that there is tremendous money in the farm bill and California does not get any of it.

Ms. Rayne Thompson suggested the two sides work together to try to secure funding for this type of research. Mr. Condon added that, as long as other people grow our food for us, some people are going to be in the field for a long time each day.

Ms. Smith initiated a discussion regarding whether to proceed forward as a full group or as a subcommittee to explore a possible regulation. Mr. Manieri, the Board's Principal Safety Engineer, then described the subcommittee process. Mr. Schacht indicated that the labor representatives were prepared to proceed through a subcommittee to try to narrow the issues and find some modification of the regulation that address their concerns. Mr. Schacht suggested that labor and the growers each have eight representatives on the subcommittee and suggested that each group select its representative members.

Mr. Manieri explained that a subcommittee is often about a quarter of the full committee. For this committee, he felt between ten and fifteen members might be appropriate. He stressed that the goal would be to try to approach the issue from a technical perspective rather than a legalistic or administrative one and emphasized the need to have a lean group that could address those issues.

The growers commented that their group is diverse and would need to discuss the issue. Ms. Smith suggested that they provide their answer regarding their preference in a week. Ms. Smith clarified that the intent would be to have Mr. Lanini and Mr. Fathallah participate on the subcommittee, if one were formed. Mr. Schacht agreed with that concept and asked that future meetings be held on Fridays because of the Legislature's schedule and many of the committee members' participation in the legislative process. Mr. Roy noted that travel is difficult on Fridays and asked that the meetings be scheduled with that in mind.

Ms. Smith clarified that the committee or subcommittee can now decide how it wants to proceed with proposed regulatory language. She noted that Mr. Manieri and Mr. Mitchell, the Board's Industrial Hygienist, can bring a proposal to the group or the group could develop language collectively. That language would likely be revised extensively through the group and then it would be noticed for formal rulemaking and public comment. Ms. Smith emphasized that the committee is at a very preliminary stage in the process and the committee's work will only be the first stage in the process. Mr. Manieri explained that, if a subcommittee is formed, the subcommittee could present its decisions to the full committee before proceeding to the Board or it could simply notify the full committee of its decisions.

Mr. Roy stated that the parties seem stalemated on a variety of issues and suggested that Mr. Manieri and Mr. Mitchell propose some language. Ms. Smith observed that there are a lot of differences of opinion and different approaches in the group, but stated that there is commonality as well and she expressed her hope that the parties would approach the process with the belief that they may not be stalemated. Mr. Gabriel commented that it would make sense for the Board to propose some language, if the Board is hearing common ground between the groups. Ms. Ecks asked if the parties could bring language and Mr. Manieri stated that they could. Ms. Smith added that the parties should consider whether submitting their own language is a constructive step or whether it is apt to be an antagonistic step. If it is the latter, Ms. Smith suggested that it would be counterproductive.

Ms. Smith clarified that the subcommittee meetings would be public meetings in the same sense that the advisory committee meeting is a public meeting. She explained that the Board cannot exclude people from the meetings. Mr. Schacht commented that, if the purpose of a subcommittee is to allow for a more productive working group, the atmospherics created by large groups of spectators could detract from that. Mr. Bunn suggested that the parties pledge not to invite others and Ms. Smith agreed that the atmosphere and attendees at the meetings would be largely up to the parties to control. There was some discussion about press involvement and Ms. Smith explained that Mr. Thompson, the reporter present that day, works for the Cal-OSHA Reporter and came on his own accord.