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What are the existing Agricultural Standards and Regulations?

The USDA's National Organic Program (NOP) prohibits GMO's in organic production but does not set zero tolerance for adventitious GMO contamination. The NOP states if an organic farmer or processor conducts due diligence to exclude GMO's from their operations the "unintended presence of GMO's should not affect the status of an organic product or operation."

1. Many countries have set thresholds for GMO's ranging from O.1%-5%. Many organic grain buyers in this country require O.1 %.
2. Setting tolerances has been problematic in that it places the burden of the cost of testing on to the farmer producing the crop.
3. If the farmer's crop is rejected because of higher than allowed GMO contamination, there is no mechanism to compensate that farmer for the loss.
4. There is not a problem with co-existence only to the extent that organic companies are not testing for presence of GMO's, especially in organic feed crops.
5. Holding farmers liable for GMO contamination of their non-GMO crops is simply not fair, especially if they have done everything in their power to prevent this from occurring. (Adequate buffer strips, planting dates, variety maturity)

Do we have a problem with GMO, non-GMO, organic and IP crops coexisting in Iowa?

The answer is definitely yes? Why do I think this is so?
Look at the trends toward value-added and identity-preserved in Iowa. I serve on the Shelby County Extension Council and our area agronomist provided these statistics about farming trends in Iowa:

1. 50 CSA's, 490 orchards, 750 commercial vegetable growers, 230 vineyards, 175 Farmer's Markets, 200,000 acres of organic crops with over 400 certified organic growers. These <u>all</u> represent identity-preserved markets.
2. Most telling are the missed opportunities because of our insistence to ignore consumers not wanting GMO's in their food and our insensitive attitude toward other countries who do not want GM foods.
3. Since the introduction of GM Roundup Ready Soybeans in 1996, the U.S. share of soybean exports has dropped from 65% to 45%. Brazil's share has increased from 22% to 36%. Sixteen of the 25-leading soybean buying nations have reduced imports of U.S. soybeans.
4. Bio-technology companies have insisted that GM crops such as corn and soybeans are generic crops with a take it or leave it attitude, but the reality is that the market has already moved well beyond that. China for instance has one entire province designated as IP non-GMO.
5. We have a problem co-existing because of the failure of our grain-handling and transportation infrastructure to support IP and specialty grain production. Railroads want 100 carloads of generic corn. Most elevators want one structure with generic corn in it.
6. We have a problem with co-existence because we have allowed the biotechnology companies run of the farm from the judicial decisions of who is liable for loss of revenue from their technologies to the granting of patent rights over what should be our common seed inheritance. For example, Syngenta is seeking global patents on nearly 30,000 gene sequences in rice in an attempt to create a monopoly on the world's most important grain. The country of India has responded by saying this: "India will lose all control over the staple grain. It will be the beginning of a scientific apartheid not only against India but for all Third World Countries... in other words, biological inheritance of the world's major food crop is now in the hands of a Swiss multinational."
7. We have a problem co-existing because of not promoting IP, GMO-free and organic in this state. We are growing not because of anything the state is doing but because of how the consumers are responding and what producers are doing to answer that response. More and more consumers want to know where their food is coming from, what is in it, and who has grown it. Many want to support locally grown and smaller

and mid-sized farms. The value-added types of agriculture I have been describing are the last hope for many of our middle-sized farms in Iowa. We cannot afford to ignore them. I am pleased to say that some people in this state are not ignoring this kind of farming. Take Woodbury County for example where this summer the Board of Supervisors voted unanimously to promote organic agriculture through property tax relief incentives.

8. We have problems co-existing because the science of biotechnology is not as precise or benign as it has been made out to be. For instance, 15 weeds have now been identified as having resistance to glyphosate. This comes from an article in the publication "Outlooks in Pest-management." Because of this increasing resistance, Dupont has been holding demonstrations for farmers showing them how to stack herbicides with higher rates of sulfonylureas. The claim of using less herbicide in biotech may not be holding up in the future. The claim of higher yields may not be holding up either. A study published in Field Crops Research found that Bt corn hybrids produced lower yields that conventional non-GMO corn hybrids. This study was conducted over a 3-year period.

What are the solutions to these problems that I have outlined?

Since the state passed legislation mandating state control over where seeds can be planted, then I would propose a state program designed to maintain, promote, and increase the credibility and marketing of identity-preserved, non-GMO and organic crops. I think a state program needs to do the following:

1. Put the producers interests above the interests of multi-national seed corporations. This is going to mean putting more financial resources back into public plant breeding programs at Iowa State. A lot of farmers are not able to buy non-GMO crops in the varieties that are best suited for their soils and climates because the companies have committed so much of their seed production to the GMO varieties. New, non-GMO varieties that are best adapted to local and regional conditions are not coming out with regularity. Our emphasis on molecular genetics is producing a generation of plant breeders who know how to splice genes but have no inkling what this means in the field for selection of the phenotype that will perform the best in that particular environment.
2. A state program needs to have the tools and the will to make Iowa into a recognized leader of IP and specialty and organic grains.
3. A state program has to develop and implement a low-cost and reliable audit trail from farm to the table.
4. A state program has to be able to assist in upgrading grain handling and transportation infrastructure to support these identity-preserved systems. There are already examples of programs at work in this country that Iowa could implement for certification of IP crops. One is the USDA's "Process Verified Program"(PVP). In this program, companies have to meet ISO 9001:2000 quality standards that are recognized around the world. There are a number of active state government sponsored programs for certifying and promoting identity-preserved crops. Oregon and North Dakota are two such examples. Also state crop improvement associations such as those in Minnesota, Indiana, and Illinois are particularly active in certifying non-GMO corn and soybeans.
5. A state program has to have a mechanism for compensating losses of revenue for those IP producers having GMO contamination. I think the creators of the technology that caused the problem should logically be the ones to be held liable. Unfortunately, Biotechnology has become identified with our country's attempts to impose its will on the rest of the world regardless of what that might mean. I was disheartened to learn that since the U.S. has occupied Iraq, farmers there cannot save their own seed to plant the next growing season but instead must purchase genetically modified seeds. I can only imagine the anger and resentment that is developing with the general population of their farmers.
6. A state program has to start by having adequate definitions and intent as to what this program is meant to accomplish. For example, a recent study by the Rodale Institute in Pennsylvania indicated that after 22 years of organic crop rotation research, those organic farms as a whole use 30% less energy than their conventional counter-parts. The same data also indicated similar yields....not reduced yields.... for organic as everyone generally assumes. Identity-preserved, non-GMO and organic agriculture are all a part of the solution for what is ailing agriculture. Let's have the courage to first admit and recognize that and then to find ways to promote it. Organic agriculture is not going to take over conventional large-scale farming anytime soon but our 2% share of the food economy needs to grow to at least 10% or more in the next ten years. The economic livelihood and diversity of our state is depending on that.