THE FUTURE OF AGRONOMIC CROPS IN CALIFORNIA AND THE WESTERN UNITED STATES

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ABSTRACT

The production of agronomic crops is slowly declining in California and other western states. This is due to price competition with lower cost producers elsewhere, the existence of more profitable alternatives like horticultural crops, pressure on land from urbanization, and increasing uncertainty due to changes in regulation and water supply and environmental legislation. Nevertheless, field crop production will continue if improvements in efficiency keep these crops profitable. Production using salt affected soils and water will provide a niche for some crops, while the need to reduce the environmental effects of farming systems will enhance the value of crops like alfalfa, which can help sustain soil quality and simplify pest control. Field crops will more easily allow farmers to meet new air and water quality standards than will the production of horticultural crops. Alfalfa is less affected by the pressures reducing the production of other field crops because of its vital role in dairy production and its use for horses. Public policy choices in coming years will significantly affect field crop production in the western states.

Key Words: field crops, alfalfa, sustainability, environmental regulation

INTRODUCTION

Times seem to be difficult for farmers all over the western United States. Prices for many agronomic commodities like grains, oilseeds, and hay are low, and where irrigation is needed, water supplies are at risk. Fewer families seem able to continue in farming every year. Recently, one agricultural economist has predicted the demise not just of field crop production, but of all agriculture in the United States (Blank, 1999). Is he correct or is there still some future for field crop production in the western United States, particularly alfalfa?

WHAT ARE THE FORCES AT WORK?

The western United States is a large and diverse area. It would be difficult at best to comment on the future of farming in each part. However, there are some general forces at work affecting crop production, and field crops in particular, that are evident particularly in California. These may also be important elsewhere in the west, either now or in the near future.

Why are field crops declining in California?

There has been a slow but steady decline in the number of acres of field crops in California. This is the result of several forces. One may be largely particular to California- the availability of

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alternative crop enterprises, particularly perennial and annual horticulture crops. The reasons growers shift to these crops is partly a function of the amount of money that might be made in comparison to most field crops. If growers shift to a single perennial like grapes or almonds, they can simplify their needs for machinery and sometimes for labor. If they shift to annual horticultural crops like vegetables, they will not, but may increase their chances for high rates of return to the crop enterprise. But they also increase their risk of financial loss because of the greater volatility of produce markets.

FIELD CROPS: A CONTINUING COST/PRICE SQUEEZE

There is a cost/price squeeze affecting producers of all field crops, and alfalfa is no exception. Worldwide competition based on price exists for many commodities, but the costs of production are local. In the United States, these costs are rising steadily, and regulatory requirements can add additional costs for farmers. Western farmers may also be in competition with farmers in other countries who receive direct or indirect government subsidies. Added to this throughout the west is uncertainty about water supply.

In California, there are two causes of uncertainty in water supply that affect growers. One is periodic drought. When these occur, farmers who produce annual crops may reduce the amount of land they cultivate, and shift their water supply to those crops most likely to be profitable, typically horticultural crops. But there is another source of uncertainty as well. Since 1992, very large supplies for agriculture have been reduced and diverted for environmental purposes, particularly for the management or preservation of diverse fish species like salmon, or estuarine species like the Delta smelt. Because of the effects of the Endangered Species Act, farmers can no longer count on reliable water deliveries, or be certain about the amounts delivered. This uncertainty affects farmers directly, but it also influences their relationships with their bankers and the willingness of bankers to finance crop production loans or provide other types of capital to farms. It may increase the cost and reduce the availability of capital to agriculture, because risk and the cost of capital are related. This further directs production towards higher value crops, which can pay for higher interest costs.

WILL FIELD CROPS ULTIMATELY DISAPPEAR?

Alfalfa differs from other field crops in several important ways. The primary demand for alfalfa comes from the dairy industry and from horse owners. Dairy production is the most profitable enterprise in many western states, and continues to be on the ascendancy. As long as dairy products are in demand, alfalfa will be in demand because of its uniquely valuable role in the nutrition of high producing dairy cows. Horse owners, who often are well to do, are likely to maintain demand for alfalfa as well. The cost of transporting alfalfa is high enough so that it must be produced within a reasonable distance from the point of use, particularly for dairy production.

These factors make demand for alfalfa production somewhat inelastic relative to other, lower value field crops; e.g. demand will remain even as agriculture is increasingly internationalized and many crops loose ground to foreign competition. Since hay yields do not seem to be rising at a significant rate, the demand for alfalfa will have to be met on approximately the same number of acres as at present.

THE IMPORTANCE OF EFFICIENCY

Producers of other field crops must continue to become more efficient to compete with low cost producers from other portions of the United States and from abroad. Will this be possible? There are signs that it will. For example, long term limits on sugarbeet yields in California have been exceeded due to breakthroughs with new cultivars. The result has been the achievement of new world yield records, and an increased desire by growers to produce beets. This increase in productivity has made California a low cost producer compared to other regions of the United States, despite higher land prices and the need for irrigation.

If the yields of a crop are increasing, or if the costs of producing it are declining, or both, that crop is likely to remain competitive. Such progress may not always be incremental, or some improvements may not always be anticipated. Changes to crops from biotechnology and their effects on cropping systems may be particularly hard to predict. Forecasts for the demise of a crop, let alone for farming as a whole, should be made with caution.

Sugarbeets can also be grown well on soils which will not sustain production of more sensitive crops. For example, there are many acres of salt-affected soils in the San Joaquin and Imperial Valleys to which a salt-tolerant field crop like beets are adapted, but salt-sensitive horticultural crops are not. Cotton, wheat, and safflower are other examples. There are also some salt-tolerant forages which can be grown with waste water (saline drainage water), providing another niche for field crops, one that was not appreciated until recently. Salt tolerant field crops will have a durable role in crop production systems in California.

A SEARCH FOR ALTERNATIVES

Viable alternatives to current field crops are not always available, even in California. The need for alternative crops, particularly horticultural crops, is not unlimited. For example, about 20,000 acres of strawberries in California supply about 80% of the demand in the United States. The same is true for other horticultural crops. Because demand is limited, field crops will continue to be the choice for many growers, provided they can produce those crops efficiently.

Field crops will continue to be critical to a diverse system which includes both high value and low value crops. Field crops, especially alfalfa are important for sustaining soil quality, and will help farmers meet increasingly stringent environmental standards. Alfalfa and other forage crops have particularly good effects on soil quality. As a deep-rooted perennial, alfalfa has been reported to remove nitrogen from deep in the soil profile. There are other annual crops like safflower and sugarbeets that also can serve the same function. However, in locations like California's Salinas Valley where only shallow rooted annual horticultural crops are produced, nitrate pollution problems are severe.

An additional advantage of annual crops in a location like California, is that during periodic droughts, farm demand for water can be reduced with relatively less consequence than if farmers are committed heavily to perennial crops, which must be watered every year.

THE IMPORTANCE OF PUBLIC POLICY

Public policy affects farming in many ways, including influencing price for commodities, affecting costs of production, and setting the regulatory standards that must be met. The direction of public policy cannot always be anticipated, and is changeable. But it is unlikely to completely disfavor farmers and farming.

One of the reasons that field crop production has declined in recent years is uncertainty about water supplies. Water has been diverted from agriculture for environmental purposes. Essentially, water has been allowed to run to the sea to facilitate salmon migration and protect various estuarine fishes, and used for waterfowl refuges. The amounts of water needed for these purposes cannot be clearly defined so the amounts diverted are subject to political determination, which varies.

There are no locations in California where challenges to agricultural water use are absent. The economic benefits of environmental diversions are difficult to quantify, but often are less than the original economic use. Crop production using irrigation water will continue to be a renewable source of wealth, a factor contributing to arguments favoring the ongoing use of water in the west for irrigation. Additional restrictions on the use of water for irrigation will reduce field crop production.

Urbanization has diverse effects on field crop production. It competes with farming for land and once development starts to take place, it makes farming difficult in adjoining areas. Urbanization also favors horticultural crop production near the urban fringe. But at some point, as urbanization proceeds, the importance to the urban public of maintaining aesthetically pleasing open space value through farming increases. Both public and private ways can be found to preserve agricultural land. Such efforts are underway in some northeastern states as well as parts of California. The Europeans have such preservation as a central objective of their farm policy.

CONCLUSIONS

Economic and political pressures are making field crop production less profitable and riskier. In California, urbanization and ubiquitous environmental activism make these pressures especially powerful. But the benefits to the public from healthy agricultural systems are real and significant, so crop production will continue, including field crop production. Field crops which exhibit trends towards increasing returns and reduced production costs will continue to have a role in production systems. Increased regulatory pressure may favor field crop production because environmental standards cannot be met when only horticultural crops are produced. Alfalfa production will be sustained by the needs of dairy producers and horse owners, and it is of special value to sustainable production systems.