Jan-Mar 2001

Agrimanagement Newsletter

"Technology leadership does not guarantee that a company will either become or remain a blue chip in the New Millennium. Those that will lead the way in the 2000's are the companies that introduce desirable new technologies to a mass market,"

Clayton Christensen.

One client in our office upon receiving his color differentiated yield maps: "Wow! at my age there is more excitement in these than a center fold!"

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Reflections Upon the Past, Looking into the New Millennium

Agrimanagement, in its 35th year of business, made it's beginning as a company back in 1966. For this we gratefully thank our patrons and clients of the last 3 plus decades. Some of the same clients we serviced in the sixties are still using our services and we are very honored by this.

Amid the changes in personnel and crops, our mission has stayed the same: to provide services that aid in your decision making processes. Currently, most of you are working through changes of your own and we are too. Many who subscribed to our pest management services are aware of Garrett's decision to resign and begin employment as a nursery superintendent for Wildlands in the Tri-Cities. He will be available to us this summer on a referral basis to aid with transition questions, and assist with training our replacement person.

With respect to the question of replacement, we are currently reviewing applications. We hope to make a decision and announcement in March of his replacement.

We are also fortunate in that 4 to 5 of our 2000 year pest management department scouts including "varsity lettermen" Micah Herringa, Ryan Mathews, Eric Johnson and Bruce Hanson will be returning. Thus, we will once again be able to provide quality field and service work for the year 2001.

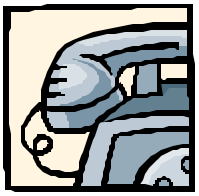
As we look to the issue of replacing an IPM coordinator specialist in our 35th Anniversary year, and current changes looming in agriculture, I looked into our history through the perspective of the 1968 and 1940 U.S. Yearbook of Agriculture. The 1968 edition highlights the science developing for a new era of agriculture. Lead feature articles were on the use of infrared aerial photography, parasitic wasps to feed on pest bud worms, ova & embryo transfer in sheep (today cloning!), improvement of soybean oils for human diet, variety development of tomatoes for mechanical picking and research to develop wash-n-wear cottons.

This era of the 1960's was referred to, some of you may recall, as the jet age. The technology soon was adapted to the marketing of perishable foods to distant markets far from the origin of production. On the ground the interstate highway system was being developed, that would soon find service for large refrigerated trucks moving produce and manufactured products over great distances in a short period of time. In 1965, Dr. King with a USDA grant, discovered that the oxidized off-flavor of milk could be avoided by ensuring adequate quantities of Vitamin E, an antioxidant (a popular word currently), into the cow's diet. This dramatically improved the milk production industry.

One chapter of the 1940 Yearbook outlined the status of American farm families. Price trends preceding the recession /depressions of 1920, 1929 and 1937 showed that declining Ag prices led the fall, and fell further and stayed down longer than non-agricultural prices. This fact pushed the concept for a need of more agricultural organization and governmental aid if farmers were to receive a fair share.

Data from Consumer Incomes in the United States 1935-36 estimated that about 40% of all 1.6 million farm families had incomes under $750/ year. Then, 25% of all Americans lived on farms and were producing 1/3 of the children in the U. S. Reportedly only 8.5% of all farmhouses had flush toilets compared to 85% of the urban dwellings. 25% of the farm homes had electricity compared to 95% of urban homes. (My own Dad and Mom received power to their homes in 1918 and plumbing in 1938. Oversupply of farm goods was stimulated by the availability of power equipment, which from 1914-1939 shifted 40,000,000 acres out of feed crops to production for the commercial market. Perhaps the good old days were not always that good. Most of you reading this had parents or grandparents who were there and survived those times too.

Well this is enough space to glimpse into the past, and realize that we live in a dynamic system of causes and effects flowing forward into our present and future. I will not speculate here on the "now" and "where to next", for current agriculture, but I'd suggest you record your ideas and thoughts in your personal journal. It could be interesting reading 5-10 years from now.



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Grower, economist, look at future of Red Delicious

Reprinted from the Capital Press, January 26, 2001

YAKIMA, Wash. - Several years ago, orchardist David Allan of Allan Brothers Inc., Yakima, was chairman of a Washington State Horticultural Association session on the future of Red Delicious apples.

Allan said the questions then are the same as they are now: are Reds losing market share, or are there just too many of them? How long will it take for growers to start making money again with Reds?

To take a closer look, Allan enlisted the help of David Marshall, an agricultural economist with Agrimanagement Inc., a Yakima consulting firm.

Allan emphasized theirs is only one viewpoint, and not a definitive answer to how profitability will return to growers. Marshall also stressed that their studies plotted a trend line using price and quantity only. The models do not use econometrics, Marshall said, where everything that affects price is included in the equation.

The models do, however, show us a great deal about the changing structure of the industry, and where the opportunities are, he said.

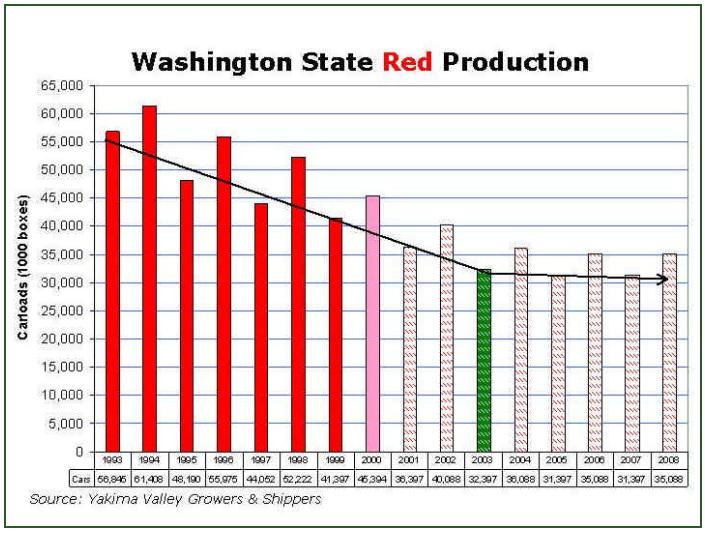
Allan and Marshall presented their findings at a meeting of the Washington State Apple Commission, Jan. 11 in Yakima. They also have presented their views at the Yakima Pom Club, various grower meetings and at meetings in Canada and Michigan.

Data from the Yakima Valley Growers and Shippers shows that production of Washington State Reds peaked in 1994 with more than 60 million boxes, and then appears to trend downwards in deference to other apple varieties, Allan said. Production from the 2000 crop year is estimated at less than 46 million boxes.

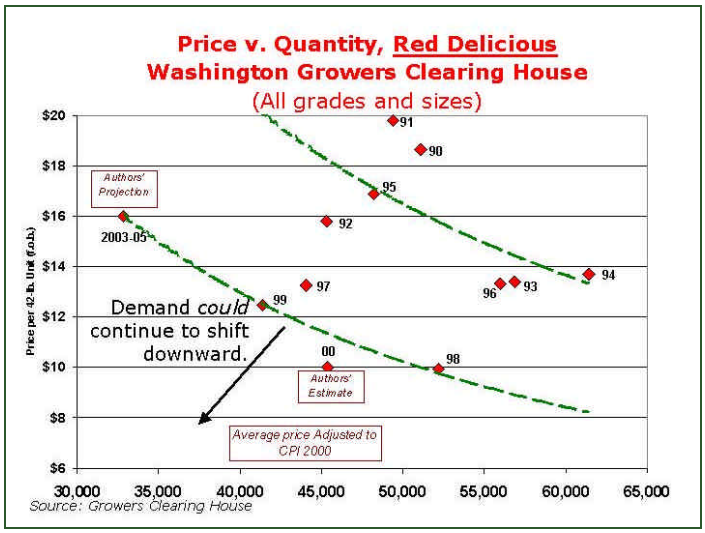
Allan said it is not surprising to note that prices fell as volume increased. In fact, prices fell from $15.80 per box (adjusted for inflation) in 1992, to $13.74 per box when production peaked in 1994.

Trend lines show a decline in demand that would indicate Reds are losing market share, Allan said. (See graph No. 1) In the 2000 crop year, the crop size is similar to 1992; yet Allan estimates prices won't be much over $10 a box by the end of the season.

The question then becomes: How much volume needs to be taken out to return to a $16 per box price, the profitable level last seen in the early 1990s?



Price vs. Quantity. This scatter diagram reflects an obvious change in the demand structure for Red Delicious apples.



Washington State Red Production. Assuming a reduction of 2.5 million boxes each year, economic viability for Red Delicious apples could be reached around 2003-2005. It could take longer if demand continues to drop or if growers react more slowly.

From the information plotted by Marshall and Allan, it appears Red Delicious growers will reach economic viability around 2003 to 2005, assuming production of Reds is reduced by 2.5 million boxes each year, leveling off at about 31.5 million boxes. (See graph No. 2)

If Red production drops by only 1.5 million boxes per year, however, that $16 per box level wouldn't be reached until 2005 to 2007, they said. Other factors also could figure into price, including fluctuating quality, imports, exports, and prices of competing fruits. Carryovers from previous years also affect quality and could affect market share, Marshall said.

If demand continues to drop, then it will take even longer for supply to drop enough so that prices are at profitable levels, Marshall said.

Allan said he is optimistic that if Reds are cut to 35 percent of total apple production, there will be more demand for newer varieties that create consumer excitement - and increase profits for growers.

If the projections are accurate, and Red production declines, Washington State could become known as the state that constantly is changing to grow newer varieties that consumers seek, Allan said. If newer varieties could increase per capita consumption, even slightly, that would be a boon to the industry. And production of the newer varieties could be controlled in various ways to prevent oversupply.

Nationally, production of Reds is also declining, Allan said. In 1993, Reds accounted for 43 percent of total U.S. apple production. In 2000, Reds were down to 35 percent.

Allan speculated that by the year 2008 or 2009, Reds could be only 21 percent of total production. With declines in other less profitable varieties, there would be room -- and demand -- for several newer varieties that would make more money for growers.

Allan and Marshall have assembled many charts to illustrate their viewpoint. Their power-point presentation can be downloaded at http://www.agrimgt.com/newsletters.htm.

Soil Microorganisms…What's the BIG deal?

by Scott Stephen

Microorganisms, because of their small size and hidden locations, often are forgotten in the day-to-day thoughts of a modern farmer. They are pushed back into the less visited areas of our minds only to be accessed when they have caused something to go wrong, e.g. a particular disease or unwanted physiological response. A comparative example would be a computer. We use our computer to search the web, write, keep checkbook balances, analyze data, e-mail, save information, and the list goes on, but we rarely think much about our CPU, the life of your computer. If it weren't for this little microchip we wouldn't be able to do anything with our computer. When we bought the computer we knew how fast it was and what kind it was, but we didn't ask to see it or to question what exactly it does or how it works…we just knew it was important and we rarely think about it until something goes wrong (or it's really slow) and in a lot of ways this is how we think of soil microorganisms. We know they are there and they are important, but what do we really know about them and their influence on their environment? What do they do and how do they do it? Even though we may spend little time thinking about soil microorganisms and their affect on soil and plants, they play a significant role in the 'life' of any soil.

Webster's dictionary defines a microorganism as an organism of microscopic size. More specifically they are a large and diverse group of free-living forms that live as single cells or cell clusters (Brock, 1970). Soil harbors a vast community or microorganisms such as bacteria, fungi, protozoa, viruses, algae and nematodes (Dinelli, 2000). Although small in size there is nothing small about their numbers in the soil. It is estimated that there are from five to ten million different species of plants, animals and microorganisms that inhabit the earth and it is believed that microorganisms comprise approximately 1.8 million of these (Turco et al., 1994). Of all the microbes listed above, bacteria have the greatest numbers and metabolic diversity in the soil. In fact, it is estimated that there are greater than 10,000 species of bacteria per gram of soil (approximately 0.91 cm^3) and possibly as many as 1 billion individuals. While bacteria have the greatest numbers, fungi contribute the most to the soil's microorganism biomass. Fungi can range from 0.8 to 3.0 tons per acre as opposed to 0.4 to 1.2 tons per acre for bacteria.

One might now ask, "what do all these microorganisms do in the soil"? Microorganisms are considered to be one of the five soil forming factors that shape the morphology of the soil, along with parent material, climate, topography and time (Karlen et al., 1992). They affect organic matter decomposition, humus formation, nutrient cycling, nutrient solubility, nitrogen fixation, pH and soil structure (Kennedy and Papendick, 1995; Dick, 1992). With these activities, soil microorganisms support the growth of plants and absorb, neutralize and transform compounds that might otherwise become pollutants in the environment (Dinelli, 2000). Microorganisms take materials from the environment and work them into their own fabric (utilia) and perpetually discard cellular material and waste product (Brock, 1970). These exudates provide nutrients to plants and act as a 'glue' to help build soil structure that has positive effects on soil, air and water movement and nutrient availability.

Because of their small size, microorganisms are many times overlooked and misunderstood. Their influence on the soil is largely related to their populations and with only a very small portion able to currently be cultured the full extent of their function and benefit is not completely understood (Kennedy and Papendick, 1995; Turco et al., 1994). But what we know is that microorganisms are paramount to the 'life' and health of soil, just as a CPU is vital for a computer to function properly.

In upcoming articles I will discuss such issues as: the role of microorganisms on the N-cycle, soil organic matter, and farming practices that affect microorganism community populations and diversity.

Carbon Sequestration

This is a new term that will have effects on agriculture--more so to the rain fed areas, but worth being aware of. The idea is that if more carbon could be integrated in the soil as organic matter, then less CO_2 will be discharged to the atmosphere to affect "global warming" (a position not all scientist agree with, incidentally). This concept will favor no-till practices.

In the mid-west as more coal and gas powered plants are being licensed to satisfy power consumers, regulations are already requiring the gas companies have arrangements to develop "sequestering farms" where trees or other CO_2 sinks are grown to offset the CO_2 emissions of the power plant. In conversation with a Minnesota consultant in October, it was mentioned that for available land to be contracted to a utility, as much as $50/acre may be paid. Already in Wisconsin more farms are looking to some type of agro-forestry to generate income. Similar practices exist here such as the growing of

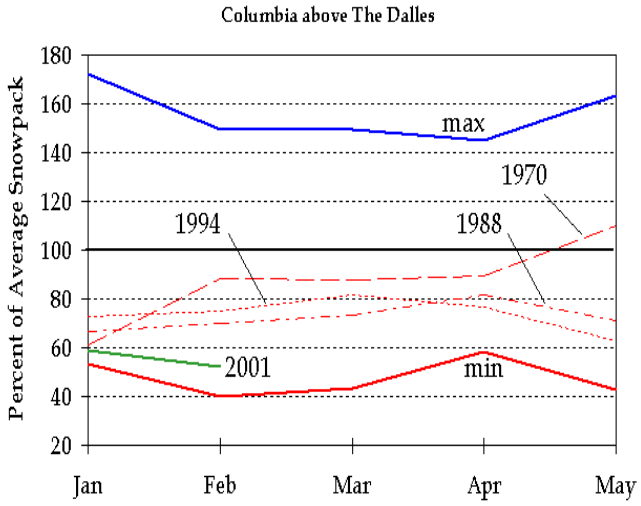
From Commodities to Retail

Can commodity producing farmers vertically integrate to be part of the retail supply chain, closer to the profit receiving end? This was proposed in a recent issue of Progressive Farmer. According to a news brief, Iowa farmers are forming cooperative ventures throughout the state to build ethanol plants. In Northwest Iowa, a relatively small 18 million-gallon ethanol plant is going in, owned by 415 corn grower investors. Other plants throughout the state are being built with annual capacities of 40 and 45 million gallons. These provide Iowa farmers with the opportunity to become stockholders and buy shares based on the amount of corn they want to sell for processing. For more information visit http//www.iowafarmer.com/010120/ethanol.htm.

Water Watch

Farming the east slopes of the Cascades has its advantages, such as good weather, rich soil, long growing season, etc., which all are due to the influence of the Cascades. But it can also sometimes be an adventure as we are reliant on those same mountains to provide us with the water we need to grow our crops. Most years there is more than enough snowpack to provide the needed water for farming, fish, and recreation, but every once in a while a shortage develops. So far this winter has been a fairly low snow producer in the mountains, which has some people wondering if this year water will be in low supply.

As the table shows, precipitation in most areas of the Basin is very similar to last year for the time period November-January, so our main concern is the mountain snowpack. According to the National Water and Climate Center as of February 1, there was not a single sub-basin in the Columbia Basin that exceeded 69% of the average snowpack for the year. In fact, most basins did not even break the 60% barrier. This snowpack season, as of Feb. 1, has managed to accumulate only 35% of a normal year's peak amount and is the lowest since 1977.



Average rainfall Nov-Jan

Location	1999-2000	2000-2001
Cowiche	3.04	2.53
Mattawa	1.27	1.41
Moxee	1.89	2.17
Paterson	1.14	1.12
Sunnyside	1.33	1.35
Wapato	1.79	2.02
WSU-Othello	2.06	1.78
WSU-Roza	2.22	2.26

Fortunately, we have from four to six weeks left to accumulate snowpack and we have already had a good start over the past week. The recent snowfall has caused some of these percentages to increase some and the forecast is optimistic. In fact the Weather Service's 90 day forecast calls for below normal temperatures and above normal precipitation, which would likely ease any worries of summer water deficiencies.

Info from National Water and Climate Center (www.wcc.nrcs.usda.gov) and Yakima Herald-Republic (Wed. Feb.7, 2001) and PAWS-WSU (http://index.prosser.wsu.edu).