

The Apple World 2003—Present Situation and Developments for Producers and Consumers

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Globalization of the apple business means significant change for producers, marketers and consumers. All producers compete in a single worldwide market. On a worldwide basis, apple acreage is actually declining but production is increasing because newer plantations are more productive than the old ones. Per capita consumption in some developing countries is increasing, i.e., China, in other countries is flat, i.e., the U.S., and in some European countries is declining. Between 1993 and 2001 per capita apple consumption in the world declined by 7% while consumption of all fruits was up. There is much greater competition for apples from fatty and sweet snacks and from other fruits, i.e., grapes and strawberries are available almost year-round. Another factor in reducing per capita consumption is that apples are inconsistent in terms of quality and freshness. The perception of many consumers is that apples are an old and not very exciting product and some think apples are an inconvenient snack food.

Major change has occurred in the way apple varieties are managed. New high quality varieties are being introduced, however the older varieties are not being purged from inventories. Varieties in the past have been released with little or no planning. Today there are many new, exciting varieties but they are all being managed. Today new varieties are being managed to avoid the mistakes of the past and provide discipline in inventory control, quality assurance and marketing.

WORLD PRODUCTION TRENDS

China has around 35% of world production (Table 1). Europe, as a whole, has about 25% of world production. Countries in Asia including Iran, Turkey, India, Korea and Japan have about 15% of world production. North American production is less than 10% as is production from all the countries in the Southern Hemisphere.

Alarming worldwide trends in acreage, production and per capita consumption were given as the major reasons for establishing the World Apple and Pear Association. The association's goals are to address the major world problems of overproduction, low consumption, poor quality, the wrong varieties and underpromotion. It is unfortunate that average fruit quality for much of the world's production is relatively low.

China and Europe produce 60% of the world's production. The opportunity for

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change in terms of reducing overall production must occur in these countries. If we are to improve the overall quality of apples in the world, it also must occur in these countries. Other countries in Asia, when combined with China and Europe, comprise 75% of the world's production. Change in production and quality must occur in these regions. The relatively low production and high quality in North America and the Southern Hemisphere countries mean that major changes in these areas will not result in major changes in world production. Their contribution to reducing worldwide production and improving quality will be negligible.

VARIETY TRENDS

The obsolete varieties Red Delicious and Golden Delicious are the major varieties produced in the world if China production is excluded (Table 2). These varieties combined with the older varieties Granny Smith, McIntosh and

Rome comprise about 48% of the world's production. Varieties such as Jonagold and Elstar, planted primarily in Europe, and Gala and Fuji, which are now planted throughout the world, are relatively minor varieties compared with Red Delicious and Golden Delicious. If we look at the projected trends for these varieties over the next 10 years (taken from the World Apple Review 2002), we can see that with these old varieties including Red Delicious and Golden Delicious there is expected to be relatively minor increase (3%) over the next decade. Jonagold and Elstar are expected to increase by 20 to 30%, Gala and Fuji by about 50%, and Pink Lady® by over 200%.

On a worldwide basis, apple production is expected to increase by about 13% in the next decade. This represents a major problem, given current overproduction. The fact that old and obsolete varieties as a group will still be increasing about 3% in the next decade is a significant problem for the world apple industry.

When Chinese data are included, they produce very significant amounts of both Fuji and Red Delicious, Fuji becomes the most important apple in the world.

Washington State is reducing its production of old obsolete varieties. The total production of Red Delicious increased from 1982 until 1992 but since 1992 has decreased considerably (Fig. 1). On a percentage basis, up until about 1990 Red Delicious was 70% of the production in Washington State, while today it is close to 40% of production. Red Delicious production in Washington constitutes about 20% of the global production of Red Delicious. If significant reductions in Red Delicious are to occur in the world and 80% of worldwide production is outside of Washington, it falls on

TABLE 1

Opportunities for global change.

Region	2000-2001 production (1000 MT)	% by region	Average fruit quality
China	20.5	34.7	low
Europe	14.6	24.7	low-high
Other Asia	9.0	15.2	low-high
North America	5.6	9.5	med-high
Southern Hemisphere	5.6	9.5	med-high
Former Soviet Union	3.8	6.4	low
World	59.1	100	

the rest of the world to do its share to reduce production of this variety.

In Washington there are increasing trends with other varieties (Fig. 2). From 1990 to 2002 there have been dramatic increases in both Fuji and Gala. Golden Delicious has been relatively stable, and Granny Smith has shown slight increases. Braeburn production is much lower than the above varieties and Pink Lady®, which is very new, is beginning to increase. Cameo production is less than Pink Lady®. The annual production of Golden Delicious, Fuji, Granny Smith and Gala each ranges from about 12 to 15% of total production in Washington today. This is a healthy diversification compared to the past when Red Delicious was 70% of total production.

VARIETY PLANTING TRENDS

Planting trends are a good indication of future production trends. A survey of nursery tree

sales in Australia, New Zealand, Washington State, South Africa, Chile and South Tyrol, Italy, shows that regions in the world are planting a different mix of varieties (Table 3). The data are the percentage of trees sold in the last planting season for old varieties, new varieties and the newest varieties. A small percentage of Red and Golden Delicious are being planted in Australia, New Zealand and Washington. Much higher percentages of these varieties are being planted in South Africa, Chile and South Tyrol, Italy, such that old varieties constitute approximately 36% of the trees planted in South Africa and in South Tyrol, Italy.

Of the new varieties, Gala, Fuji, Braeburn and Jonagold, the largest new plantings in most countries have been Gala. Gala is the leading variety in five of the six regions reported. Fuji is also an important variety in many regions. Braeburn is a major variety in New Zealand. There are few Jonagold and even fewer Elstar

plantings in these regions. Of the newest varieties, 43% of the trees sold in Australia are Pink Lady®. Pink Lady® is also important in New Zealand and South Africa and, to a lesser extent, in Washington, Chile and South Tyrol. Jazz®, a new variety from New Zealand, constitutes 15% of the trees sold in New Zealand. Sundowner, another Australian variety, is planted primarily in Australia. These newest varieties comprise 50% of all the trees planted in Australia and 37% of all the trees planted in New Zealand. In Washington State and South Africa, the newest varieties are 14 and 15% of all trees planted and, in Chile and South Tyrol, even lower percentages of the trees planted are of these newest varieties. If new products (varieties) are the lifeblood of an industry, Australia and New Zealand are positioning themselves well and are leading the world.

THE NEW VARIETY PARADIGM

The way varieties are introduced to commerce today is very different than it was just 5 years ago. In the old model varieties were free to everyone and any acreage could be planted. Anyone could pack or market them. Today that model is broken. Today new variety introduction follows a different model with four phases—variety development, a commercialization plan, variety management and acquiring new varieties.

Variety development begins with breeding organizations. Today there are a number of public, private and public/private partnerships in the business of breeding apples. There has been a recent increase in the number of breeding programs in the world. It is a growing industry. There are new breeding programs in Washington, South Tyrol, Italy and Spain. In France the research organization INRA has joined in a 50/50 partnership with French nurseries to develop and commercialize new varieties. The impetus for the alliance was cost sharing.

The importance of new varieties and variety introduction has increased because the owners of new varieties control intellectual property, and intellectual property has value. The value of new varieties is now protected with plant patents, plant breeder's rights and trademarks. To maintain the value, those who infringe on these patents are now being sued. The whole system of variety development and commercialization has become much more sophisticated, primarily because of the value of new varieties and the need to manage the valuable products.

Significant decisions must be made when a new variety is to be commercialized. The owner of the variety must select a licensee. The licensee is the variety management organization that may include a nursery, quality control specialist, horticultural expertise and a marketer. In New Zealand the research group HortResearch owns the varieties, for example, Pacific Rose® and Jazz®, but the licensee and variety manager is ENZA. The University of Minnesota is the owner of Honeycrisp™ but the licensee for Europe is the French organization Pomanjou. In Europe Honeycrisp™ is known as Honeycunch.

When there is a decision to commercialize a variety, a number of strategic issues must be addressed. A name must be selected, patents filed and trademarks registered. What will be the production levels for the variety, the growing sites, who will pack and handle the variety, what will the quality standards be and how will they be enforced and who will be marketing the new variety? Commercialization also includes the

FIGURE 1

Washington variety trends—Delicious.

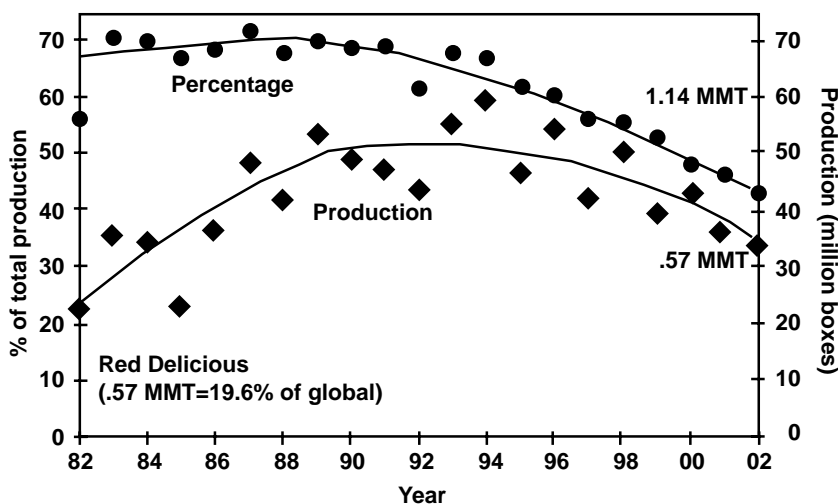
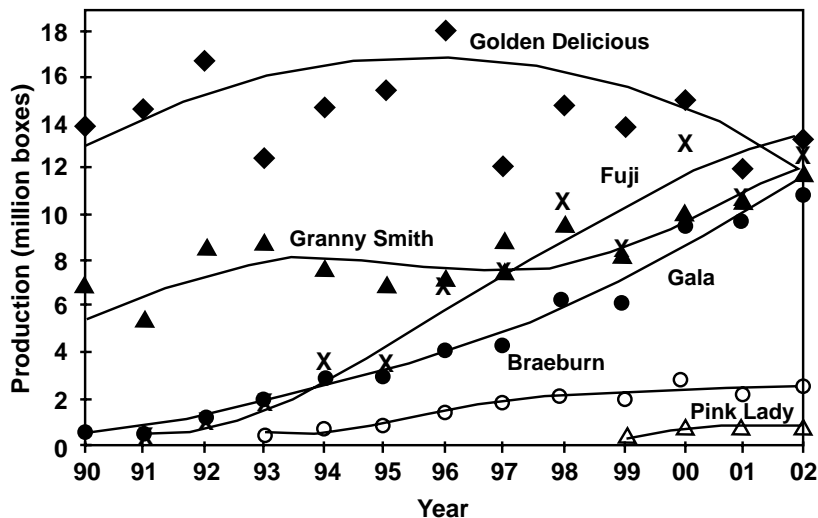


FIGURE 2

Washington variety trends—6 varieties.



establishment of royalties for trees, for acreage or for production.

Once a decision has been made to commercialize a variety, a variety management plan must be established and the leader of such a commercialization plan is the “variety manager.” As commercialization begins, a number of phases need to be carried forward, including studies of production practices, handling and storage regimes, quality assurance standards and a marketing program. The variety management program decides what production levels will be, what quality assurance standards will be and what the marketing plan will be.

Not everyone (or every fruit region) will be able to acquire each new variety. Negotiations with the owner or the licensee of the variety for the rights to produce and market a new variety have become important. Varieties will be acquired by individual growers or by associations. It is interesting to note that in Italy a new organization, SK Südtirol, the Variety Innovation Consortium of South Tyrol, has been established to acquire varieties for their industry from around the world. Its task is also to evaluate them and to make decisions for the industry about what will and will not be grown.

Not all regions or growers will be successful in acquiring new varieties. It may be that the owner or the licensee of the variety believes the climate is not suitable. For example, if British Columbia decided it wanted to grow Pink Lady®, the owner or the licensee of Pink Lady® may say, “No, we’re not going to license trees there because the growing season is too short and quality would be poor.” You also may not be able to acquire a new variety if you do not have a marketing plan or if you are a competitor of the owner or the licensee. You may also not be able to acquire a new variety if you do not have the infrastructure to guarantee success in terms of quality assurance and marketing.

There are costs for individual growers and whole industries that are associated with acquiring new varieties. The first cost may be tree royalties, acreage royalties or production royalties. These royalties are distributed to the owner and the licensee to pay for the variety management (horticultural and postharvest trials, quality assurance, marketing) but also to pay for the initial development of a variety. A second cost could be the loss of independence that some growers may feel when they realize that they may not be able to plant all new varieties at whatever acreage they choose. However, being interdependent, being part of a partnership or an alliance will provide a greater level of success. The way varieties are introduced today means that growers will become part of an alliance, a club, to acquire new varieties. For a new variety to be successfully managed requires a disciplined team comprised of growers, handlers and marketers.

APPLE ATTITUDES

How do consumers around the world feel about apples today? Many consumers feel that the apples sold today are a boring product, not fresh or new. This is a very common perception in developed countries today. Consumers also believe that apples are generally of poor quality. In Europe there are concerns about green and flavorless Golden Delicious, and throughout the world there is concern about soft, mealy and tough-skinned Red Delicious.

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Apples are not of good quality every time, they are inconsistent. The fact that Golden Delicious and Red Delicious are perceived to be of poor quality should be sobering to producers because they comprise 38% of the world’s production (excluding China).

Consumers are less concerned about cosmetics than they have been in the past. Eating quality has become more important. In Europe, appearance has not been very important. In North America appearance is becoming less important as consumers have learned to appreciate the eating quality of Braeburn and Fuji, two varieties that are not particularly attractive.

Some consumers believe that apples are inconvenient. They mean that apples are not bite sized and that the core is the problem. When compared to candy, potato chips or grapes, apples are inconvenient. When apples are presented to young children, they often resist, but if apples are cut up in pieces and presented to children, they will eat and eat and eat apples.

An article in the Los Angeles Times, October 23, 2002, had the headline “The temptation is back,” and the subheading “Washington apples are sweet, juicy and crisp again. And they’re not Red Delicious.” The headline on the second page of the article was “Make way, Red

TABLE 2

Production trends (excluding China [World Apple Review, 2002]).

Varieties	Production (1000 MT)	10-year projection (% change)
Red Delicious	5100	-3
Golden Delicious	4709	+9
Granny Smith	1659	+6
McIntosh	529	+2
Rome (Morgandrüft)	485	-1
Jonagold	1432	+23
Elstar	432	+33
Gala	1951	+50
Fuji	1287	+46
Pink Lady®	92	+200
Total	25,936	+13

TABLE 3

Estimates of the percentage of apple trees sold by variety in 2002 in selected regions. Estimates were provided by nurseries and averaged for each region.

Varieties	Australia	New Zealand	Washington State, USA	South Africa	Chile	South Tyrol, Italy
<u>Old</u>						
Delicious	1	0	5	16	10	20
Golden Delicious	4	0	4	11	5	15
Granny Smith	15	4	10	9	10	1
Totals	20	4	19	36	25	36
<u>New</u>						
Gala	18	35	27	24	58	24
Fuji	8	5	18	18	10	24
Braeburn	1	15	6	0	3	7
Jonagold	0	0	0	0	1	0
Totals	27	55	51	42	72	55
<u>Newest</u>						
Pink Lady	43	12	5	14	3	5
Honeycrisp	0	0	5	0	0	0
Pacific Rose	0	2	0	0	0	0
Sundowner	7	0	0	0	0	0
Jazz	0	15	0	0	0	0
Pacific Beauty	0	4	0	0	0	0
Tentation	0	4	0	0	0	0
Cameo	0	0	5	0	0	0
Totals	50	37	15	14	3	5
<u>Other</u>						
	3	4	15	8	0	4

Delicious,” sobering comments that should move the apple industry from its state of denial. It is clear from the tone of the article that consumers are very unhappy, particularly with Red Delicious, and that the newer varieties such as Gala, Fuji and Braeburn are going to provide consumers with a choice and with much better quality.

The apple industry must find solutions to these consumer issues. Why has it been so hard to put consumers first?

PUT THE CONSUMER FIRST

It is a new philosophy for the apple industry to put the consumer first. Trends show consumers have changed and that they are less happy, and therefore we must change. Consumers are tired of old products of mediocre quality. To put the consumer first, it will be necessary to regularly introduce new varieties, which is happening slowly, and purge the old varieties, which is not happening. The newly introduced varieties must eat well. It will be necessary to avoid color sports, as color sports contribute negatively to eating quality. The consumer must be provided with high quality every time and the standards that exist today must be raised and adhered to.

To put consumers first it will be necessary to reward producers for what consumers want, eating quality. There is a classic disconnect. Growers are paid for size and color when consumers want crisp, juicy and flavorful. Incentives do work. Growers are paid for size and color and that is what they deliver. When growers can be paid for eating quality, they will also

deliver it. To put the consumers first, it will be necessary to talk to consumers. Worldwide there is very little contact between producers and consumers. One reason is that between these two groups are packing houses, sales desks, marketers and retailers.

Putting the consumer first also means expanding the product mix with apples. It will be necessary to provide fresh cut products, organic products and to promote the health benefits of apples. Consumers clearly want new products and fresh cut is an example of a product that may have a place. There are certainly difficulties in producing a fresh cut apple product. Considerable research still needs to be done. The variety is key. It needs to be firm and tart. Pink Lady® has been one of the more successful varieties.

Organic fruit has also been another area that has expanded consumer interest. But organic fruit is difficult to produce almost everywhere in the world. It is extremely difficult in summer rainfall areas. The production costs in some of the drier areas of the world are not very different from producing conventional apples. The quality of organic apples is as good as conventional fruit and, in many cases, it is superior.

THE FUTURE: DIFFICULT ISSUES

It is hard to be optimistic when there are so many difficult issues facing the apple industry worldwide. There has been little progress in reducing production. The major concerns are with China and Europe where 60% of the world's apples are produced. Little progress has been made in eliminating obsolete varieties. Production of Red Delicious or Golden

Delicious will change little in the next decade. There has been little progress worldwide in increasing per capita consumption because fruit quality is often low, there is increased competition from snack foods and there is the perception that apples are ordinary and not exciting. Unfortunately producers have ignored the rules of a good business strategy and have not practiced inventory control, quality assurance or developed a marketing strategy. It is clear that there needs to be a global dialogue. The World Apple and Pear Association is a start but a very significant task is ahead to reduce the production of apples in general but in particular reduce the production of poor quality apples in the world which only serves to drag down the price of all apples.

THE FUTURE: SIGNIFICANT PROGRESS

One can be optimistic about the effect of some significant changes that are occurring in the apple business around the world. In an era of oversupply, mediocre quality and competition from other snack foods, the best chance to keep demand high is to introduce new products, that is, new varieties of better quality and greater choice. This is putting the consumer first. It is also important to manage varieties which will provide the discipline that has been lacking in the business of growing apples. Clubs, production limits, patent infringement lawsuits all will have a significant and positive effect on the apple industry. The development of such new products as fresh cut and organic will also provide consumers with more choices.