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Farm export optimism and upgrading Mississippi locks and dams

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A recent Senate committee's approval of legislation that authorizes the upgrading of the Mississippi River lock and dam system brought this issue back into the public spotlight. The Mississippi River locks and dams are an essential part of the grain transportation infrastructure of the central U.S., inexpensively delivering grain from the nation's breadbasket to Gulf ports for export shipment.

to repair aging structures as well as to meet the current needs of shippers.

Agricultural producers and their organizations have been directly involved in lobbying for the upgrade project. They contend that it is necessary to help U.S. farmers remain competitive with producers elsewhere in the world by providing an efficient, low-cost transportation system.

There are, no doubt, some very good reasons for upgrading the lock and dam system including repairs of the effects of aging and the opportunity to take advantage of advances that

continued on page 2

Handbook Updates

For those of you subscribing to the *Ag Decision Maker Handbook*, the following updates are included.

Farm Records Costs and Returns Summaries – File C1-10 (2 pages)

2003 Costs and Returns – File C1-11 (2 pages)

2003 Costs and Returns by Economic Area – File C1-12 (2 pages)

2003 Costs and Returns for Specialized Farms – File C1-13 (2 pages)

2003 Crop and Livestock Costs – File C1-14 (2 pages)

1994-2003 Trends in Efficiency Factors – File C1-15 (2 pages)

1994-2003 Trends in Income and Returns – File C1-16 (2 pages)

Please add these files to your handbook and remove the out-of-date material.

The system consists of a series of 27 locks and dams on the Mississippi River above St. Louis, Missouri, ensuring a nine foot channel for barge traffic as far upstream as St. Paul, Minnesota. The bulk of the system was built in the 1930s. The question has been whether or not this system needs to be upgraded

Inside . . .

Developments in GMO patent infringement cases Page 2
Is "residual fertilizer supply" in farmland deductible? Page 5

Farm export optimism and upgrading Mississippi locks and dams, continued from page 1

have been made in riverine transportation systems since the system was originally built. On the other hand, it is important not to overestimate the positive impact it might have on farmers and the price they receive for their seeds and grains.

I say that because much of the original economic justification for the system was based on ten-year-old grain export projections that have not materialized. Those familiar with grain export numbers know that rather than the 2.65 billion bushels that were projected for the 2003 crop year, the numbers have come in at 2.05 billion bushels. In general, corn exports remain flat at 20 percent below the 1979-1980 peak levels.

This does not mean that we will not have a spurt or even a long-term increase in corn exports. However, betting on increased exports based on hopes such that China will reverse a centuries-long self-sufficiency policy and become

a major long-term U.S. customer seems like a bet that is far from a sure thing.

None of this is to say that there won't be benefits of the lock and dam upgrade. There will. The question is who will benefit. It may or may not be the farmers who are arguing in favor of the project. In fact, we can think of situations in the future in which grain-belt farmers might even be disadvantaged. We already see South American soybean meal being shipped into the Port of Wilmington (NC); something that I would never have guessed in my wildest dreams a decade ago.

Cargill is attempting to ship ethanol from Brazil to the U.S. Again, that doesn't mean that barges full of Brazilian or Argentinean soybean meal will be making their way up the Mississippi River with a rebuilt system.

It also doesn't mean that they won't.

Developments in GMO patent infringement cases

by Roger A. McEowen, Associate Professor of Agricultural Economics and Extension Specialist, Agricultural Law and Policy, Kansas State University, Manhattan, Kansas. Member of Kansas and Nebraska Bars.

The ability to obtain a general utility patent on seed technology has led to cases in which farmers have been sued for misappropriation of the technology. Because seed is reproducible, any farmer that saves seed is a natural competitor of a company that sells seed. But, for seed that is patented, the saved seed exemption of the PVPA is avoided, and the saving of seed can be prohibited. Indeed, under technology use agreements for genetically modified seed presently in use, a farmer can use the seed for one-time planting, may not supply the seed to anyone else for planting, may not save any crop produced from the seed for replanting (or supply saved seed to anyone else for replanting) and must not use the seed or provide it to anyone for crop breeding, research, generation of herbicide registration data or seed production.

Clearly, a farmer signing a technology agreement is prohibited from saving seed subject to the agreement. But, what if the patented traits are present in the crops and/or resulting seed of a farmer that did not purchase or plant the patented seed? Has that farmer illegally infringed the patent even though having no intent to acquire the protected seed or infringe the patent? So far, courts have held that the process by which the patented seed arrives on a farmer's land is irrelevant. But, the tide may be turning.

The innocent infringer defense - the advent of a doctrine of equitable enforcement of patent laws?

The Canadian approach. In *Monsanto Canada, Inc. v. Schmeiser*, the Canadian Court

Developments in GMO patent infringement cases, continued from page 2

of Appeals held that Schmeiser, a Canadian farmer, had infringed Monsanto's patent on Roundup Ready canola by saving and replanting protected seed without a license. Schmeiser had not paid a license fee to use the technology and claimed that pollen drift from a neighbor's fields or passing grain trucks had contaminated his fields. Schmeiser claimed that he did not knowingly acquire the technology or segregate the contaminated seeds nor spray his crop with Roundup. Indeed, Schmeiser had a long-standing farming practice of saving his own canola seed and replanting that saved seed the following year. Thus, the initial sources of contamination were an inadvertent, but nonetheless unavoidable, result of a normal farming practice. However, the appellate court held that Schmeiser had infringed Monsanto's patent because he either knew or should have known that the subject seeds were glyphosate resistant.

After the appellate court's opinion in *Schmeiser*, the Canadian Supreme Court rendered an opinion concerning the patentability of the so-called "Harvard Mouse." In that case, the Court held that a mouse, as a higher life form, was not patentable under the specific wording of the Canadian Patent Act. The Court noted that the Canadian Patent Act provides for protection of intellectual property rights in the "making, constructing, and using [of an] invention and selling it to others to be used."¹⁴ The Canadian Supreme Court agreed to hear the case, with the key questions being whether the genes and cells of seeds and plants are covered by the Patent Act in spite of the wording of the statute, and whether plants and seeds are patentable in light of the Court's earlier opinion in *Harvard Mouse*.

Upon review, the Canadian Supreme Court ruled that plants, as a higher life form, are not patentable subject matter, but that the Monsanto patent at issue applied to the gene and was valid. Schmeiser was found to have infringed the patent because his "use" of the patented invention deprived Monsanto of the full enjoyment of the monopoly conferred by the

patent. The Court noted that mere possession of a patented invention creates a rebuttable presumption of "use," and that the intent of the alleged infringer may be relevant to rebutting the presumption. The Court reasoned that Schmeiser failed to provide sufficient evidence to rebut the presumption of "use" and had infringed Monsanto's patent. On the issue of damages, however, the court noted that the Patent Act only entitles the patentee whose patent has been infringed to the portion of the infringer's profit which is casually attributable to the patented invention. Because Schmeiser earned no profit from infringing Monsanto's patent, Monsanto was not entitled to damages. Thus, Schmeiser was not required to pay Monsanto any damages, penalties, court costs or the technology use fee of \$15 per acre. Schmeiser, however, is barred from using Roundup Ready canola unless he pays a license fee, and must turn over any Roundup Ready seeds remaining in his possession.

Key U.S. ruling. Three weeks before the Canadian Supreme Court's opinion in *Schmeiser*, the United States Court of Appeals for the Federal Circuit, in *Smithkline Beecham Corp. v. Apotex Corporation*, invalidated a patent on a self-reproducing antidepressant drug because previous clinical trials constituted a prior use. In the 1970s, a British company invented and patented paroxetine, an antidepressant drug. Eventually, the company developed a process to produce the crystalline hydrochloride salt of paroxetine, paroxetine hydrochloride (PHC). In 1980, Smithkline Beecham (SB) received a license for the technology and began manufacturing it. In the mid-1980s, an SB chemist created a new crystalline form of PHC known as PHC hemihydrate. SB was awarded a patent for PHC hemihydrate in 1988 and began marketing it as Paxil in 1993. In 1998, Apotex sought approval from the Food and Drug Administration to market its own PHC antidepressant drug with PHC anhydrate as the active ingredient. SB brought an infringement action against Apotex in 1998 claiming that Apotex was infringing its PHC hemihydrate patent by manufacturing PHC

Developments in GMO patent infringement cases, continued from page 3

anhydrate tablets that necessarily contain, by processes of nature, trace amounts of PHC hemihydrate.

The trial court found that the hemihydrate that SB created in 1984 had spread (i.e., seeded itself) to numerous manufacturing environments, including those of Apotex. As a result, under normal conditions in a seeded environment, some of the original anhydrate converted spontaneously into the patented hemihydrate crystals. The court upheld the patent's validity, but ruled that Apotex had not infringed the patent because its production processes had resulted in small, commercially insignificant amounts of hemihydrate. The trial judge specifically noted that failing to limit the scope of the patent would lead to inevitable infringement, and opined that it is a defense to a charge of patent infringement that the patentee caused the infringement. In the agricultural setting, that could mean that the judge would not hold a conventional (or organic) crop farmer liable for patent infringement when the reason for the presence of the patented traits in growing or harvested crops is cross-pollination, contamination from passing grain trucks or machinery, or simply because trace amounts of the patented genes and cells appear in conventional seed stocks. However, by establishing a patent infringement test of commercial significance, the judge apparently would require any commercially significant amounts of the patented technology to be given back to the patentee.

On appeal, the Federal Circuit Court of Appeals disagreed with the trial court by noting that any amount of hemihydrate PHC produced (whether commercially viable or not) infringed the patent, but agreed that Apotex had not infringed the patent because SB's clinical trials

constituted a prior use. As a result, the compound was already in the public domain, and SB's patent was invalid.

A concurring opinion reasoned that the patent was invalid not because of prior use of the subject matter, but because the subject matter was not patentable. The concurrence noted that man-made products or processes are patentable, but products that result from natural processes are not patentable. Thus, PHC would qualify for a patent because it is a man-made product, but because the original paroxetine anhydrate could naturally convert itself into the hemihydrate, the resulting PHC is not patentable. The judge compared the seeding and conversion process of PHC to the spread of patented, biotech seed traits via cross-pollination, and concluded that, "[T]he implication – that the patent owner would be entitled to collect royalties from every farmer whose cornfields contained even a few patented . . . stalks – cannot possibly be correct." The judge went on to state, ". . . In short, patent claims drawn broadly enough to encompass products that spread, appear, and 'reproduce' through natural processes cover subject matter unpatentable under Section 101 – and are therefore invalid."

Future implications

In any event, the trial judge's comments in *Smithkline Beecham*, the Federal Circuit's opinion (especially the concurrence) in the same case and, to a lesser extent, the Canadian Supreme Court's opinion (particularly the dissent) in *Schmeiser* provide a framework for the development of future cases and legislation supporting an equitable enforcement of patent laws respecting both the rights of patentees and the rights of innocent infringers.



Is “residual fertilizer supply” in farmland deductible? *

by Neil E. Harl, Charles F. Curtiss Distinguished Professor in Agriculture and Professor of Economics, Iowa State University

Differences between taxpayers and the Internal Revenue Service over the deductibility of fertilizer, lime and other soil amendments have a long history. The most recent conflict is over the question of whether premium fertilizer levels or the “residual fertilizer supply” are deductible as fertilizer under the statutory provision enacted in 1960.

History of attempts to deduct fertilizer costs

In keeping with the view that all expenditures with a useful life of more than one year must be depreciated or amortized, the Internal Revenue Service in two early cases took the position (which was upheld by the U.S. Tax Court) that the cost of fertilizer and lime applied to land was a capital expenditure which had to be deducted over a period of years rather than all being deductible in the year applied. In the first of the two cases, *Appeal of Sanford*, the taxpayer expended funds in an effort to restore soil fertility (mostly in the form of labor) which were deducted currently. IRS took the position that expenditures were for the “preparation and upbuilding of the land for future crop production” and thus were capital in nature. The Tax Court agreed with the Commissioner.

In the second case, *Swaney v. Commissioner*, the taxpayer applied lime to farmland and deducted the entire cost as a current trade or business expense. IRS argued that the cost of lime application was a capital expenditure which could only be deducted at the rate of 10 percent per year. The Tax Court agreed that the expenditure was capital in nature but allowed a deduction at the rate of 25 percent per year.

In a 1947 IRS ruling, the cost of lime spread on farmland constituted an exhaustible capital expenditure that had to be amortized over the period of its effectiveness if the benefit of the

lime application extends over a period of several years.

After several years of audit conflict over the issue of the rate of amortization for fertilizer, lime and other soil amendments, Congress enacted in 1960 a provision allowing a current deduction “...for the purchase or acquisition of fertilizer, lime, ground limestone, marl, or other materials to enrich, neutralize, or condition land used in farming, or for the application of such materials to such land.” To deduct such expenditures currently, the taxpayer must be engaged in the business of farming and the land involved must have been used for the production of crops, fruits or other agricultural products or for the sustenance of livestock “before or simultaneously with the expenditures...” The regulations state that “expenditures for the initial preparation of land never previously used for farming by the taxpayer or his tenant” are not subject to the election.

The latest controversy

The latest controversy over deductibility of fertilizer, lime and other soil amendments came to light with release of a private letter ruling in late 1991. In that ruling, *Ltr. Rul. 9211007*, a farmer from West Central Minnesota purchased a farm but had the farmer’s corporation (owned 64 percent by the farmer) purchase the “residual fertilizer supply” in the land acquired. The acquired land was then leased to the farmer’s corporation under a one-year lease. The farmer argued that the prior owner of the farm had applied fertilizer to the point where an increased level of fertilizer in the soil resulted, referred to as the “residual fertilizer supply.” The corporation (as the taxpayer in the ruling) claimed an

continued on page 6

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Is "residual fertilizer supply" in farmland deductible?, continued from page 5
amortization deduction over a seven-year period for the residual fertilizer supply.

IRS agreed that capitalized farm fertilization costs could be amortized, but the taxpayer must be the beneficial owner of the fertilizer in order to be permitted to claim an amortization deduction. IRS noted that the farmer acquired the land containing the alleged residual fertilizer supply:

"...which was incorporated into the land and, for all practicable purposes, was inseparable from the land. This fertilizer reportedly made the land more productive than it otherwise would have been. Although the taxpayer [the corporation] allegedly purchased any residual fertilizer supply in the land, the taxpayer was able to derive the benefit from it only by entering into a land lease agreement with the landowners..."

The ruling points out that the landowners were the beneficial owners of any fertilizer on the land and the corporation could not amortize any of the costs related to the fertilizer.

The ruling denied a deduction for the residual fertilizer supply on two other grounds:

- As the ruling states, "...in order for a taxpayer to claim an amortization deduction for exhaustion of fertilizer acquired with the

land, the taxpayer must establish the presence and extent of the fertilizer." The ruling notes that the corporation "...did not measure nor was data provided to indicate, the level of soil fertility attributable to fertilizer applied to the land by the previous owner." The ruling concludes that the corporation as the taxpayer failed to establish the extent of any residual fertilizer.

- The ruling also notes that, in order to amortize the cost of the fertilizer supply over time, the taxpayer must in fact be exhausting the fertilizer in the soil. In the facts of the situation in the ruling, the soil test reports showed that the level of fertility in the majority of the parcels was not declining as is required for deductibility. As the ruling pointed out, "...the taxpayer has provided no evidence indicating the period over which the fertility attributable to the residual fertilizer supply will be exhausted, and if in fact what was claimed as the residual fertilizer level was declining."

The current situation

Surprisingly, although the 1991 ruling is substantial authority against deductibility of the residual fertilizer supply, no further authority has emerged in the dozen years since the ruling was published even though the practice of claiming a deduction has grown in some areas of the country. Quite clearly, in the interest of fairness and equity, further guidance is needed as to the guidelines for deductibility if any is to be allowed.

... and justice for all

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