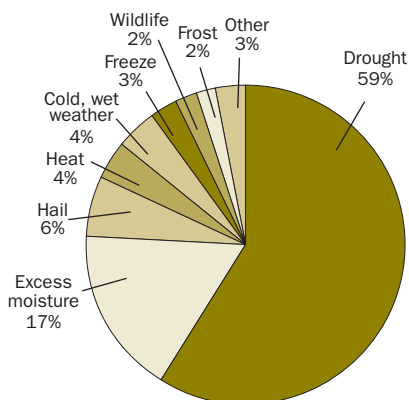


CROP INSURANCE

FOR PENNSYLVANIA FIELD CROPS

Multi-peril crop insurance is a valuable risk management tool that allows growers to insure against losses due to adverse weather conditions and wildlife. It shifts unavoidable production risks to an insurance company for the payment of a fixed amount of premium per acre. Of the \$261 million paid for crop losses in Pennsylvania since 1981 (\$218 million in the past ten years), 59 percent was for drought (Figure 1).

Figure 1. Why crops fail in Pennsylvania, 1981–2007.



Participation in the crop insurance program in Pennsylvania has increased dramatically since the 1990's, with a large increase in acreage and coverage due to the severe droughts experienced in many parts of the Commonwealth in recent years. Sign up for crop insurance exceeds one million acres and protection in force exceeds \$400 million. The amount paid by for crop losses exceeded the total amount producers paid for the protection in 19 out of the past 20 years. During that time period, Pennsylvania farmers with crop insurance have received \$3.25 for crop losses for every \$1 they have paid in premiums (Figure 2).

The federal government has decided that a crop insurance program is preferable to disaster payments. Disaster programs often involve political tradeoffs that can lead to deficit spending. It is better to have an insurance program in place that is available nationwide and gives farmers the freedom to choose the level of coverage they need based on their own yield history. A minimum level of crop insurance, called CAT insurance, is available to all farmers regardless of size at no premium cost (all premiums are paid by the federal government). Higher levels of crop insurance (buy-up protection) are also federally subsidized, with farmers nationwide paying only 33 to 62 percent of the actual cost of the insurance (depending on the level of coverage selected). Under the 2008 Farm Bill, all acreage must be covered by crop insurance or under the non-insured assistance program (NAP, available through USDA-Farm Service Agency) to be eligible for future disaster assistance programs.

The Commonwealth of Pennsylvania is a strong supporter of crop insurance and has allocated over \$19 million since 2000 to help farmers buy crop insurance. This money helps producers to better afford higher levels of buy up protection so that they are better protected when disasters occur.

Crop insurance is available for at least one commodity in every county in Pennsylvania, with a total of 27 crops represented across the state. Field crops covered include corn, corn silage, soybeans, wheat, barley, spring oats, grain sorghum, forage seedings, forage production (including pasture), and tobacco. Field crops account for 96 percent of all the acres covered by crop insurance in Pennsylvania and represent about 84 percent of the value of insurance protection sold on a per acre basis.

The purpose of this publication is to introduce the types of crop insurance available to field crop producers by:

- explaining how an actual production history (APH) is calculated.
- discussing what is meant by insurance units.
- illustrating how insurance premiums and loss payments are calculated.
- comparing the benefits and costs of two commonly used crop insurance products.
- identifying crop insurance options for livestock producers.
- listing important crop insurance deadlines in Pennsylvania.

Types of crop insurance policies.

Farmers who grow field crops may select from various crop insurance policies. Yield-based actual production history (APH) insurance at CAT and buy-up levels is available for major crops in most counties. Revenue insurance, dollar value, and group risk policies may also be available. Insurance protection is also available on a whole farm basis as Adjusted Gross Revenue (AGR) insurance in 14 counties and as AGR-Lite in every county (except Philadelphia). If crop insurance is not available for a crop in your county, coverage may still be available via a written agreement; contact a crop insurance agent for more information on using written agreements.

Before considering a particular kind of crop insurance policy, you should first consider how much risk you are willing to bear and what you need to protect. Some common objectives are:

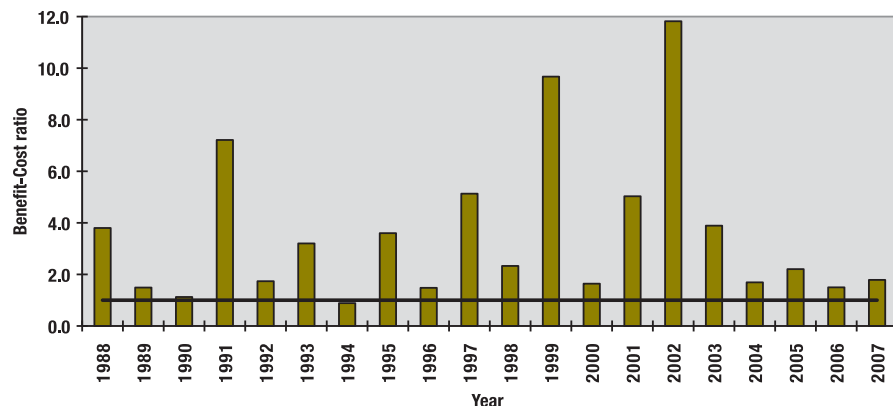
- 1) reducing year-to-year income variability.
- 2) replacing lost feed.
- 3) providing a minimum cash flow to cover input costs.
- 4) securing adequate credit.

YIELD-BASED INSURANCE COVERAGE:

Actual Production History (APH)

insurance protects producers against losses due to natural causes such as drought, excessive moisture, hail, wind, frost, insects, and disease. The APH plan is sometimes referred to as Multiple Peril Crop Insurance (MPCI). Farmers select from 50 to 75 percent (up to 85 percent for corn, soybeans, wheat, and barley) of the amount of their average yield to insure. Farmers can also select between 55 and 100 percent of the crop price established annually by the United States Department of Agriculture, Risk Management Agency

Figure 2. Farmer benefits from crop insurance per \$1 of premium.



(USDA, RMA). If the harvest is less than the yield insured, the farmer is paid for the loss based on the difference. Loss payments are calculated by multiplying this difference by the insured percentage of the established price selected when crop insurance was purchased. APH policies are available in most Pennsylvania counties for corn, soybeans, forages (containing more than 25% alfalfa), grain sorghum, oats, barley, wheat, and tobacco.

Catastrophic crop insurance (CAT) was introduced in 1995 to replace ad hoc disaster assistance programs enacted by Congress with an insurance-based producer safety net that reflects a farmer's actual production history. Per acre insurance premiums for CAT are totally paid by the federal government. For a flat application fee of \$300/crop/county, producers get a crop insurance yield guarantee of 50 percent of their farm's actual production history yield, with any losses reimbursed at 55 percent of the established crop price. Compared to higher levels of coverage, CAT provides only a low level of protection against yield losses. For some diversified farmers this level of coverage is enough to protect them against severe cash-flow shortfalls. Corn farmers who are interested in a revenue-based insurance program rather than a yield-based program can get CAT levels of Indexed Income Protection.

Group Risk Plan (GRP) policies use a county index as the basis for determining a loss. When the county yield for the insured crop, as determined by the National Agricultural Statistics Service (NASS), falls below the chosen trigger level, a loss payment is made to the farmer. Payments are not based on the individual farmer's loss records. Yield levels are available for 70 to 90 percent of the expected county yield. GRP is also available as CAT coverage. GRP protection involves less paperwork and costs less than farm-level coverage. However, individual crop losses may not be covered if the county yield does not suffer a similar level of loss. Farmers best protected by this type of insurance are those with crop losses that typically follow the county pattern. GRP is available for corn in 47 counties and forage production in 29 counties in Pennsylvania.

Two new group risk policies are available on a pilot program basis for pastures, rangeland and forage in Pennsylvania. Unlike traditional county based GRP policies, they are available on less than county-size grids; producers are insured based on their location (grid) rather than their county. One product available in 17 counties in southwestern Pennsylvania is based on approximate 12 x 12 mile grids and uses a rainfall index as a measure of crop productivity. The rainfall index policy protects farmers against yield losses related to lack of precipitation. It is based on historical NOAA rainfall data and NEXRAD weather radar system data. Producers must choose at least two, 2-month time periods to insure under the rainfall index policy. The other product, available in 9 coun-

ties in northeastern Pennsylvania, is based on approximate 4.8 x 4.8 mile grids and uses a vegetative index as a measure of crop productivity. The vegetative index policy protects farmers against yield losses related to any plant stress that would affect vegetative greenness. It is based on satellite data from the U.S. Geological Survey Earth Resources Observation and Science data center. Producers choose one or more 3-month time periods to insure under the vegetative index policy. Because these policies are only available on a pilot program basis, producers outside these regions can not obtain coverage through a written agreement with their crop insurance agent. Expansion of these programs to other parts of Pennsylvania is likely in the near future. Honey bees and byproducts may also be insured under these plans via an apiculture endorsement.

Dollar Plan (Dollar) coverage provides protection against declining value due to damage that causes a yield shortfall. The amount of insurance is based on the cost of growing a crop in a specific area. A loss occurs when the annual value of the crop is less than the amount of insurance. The maximum dollar amount of insurance is stated on the actuarial document. Farmers may select a percent of the maximum dollar amount equal to CAT (catastrophic level of coverage) or additional coverage levels. The Dollar plan is available for forage-seeding policies in 66 counties in Pennsylvania. Many field crop producers may also be interested to know that Dollar plan coverage is also available for fresh-market sweet corn in every county in Pennsylvania.

REVENUE INSURANCE PLANS:

Crop Revenue Coverage (CRC) is an insurance product for corn, soybean, and wheat that provides protection against both yield and price risk. Unlike APH policies that cover only yield losses, CRC provides revenue protection. The farmer selects a level of revenue to protect based on price and yield expectations. Losses are paid if revenues fall below the guarantee at the higher of an early-season or late-season price as determined from futures prices on the Chicago Board of Trade (CBOT). Late versus early season prices are covered for up to 100% increases and unlimited decreases. CRC coverage is available for corn in 66 counties, grain sorghum in 57 counties, soybean in 51 counties, and wheat in 57 counties. CRC insurance is not available as CAT coverage.

Indexed Income Protection (IIP) is an insurance product that is available for corn growers. Losses are paid if revenues fall below the guarantee because of price or yield declines from early-season expectations. IIP coverage is available for corn in 66 counties. CAT coverage under IIP may offer more benefits than yield-based CAT coverage depending on the producer's unit structure, average yield, and price election for the crop year.

Gross Revenue Income Protection (GRIP) is a group-risk revenue insurance product based on the GRP yield program. It is available for corn in 47 counties and forage production in 29 counties. For this program, county-level GRP yield information is converted to revenue using the producer's choice of either the price formula for IIP or CRC.

Adjusted Gross Revenue (AGR and AGR-Lite) insure the revenue of the entire farm rather than an individual crop by guaranteeing a percentage of average gross farm revenue. These plans use information from the past five consecutive years of a producer's Schedule F tax forms to calculate the policy revenue guarantee. Depending on the number of commodities grown, producers have the choice of three coverage levels (65, 75, and 80%) and two payments rates (75 and 90%).

- **AGR** insurance is currently only available in 14 counties in Pennsylvania. Besides limited availability, a major limitation of this product is that only farms with 35 percent livestock revenue or less are eligible for coverage. An additional requirement of AGR coverage is that if crops with individual crop insurance availability exceed 50 percent of farm revenues, MPCCI coverage is also required (CAT insurance can be used to meet this requirement). The maximum policy size for AGR is \$6.5 million (based on maximum adjusted gross revenues of \$13.3 million and the 65% coverage level and 70% payment rate). The sign-up deadline for AGR is January 31.

- **AGR-Lite** represents a major improvement on the original AGR product, expanding it to provide protection for all crops and animal revenues (no limitation on livestock income) and making it available to farmers statewide (except Philadelphia County). The application process for AGR-Lite is also streamlined in various ways and there is no requirement for the purchase of MPCCI (but it may be purchased at the producer's option). The maximum policy size for AGR-Lite is \$1 million (based on maximum adjusted gross revenues of \$2,051,282 and the 65% coverage level and 70% payment rate). The sign-up deadline for first-time AGR-Lite policy holders is March 15.

Prevented Planting Coverage. Prevented planting coverage provides protection whenever an eligible crop can not be planted because of adverse weather conditions, provided it is a conditional general to the geographic area. In Pennsylvania, prevented planting coverage is automatically part of all barley, corn, soybeans, grain sorghum, oats, and wheat policies (including CAT policies). Basic prevented planting coverage provides an amount of protection equal to 60 percent of the insurance guarantee; higher levels of protection at the 65 and 70 percent level are available for additional premium.

Determining the actual production history

history. The first step in developing a crop insurance program is to establish your actual production history (APH). This is used to set the guarantees under the APH, CAT, CRC, and IIP plans of insurance. Assessing the need for production risk protection must be based on your farm's production potential and yield variability. It is a good idea to establish the APH for each insurance unit with a crop insurance agent long before the sign-up date. An APH yield is needed even if you are only interested in the catastrophic (CAT) level of coverage. It will also allow you to evaluate higher levels of APH or coverage under revenue insurance plans (if they are available in your county).

Establishing an APH yield requires a minimum of four years of records for each crop and land unit to be insured. Information used to prove crop yields include sale receipts, farm or commercial storage records, and feed consumption records. The records must be for continuous years, starting with the most recent year and continuing back in time. Once a missing year is reached, no yield data before that year may be used. Dropping out a yield from one year because of poor production is not allowed. It is not considered a missing year of records if the crop to be insured was not planted in a certain year. In that case, a zero acreage report is submitted and continuous records are maintained even

without data for that year. This is especially important for growers who rotate crops.

If at least four successive years of records are not available, a transitional or "T"-yield is substituted for each missing year. Each insured crop within a county has an assigned "T"-yield. It is usually based on the latest available 10-year county average yield. Farmers with no records at all are assigned 65 percent of the "T"-yield as their APH yield. Farmers with one year of records receive 80 percent of the "T"-yield for the other three years to calculate their APH yield. Farmers with two records receive 90 percent of the "T"-yield for the other two years. Farmers with three years of records receive 100 percent of the "T"-yield for the one remaining year. Once each year has been assigned a yield, the APH is an average of the four yields. If only a couple years of yield records exist, the APH yield may be considerably below the actual expected yield, because of the reduced "T"-yields. In that case, buying a GRP or GRIP policy (if available) is an alternative strategy, since guarantees for these plans are based on county yields rather than individual farm yields. This could provide a higher level of protection while allowing you to accumulate records to establish an APH yield. However, remember that GRP and GRIP loss payments are calculated based on the county average yield and you might not be paid for an individual loss on your farm.

New farmers or those who have never planted the crop to be insured receive 100 percent of the "T"-yield for determining their APH yield. If they continue to plant the crop for four years, the "T"-yields will be replaced with the actual production each year. New producers who have previously been closely associated with a particular farming operation, such as children taking over a family farm, can use the previous operator's records to establish their APH yield.

Once at least four years of production history are available, the APH is the average of all of the yearly reported yields. Additional years of data will be averaged into the APH yield until 10 years are included. Once 10 years of yields are available, the APH becomes a moving 10-year average. When a new year of production history is added, the oldest record is dropped from the APH calculation.

When a new yield record is added to the APH history, the APH cannot decrease by more than 10 percent in any one year. The APH can not fall to less than 70 percent of the "T"-yield for growers with only one year of yield records, 75 percent for growers with two to four years of yield records, and 80 percent for growers with five or more years of yield records. This "floor" prevents one year with a severe crop failure from having a disproportionately large influence on the APH yield, especially when only a few years of

Table 1. Example of the cost of actual production history (APH) insurance for corn grain and gross returns under various yields (Dauphin Co., 100 bu. APH yield, \$4.75 indemnity price, \$5.75 local cash price).

Type of Coverage:	Level of crop insurance protection ¹									
	No Insurance	CAT	APH	APH	APH	APH	APH	APH	APH	APH
Yield guarantee:	0%	50%	50%	55%	60%	65%	70%	75%	80%	85%
Price guarantee:	0%	55%	100%	100%	100%	100%	100%	100%	100%	100%
Producer premium ² :	n/a	\$0.00	\$5.52	\$7.03	\$8.22	\$10.98	\$13.61	\$18.46	\$26.25	\$38.35
Administrative fee:	n/a	\$300.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
Actual yield (bu/A)	Gross return minus insurance cost (\$/acre)									
0	\$0	\$131	\$232	\$254	\$277	\$298	\$319	\$338	\$354	\$365
10	\$58	\$162	\$242	\$264	\$287	\$308	\$329	\$348	\$364	\$375
20	\$115	\$193	\$252	\$274	\$297	\$318	\$339	\$358	\$374	\$385
30	\$173	\$225	\$262	\$284	\$307	\$328	\$349	\$368	\$384	\$395
40	\$230	\$256	\$272	\$294	\$317	\$338	\$359	\$378	\$394	\$405
50	\$288	\$288	\$282	\$304	\$327	\$348	\$369	\$388	\$404	\$415
60	\$345	\$345	\$339	\$338	\$337	\$358	\$379	\$398	\$414	\$425
70	\$403	\$403	\$397	\$395	\$394	\$392	\$389	\$408	\$424	\$435
80	\$460	\$460	\$454	\$453	\$452	\$449	\$446	\$442	\$434	\$445
90	\$518	\$518	\$512	\$510	\$509	\$507	\$504	\$499	\$491	\$479
100	\$575	\$575	\$569	\$568	\$567	\$564	\$561	\$557	\$549	\$537
110	\$633	\$633	\$627	\$625	\$624	\$622	\$619	\$614	\$606	\$594
120	\$690	\$690	\$684	\$683	\$682	\$679	\$676	\$672	\$664	\$652
130	\$748	\$748	\$742	\$740	\$739	\$737	\$734	\$729	\$721	\$709
140	\$805	\$805	\$799	\$798	\$797	\$794	\$791	\$787	\$779	\$767
150	\$863	\$863	\$857	\$855	\$854	\$852	\$849	\$844	\$836	\$824
Yield guarantee:	0	50	50	55	60	65	70	75	80	85

1. CAT: catastrophic crop insurance (APH); available at no premium cost to the producer (flat application fee of \$300/crop/county).

APH: higher levels of APH insurance ("buy-up protection") available for additional premium (\$30/crop application fee).

2. Producer premium takes into account only federal premium subsidies. Additional state subsidies may be available.

yield records are available. There is also an option to substitute 60 percent of the “T”-yield for actual yields that are less than 60 percent of the “T”-yield. There is a slightly higher premium when this option is selected.

Selecting an insurance unit for crop insurance. You have several options on how you divide your land to determine APH yields, loss payments, and premiums under crop insurance. Each parcel of land for which claims are calculated is called an “insurance unit.” Unit types include basic, optional, and enterprise units. One farming operation may have several insurance units. In this situation, it is possible to have a crop loss on one unit and receive a loss payment, while the other units on the same farm produce a record crop. As a result, many farmers prefer to divide their land into as many units as possible. You should check with a crop insurance agent to find out how many and what type of insurance units your crops qualify for, and how this could affect your premiums.

You receive one basic unit for the land you own and cash rent within a county. You also receive one basic unit for each landlord with whom you crop share rent. Each crop share landowner can also insure their own interest in the crop as a separate unit. Each different crop also creates a separate unit, and tracts of land in different counties must be insured as separate units. Each crop/county can have a different type of policy and level of coverage, and

could receive a loss payment separate from the other units. Separate production records must be kept for each basic unit. Insuring all acres as basic units entitles producers to a 10 percent discount on their premiums.

An enterprise unit combines all of the acres of a single crop within a county in which you have a financial interest into a single unit, regardless of whether they are owned or rented, or how many landlords are involved. Since the enterprise units are usually larger than basic units or optional units, it is less likely that the average yield would be low enough to trigger a loss payment in a given year. Enterprise units are eligible for additional premium discounts. Enterprise units are an option under APH and CRC and are the only unit structure available under IIP.

Basic units may be divided into optional units when a crop is being grown under distinctly different production practices. For example, a grower with both irrigated and non-irrigated acres of the same crop may qualify for optional units. Other special farming types or practices may also qualify acres to be insured as separate units. Optional units may also be established by FSA farm serial number or by section (one square mile blocks containing 640 acres) in areas surveyed under the U.S. Rectangular Survey System. Pennsylvania is not surveyed into sections; however, optional units may be established in Pennsylvania on a section equivalent basis for annual

crops. Optional units based on section equivalents must be requested through a crop insurance agent, contain a block of land at least one mile square, and be clearly indicated on a map using identifiable boundaries. Separate APH records must be reported for each optional unit, and the grower would not receive the 10 percent premium discount allowed for basic units.

How crop insurance premiums are calculated. Crop insurance premiums depend on your actual production history (APH yield), the coverage level you select, the price election you select, and the premium rate for your county. Based on the level of coverage and the crop being insured, you pay between 33 and 62 percent of the calculated premium, with the federal and state government paying the balance. If you use basic units rather than optional units, you are eligible for the additional 10 percent discount.

You can select a coverage level of 50, 55, 60, 65, 70, or 75 percent of your APH yield (plus 80 and 85 percent for corn, soybeans, wheat, and barley). In a sense, this establishes your “deductible,” similar to the deductible on your automobile or homeowners insurance. For example, if a coverage level of 75 percent is selected, then you “self insure” for the first 25 percent of the loss. If the loss was more than 25 percent, crop insurance would cover the difference. The level of coverage also affects the amount of protection that is avail-

Table 2. Example of the cost of crop revenue coverage (CRC) insurance for corn grain and gross returns under various yields (Dauphin Co., 100 bu. APH yield, \$5.40 early Chicago Board of Trade price, \$5.75 local cash price).

	Level of crop insurance protection ¹								
	No Insurance	CRC	CRC	CRC	CRC	CRC	CRC	CRC	CRC
Coverage level:	0%	50%	55%	60%	65%	70%	75%	80%	85%
Producer premium ² :	n/a	\$8.50	\$11.04	\$13.17	\$17.90	\$22.59	\$31.16	\$45.00	\$66.66
Administrative fee:	n/a	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
Actual yield (bu/A)	Gross return minus insurance cost (\$/acre)								
0	\$0	\$262	\$286	\$311	\$333	\$355	\$374	\$387	\$392
10	\$58	\$265	\$289	\$314	\$337	\$359	\$377	\$391	\$396
20	\$115	\$269	\$293	\$318	\$340	\$362	\$381	\$394	\$399
30	\$173	\$272	\$296	\$321	\$344	\$366	\$384	\$398	\$403
40	\$230	\$276	\$300	\$325	\$347	\$369	\$388	\$401	\$406
50	\$288	\$279	\$303	\$328	\$351	\$373	\$391	\$405	\$410
60	\$345	\$337	\$334	\$332	\$354	\$376	\$395	\$408	\$413
70	\$403	\$394	\$391	\$389	\$385	\$380	\$398	\$412	\$417
80	\$460	\$452	\$449	\$447	\$442	\$437	\$429	\$415	\$420
90	\$518	\$509	\$506	\$504	\$500	\$495	\$486	\$473	\$451
100	\$575	\$567	\$564	\$562	\$557	\$552	\$544	\$530	\$508
110	\$633	\$624	\$621	\$619	\$615	\$610	\$601	\$588	\$566
120	\$690	\$682	\$679	\$677	\$672	\$667	\$659	\$645	\$623
130	\$748	\$739	\$736	\$734	\$730	\$725	\$716	\$703	\$681
140	\$805	\$797	\$794	\$792	\$787	\$782	\$774	\$760	\$738
150	\$863	\$854	\$851	\$849	\$845	\$840	\$831	\$818	\$796
Revenue guarantee:	\$0	\$270	\$297	\$324	\$351	\$378	\$405	\$432	\$459

1. CRC: crop revenue coverage (\$30/crop application fee).

2. Producer premium takes into account only federal premium subsidies. Additional state subsidies may be available.

able. Like other insurance, high levels of deductible have lower premiums, but also more risk. You also have some choice of the price election (percentage of the established crop price), depending on the yield guarantee selected. Selecting a lower level of price election lowers premiums slightly. In practice, however, most farmers select the 100 percent price election.

An important thing to remember about crop insurance premiums is that they are directly tied to the value of the crop they are insuring. If commodity prices increase, then crop insurance protection and premiums will also increase.

Some important crop insurance equations:

APH Plan yield guarantees and premiums:

Yield guarantee = APH yield
• coverage level

Total premium/acre = Yield guarantee
• price election • county premium rate

Subsidy amount = Total premium/acre
• subsidy factor

Producer premium/acre = Total premium/acre – subsidy amount

APH Plan Loss payments:

If actual yield is less than the yield guarantee:

Loss payment = (yield guarantee – actual production) • price election

If actual yield is equal to or greater than the yield guarantee:

Loss payment = 0

CRC Plan revenue guarantees and premiums:

Revenue guarantee = APH yield
• coverage level • early CBOT price

Total premium/acre = Revenue guarantee
• county premium rate

Subsidy amount = Total premium/acre
• subsidy factor

Producer premium/acre = Total premium/acre – subsidy amount

CRC Loss payments:

If the late CBOT price is greater than the early CBOT price, the revenue is recalculated (no additional premium):

Revenue guarantee = APH yield
• coverage level • late CBOT price

If actual yield is less than the yield guarantee:

Loss payment = Revenue guarantee – actual revenue

If actual revenue is equal to or greater than the revenue guarantee:

Loss payment = 0

Dollar plan amount of coverage and premiums:

Dollar guarantee = County maximum amount of coverage • coverage level

Total premium/acre = Dollar guarantee
• county premium rate

Subsidy amount = Total premium/acre
• subsidy factor

Producer premium/acre = Total premium/acre – subsidy amount

Dollar Plan Loss payments:

If the value of production to count is less than the Dollar guarantee:

Loss payment = Dollar guarantee – value of production to count

If the value of production to count is greater than or equal to the Dollar guarantee:

Loss payment = 0

Comparing crop insurance alternatives for field crops.

To demonstrate the different types of crop insurance coverage available to a field crop producer, a corn farmer with a 100-bushel APH yield in a medium-risk county will be used as an example. The farmer wants to compare gross returns for various levels of APH coverage (CAT and higher levels of protection) versus having no insurance (Table 1).

By comparing the various options you can see how farm cash flow is protected by using APH coverage. In this example, CAT would pay the farmer \$131/A for a total crop loss. Higher levels of coverage provide even more cash-flow protection for this farmer. A minimum cash flow of \$232 to \$365/A is guaranteed in exchange for a producer-paid premium of \$5.52 to \$38.35/A. As the level of crop insurance protection goes up, the grower is guaranteed a less-variable cash flow. The only advantage of having no crop insurance is saving the premium cost. Elimination of this cost would have a minor positive impact on cash flow during good years and a potentially disastrous impact on cash flow in a poor year.

The farmer also has the option of using a revenue-based insurance coverage like CRC or IIP. CRC and IIP are both products that use futures prices to set the value of the crop and pay for revenue losses (because of yield losses or price declines) rather than only yield losses as under APH. The farmer also wants to compare gross returns for various levels of CRC coverage versus having no insurance (Table 2). By comparing the various coverage options you can see how farm cash flow is protected even better by using CRC.

If the grower had a total crop loss, a minimum cash flow of \$262 to \$392/A is guaranteed in exchange for a producer-paid premium of \$8.50 to \$66.66/A. As the level of CRC protection goes up, the farmer is guaranteed a less-variable cash flow when compared to either having no insurance or

APH coverage. In years when the harvest time CRC price is less than the early price (set from futures prices in February), the effective loss payment trigger point will be higher than the selected level of coverage (example: early price \$5.40/\$5.00 harvest time price • 75 percent level = 81 percent loss trigger point (effective level of coverage)).

The only advantage of having no crop insurance is saving the premium cost. Elimination of this cost would have a minor positive impact on cash flow during good years and a potentially disastrous impact on cash flow in a poor year. Choosing a level of coverage is a personal business decision. Not everyone feels the same about production risk and everyone has different financial resources. One way to choose would be to determine how much cash-flow protection you need and pick a coverage level and price election combination that accomplishes your goal.

Crop insurance for livestock producers.

Crop insurance products have also been developed for farmers who produce forages for on-farm use. Policies are available for corn silage, forage production, and forage seeding. Coverage for corn silage and forage production (alfalfa and alfalfa mixtures) is available as APH insurance. Forage production (including pure grass hay stands) can also be insured under GRP and forage seedlings (containing at least 50 percent approved legumes) are insured under the Dollar plan.

Corn silage and forage producers who want APH coverage will need to develop an APH yield and keep accurate farm management records on total acres and production. Because of the numerous ways forages can be harvested and stored, and depending on when they are fed, field visits by a representative of your crop insurance company are often required to verify production. Field visits are required if production cannot be measured after harvest (i.e., storage of high-moisture corn or silage in airtight storage structures). Records that can help establish APH yields for forages include acreage data, field harvest records, livestock feeding records (including grazing data), silo measurements, inventory records, and sales receipts. If a crop loss occurs, the farmer must leave representative samples of the unharvested crop for inspection. This sample must be at least 10 feet wide and extend the entire length of each field in the insurance unit.

Corn silage crop insurance is available in all Pennsylvania counties. Because livestock producers usually harvest both silage and grain, there is some flexibility in the program to allow for changes in harvest method. On the acreage-reporting date you must indicate which acreage you choose to insure as silage and which acreage you choose to insure as grain. The insurance provider must be notified before you harvest any acreage in a manner other than as originally reported for

coverage (for example, it was reported as grain, but will be harvested for silage, or it was reported as silage, but will be harvested for grain). If there is a production loss, appraisals will be made according to how you reported the acreage for coverage (grain or silage). Although most counties have crop insurance for grain sorghum, only those hybrids planted for harvest as grain are covered. Dual-purpose varieties that can be harvested for either grain or silage are not insurable.

APH-based forage crop insurance policies are available in all 66 counties, but only for alfalfa and alfalfa mixtures. Premiums are based on the amount of alfalfa in the field. One set of rates applies to pure stands of alfalfa or a stand of alfalfa and grass in which 60 percent or more of ground cover is alfalfa, while the other applies to mixed stands of alfalfa and grass in which alfalfa makes up more than 25 percent but less than 60 percent of the ground cover. Stands with less than 25 percent alfalfa are not insurable. Forage production policies have a minimum requirement for an adequate stand based on the number of living plants per square foot after the year of establishment. For pure alfalfa stands an adequate stand is 9.0 alfalfa plants per square foot the first year; 6.0 plants the second year; and 4.5 plants the third and later years. For an alfalfa/grass mixture an adequate stand is defined as 6.0 alfalfa plants per square foot the first year; 4.0 plants the second year; and 3.0 the third and later years.

GRP forage production policies are available in 29 counties and are available to all farmers producing hay crops. GRP and GRIP corn policies are available in 47 counties. Group risk coverage is based on the average yield of the entire county rather than on your actual yields. Coverage at the CAT level or 70 to 90 percent of the expected county yield can be purchased for significantly less than APH insurance. GRP and GRIP coverage works best for those growers whose yields closely track county yields or those who do not wish to furnish their individual yield records.

If you live in either northeastern or southwestern Pennsylvania, the new pasture, rangeland, and forage (PRF) group-risk policies may be a good choice for insuring your hay crops and pastures. Advantages of these policies include flexibility of when to insure during the year and how much to insure (producers are not required to insure all their acreage). They also allow the farmer to adjust coverage to better match the value of the crop and the productive capacity of the land.

Forage seeding policies are available in all 66 counties and provide a dollar amount of insurance. Forage seeding policies are available for both fall-seeded and spring-seeded fields. To be insurable, at least 50 percent of the seed mixture use must be alfalfa, clover, Birdsfoot trefoil (or any locally recognized and approved legume species) by weight.

Table 3. Important deadlines for field crop insurance in Pennsylvania.

	Type of Insurance ¹	Sales Closing	Final Planting ²	Acreage Reporting	Billing Date ³
Barley (winter)	APH	9/30	10/10 or 10/20	11/15	7/1
Barley (spring)	APH	3/15	5/10	5/31	10/1
Corn	APH, CRC, IIP, GRP, GRIP	3/15	6/10	7/15	10/1
Forage seeding (fall)	Dollar	7/31	8/31	9/15	7/1
Forage seeding (spring)	Dollar	3/15	5/10	6/1	7/1
Forage production	GRP	11/30	–	5/15	7/1
Forage production	APH	9/30	–	11/15	7/1
Grain sorghum	APH, CRC	3/15	6/20	7/15	10/1
Oats (spring)	APH	3/15	5/10	5/31	10/1
Pasture, Rangeland, Forage (Rainfall or Vegetative Index)	GRP	11/30	–	–	7/1
Soybeans	APH, CRC	3/15	6/10 or 6/20	7/15	10/1
Tobacco (Maryland type and cigar filler)	APH	3/15	6/30	7/15	1/1
Wheat	APH, CRC	9/30	10/20 or 10/31	11/15	7/1

1. APH—actual production history insurance, with loss payment based on deviation from APH yield. Premiums vary with APH yield.

CRC—crop revenue coverage, loss payment based on lower than expected gross revenue.

IIP—indexed income protection, loss payment based on lower than expected gross revenue.

Dollar—dollar plan, loss payment based on value of the crop relative to the dollar amount of insurance.

GRP—group risk plan. For corn and forage production, loss payments are based on relative county yield level and grower selected yield trigger. For PRF index policies, loss payments are based on an index of either rainfall or vegetative greenness and a grower selected coverage level, productivity factor trigger, and choices of when insurance protection is in force.

2. Final planting date varies throughout the state. Final planting dates for northern counties will be around 7–10 days earlier. Some crops also have initial planting dates. This date indicates the earliest a crop may be planted and still remain eligible for replanting coverage, if such coverage is available for the crop.

3. Crop insurance is billed October 1 for spring-seeded crops and July 1 for fall-seeded crops. Whole farm revenue policies (AGR and AGR-Lite) are billed on December 1. Payment for any losses will be reduced by the amount of the crop insurance premium.

Another restriction is that acreage covered by a forage seeding policy can not be grazed during the insurance period.

There are also new products available to help dairy and lamb producers manage their market risk. The livestock gross margin (LGM) for dairy product is designed to protect producers from unexpected declines in the market value of their milk minus feed costs. It uses adjusted futures prices to determine the difference between expected gross margin and the actual gross margin. Producers can purchase LGM dairy insurance monthly and have the option to buy protection for from 1 to 11 months. The livestock risk protection (LRP) for lamb policy is designed to protect against unexpected declines in market prices. LRP-Lamb policy can be purchased weekly and the length of insurance can be set for 13, 26, or 39 weeks.

How Can I Find a Crop Insurance Agent?

- Ask your neighbors for their recommendations. Other farmers are one of the best sources of information on where to find a knowledgeable crop insurance agent.
- Check with the insurance agency where you purchase other types of insurance. Often you can obtain crop insurance through an agent you already use for your farm, automobile, liability, fire, health, or life insurance needs. Many insurance agencies have agents who specialize in crop insurance.
- Check with businesses or organizations you use for farm business management services. Your banker, cooperative, or a farm organization you belong to may be able to recommend insurance agencies who handle crop insurance.
- Use the USDA Risk Management Agency's Web site (www.rma.usda.gov) to locate an agent in your area. This can be done by clicking on the "Agent/Company Locator" under "Quick Links" on the RMA home page.

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Crop Insurance availability in Pennsylvania, by county.

County	AGR	AGR-Lite	apple	barley	bean (proc.)	cabbage	corn (APH, CRC, IIP)	corn (GRP, GRIP)	forage prod. (GRP)	forage prod. (APH)	forage seedling (DO)	grain sorghum (APH & CRC)	grape	green pea	nursery	oats	Pasture, rangeland & forage (rainfall index)	Pasture, rangeland & forage (vegetative index)	peach	Pear	potato	soybean (APH, CRC)	sweet corn (fresh)	sweet corn (processing)	tobacco	tomato (fresh)	tomato (processing)	wheat (aph, crc)	LGM Dairy	LRP Lamb		
Adams		X	X	X	X		X	X	X	X	X				X	X			X	X		X	X					X	X	X		
Allegheny		X	X	X			X		X	X	X				X	X	X						X	X					X	X	X	
Armstrong		X		X			X	X	X	X	X				X	X	X						X	X					X	X	X	
Beaver		X	X	X			X	X		X	X	X			X	X	X			X			X	X					X	X	X	
Bedford		X	X	X			X	X	X	X	X	X			X	X			X				X	X					X	X	X	
Berks	X	X	X	X			X	X	X	X	X	X		X	X	X			X				X	X					X	X	X	
Blair		X	X	X			X	X		X	X	X			X	X				X			X	X	X				X	X	X	
Bradford		X	X	X			X	X	X	X	X	X			X	X		X	X				X	X					X	X	X	
Bucks		X	X	X			X	X		X	X	X			X	X			X				X	X					X	X	X	
Butler		X	X	X			X	X	X	X	X	X			X	X	X						X	X					X	X	X	
Cambria		X	X	X			X	X		X	X	X			X	X	X					X	X	X					X	X	X	
Cameron		X					X			X	X				X	X							X	X					X	X	X	
Carbon	X	X	X	X			X			X	X	X			X	X			X				X	X					X	X	X	
Centre		X	X	X	X		X	X	X	X	X	X		X	X	X							X	X	X		X	X	X	X	X	
Chester		X	X	X			X	X	X	X	X				X	X				X			X	X		X			X	X	X	
Clarion		X	X	X			X	X	X	X	X	X			X	X	X					X	X	X					X	X	X	
Clearfield		X	X	X			X			X	X	X			X	X	X						X	X					X	X	X	
Clinton		X	X	X	X		X	X		X	X	X			X	X	X						X	X	X				X	X	X	
Columbia	X	X	X	X	X		X	X		X	X	X			X	X				X			X	X	X		X	X	X	X	X	
Crawford	X	X		X			X	X	X	X	X	X			X	X							X	X	X				X	X	X	
Cumberland		X	X	X			X	X	X	X	X	X			X	X				X			X	X					X	X	X	
Dauphin		X	X	X			X	X		X	X	X		X	X	X				X			X	X	X			X	X	X	X	
Delaware		X		X			X			X	X				X	X							X	X					X	X	X	
Elk		X		X			X			X	X				X	X							X	X					X	X	X	
Erie	X	X	X	X	X		X	X	X	X	X	X	X		X	X				X			X	X		X	X	X	X	X	X	
Fayette	X	X	X	X			X	X	X	X	X	X			X	X	X						X	X					X	X	X	
Forest		X					X			X	X				X	X							X	X					X	X	X	
Franklin		X	X	X			X	X	X	X	X	X			X	X				X			X	X			X	X	X	X	X	
Fulton		X		X			X	X		X	X	X			X	X							X	X					X	X	X	
Greene		X					X		X	X	X	X			X	X	X						X	X					X	X	X	
Huntingdon		X		X	X		X	X	X	X	X	X			X	X							X	X			X	X	X	X	X	
Indiana		X	X	X			X	X	X	X	X	X			X	X	X			X			X	X			X	X	X	X	X	
Jefferson		X		X			X	X	X	X	X				X	X	X						X	X					X	X	X	
Juniata		X	X	X			X	X		X	X	X			X	X				X			X	X					X	X	X	
Lackawanna	X	X					X			X	X	X			X	X		X					X	X		X	X	X	X	X	X	
Lancaster	X	X	X	X	X		X	X	X	X	X	X		X	X	X				X			X	X		X	X	X	X	X	X	
Lawrence		X	X	X			X	X		X	X	X			X	X	X			X			X	X					X	X	X	
Lebanon		X	X	X			X	X		X	X	X		X	X	X							X	X	X	X			X	X	X	
Lehigh	X	X	X	X			X	X		X	X	X			X	X				X			X	X			X	X	X	X	X	
Luzerne		X	X	X	X		X	X		X	X	X			X	X		X	X				X	X		X	X	X	X	X	X	
Lycoming		X	X	X	X		X	X	X	X	X	X			X	X				X			X	X	X		X	X	X	X	X	
McKean		X	X				X			X	X	X			X	X							X	X					X	X	X	
Mercer		X	X	X			X	X	X	X	X	X			X	X	X						X	X					X	X	X	
Mifflin		X	X	X			X	X		X	X	X			X	X				X			X	X					X	X	X	
Monroe	X	X	X				X			X	X	X			X	X				X			X	X					X	X	X	
Montgomery		X		X			X			X	X	X			X	X							X	X					X	X	X	
Montour		X	X	X	X		X	X		X	X	X		X	X	X				X			X	X	X				X	X	X	
Northampton	X	X	X	X			X	X		X	X	X			X	X				X			X	X					X	X	X	
Northumberland		X	X	X	X		X	X		X	X	X		X	X	X				X			X	X	X		X	X	X	X	X	
Perry		X		X			X	X	X	X	X				X	X							X	X					X	X	X	
Philadelphia															X															X	X	X
Pike		X					X			X	X				X	X		X					X	X					X	X	X	
Potter		X		X	X		X			X	X	X			X	X						X	X	X					X	X	X	
Schuylkill	X	X	X	X		X	X			X	X	X			X	X			X			X	X	X					X	X	X	
Snyder		X	X	X	X		X	X		X	X	X		X	X	X				X			X	X			X	X	X	X	X	
Somerset		X		X			X	X	X	X	X				X	X	X						X	X					X	X	X	
Sullivan		X					X			X	X	X			X	X			X				X	X					X	X	X	
Susquehanna		X					X		X	X	X				X	X			X				X	X					X	X	X	
Tioga		X	X	X			X	X	X	X	X	X			X	X	X			X			X	X					X	X	X	
Union		X	X	X	X		X	X		X	X	X		X	X	X							X	X			X	X	X	X	X	
Venango		X	X	X			X			X	X	X			X	X	X						X	X					X	X	X	
Warren		X					X			X	X	X			X	X							X	X					X	X	X	
Washington		X	X	X			X	X	X	X	X	X			X	X	X			X			X	X					X	X	X	
Wayne		X					X		X	X	X				X	X			X				X	X					X	X	X	
Westmoreland	X	X	X	X			X	X	X	X	X	X			X	X	X						X	X					X	X	X	
Wyoming		X	X				X	X		X	X	X			X	X			X				X	X			X	X	X	X	X	
York	X	X	X	X	X		X	X	X	X	X	X		X	X	X				X			X	X	X				X	X	X	
Total counties	14	66	45	54	15	1	66	47	29	66	66	57	1	10	67	66	17	9	30	1	13	51	66	12	3	4	16	57	67	67		

Important Crop Insurance Dates

Deadlines for sales closing, final planting date, acreage reporting, and billing for Pennsylvania field crops are listed in Table 3. As a crop insurance user you should be aware of several important dates for filing information and reporting losses:

Sales closing date—last day to apply for coverage or make changes to the policy; the sign up deadline.

Final planting date—last day to plant with full coverage. Late planting may be insurable at reduced coverage for some crops.

Acreage reporting date—last day to report the acreage planted. If not reported, insurance may not be in effect.

Date to file notice of crop damage—within 72 hours of initial discovery of damage (but not later than 15 days after the end of the insurance period). There may be additional requirements by crop. An adjuster must have the opportunity to inspect the crop before it is destroyed or put to another use.

End of insurance period—date when crop insurance coverage ceases for the crop year.

Payment due date—last day to pay the premium without being charged interest.

Cancellation date—last day to request cancellation of policy for the next year (same date as sales closing date).

Production reporting date—last day to report production for Actual Production History (APH).

Debt termination date—date insurance company will terminate policy for nonpayment.

Billing date—date crop insurance premiums are due. Crop insurance premiums not due until after the cropping season is over and any losses have been paid.

More information on crop insurance and agricultural risk management can be found on the Internet:

United States Department of Agriculture, Risk Management Agency
www.rma.usda.gov

Penn State Crop Insurance Education Web Site
cropins.aers.psu.edu

Pennsylvania Department of Agriculture Web Site
www.pda.state.pa.us

National Ag Risk Education Library
www.agrisk.umn.edu

Northeast Center for Risk Management Education
www.necrme.org

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