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Seed Certification in Michigan
Extension specialist of Crops and Soil Sciences
Michigan State University
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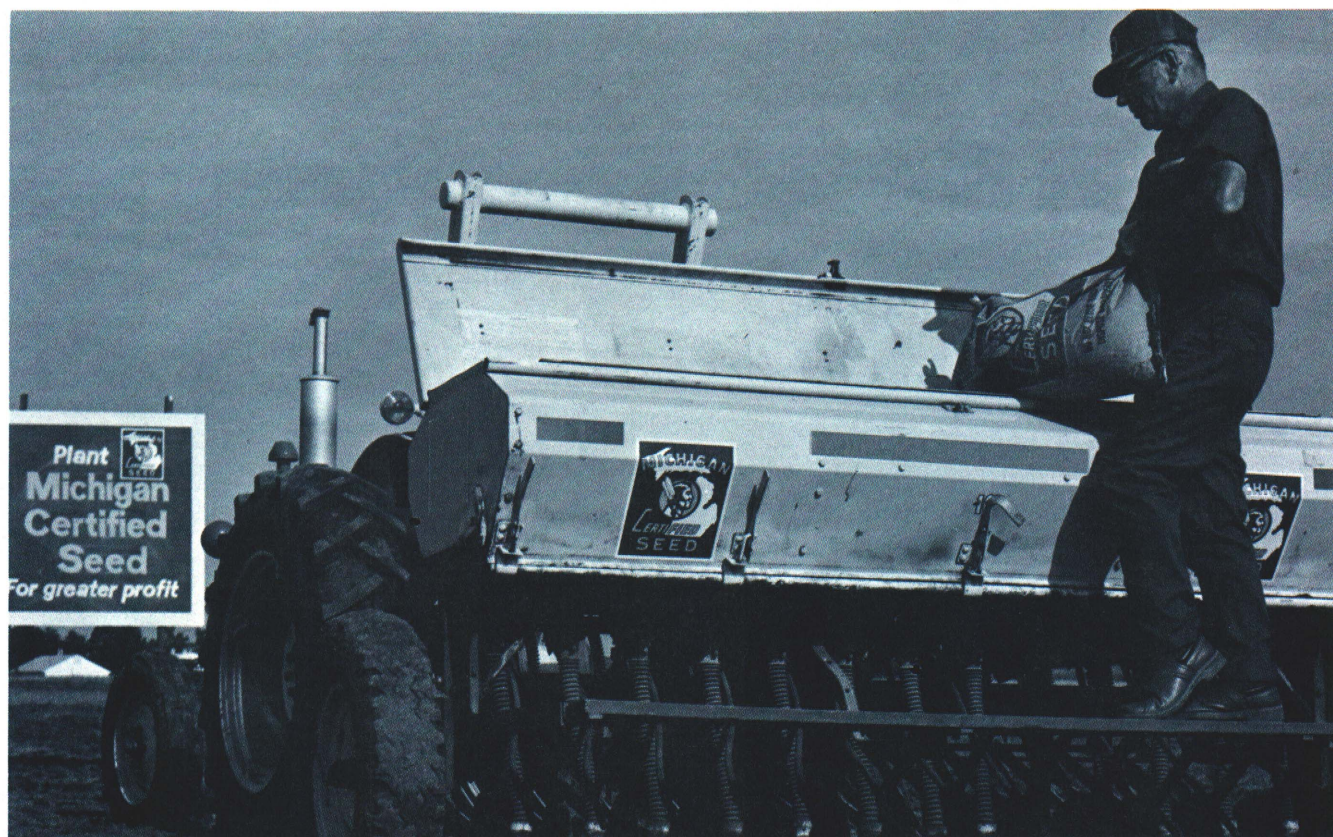


Seed Certification In Michigan

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The Certification Concept

The Michigan seed certification program provides a system for bringing high quality seed of outstanding field crop varieties to farmers and seedsmen. The central concept on which certification is based is *varietal purity*, which is comparable to a pedigree in animals. It represents seed with the genetic potential and varietal purity to produce high crop yields.

The Seed Certifying Agency and the MDA

Certification is administered by the Michigan Crop Improvement Association (MCIA) under authority delegated to it by the Michigan Department of Agriculture, the legally responsible regulatory agency under Michigan law.

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²P. O. Box 1612, East Lansing, Michigan 48823.

The MCIA, with headquarters in East Lansing, is a nonprofit corporation of Michigan farmers and others mutually interested in the production and distribution of certified seed. It is controlled by a board of directors who employ a manager to administer the program. The standards for certified field seed are printed in the Michigan Department of Agriculture Regulation 623 and for seed potatoes in Regulation 628.

Role of MSU (Varietal Eligibility)

Eligibility of crop varieties for certification is determined from over-state performance trials conducted by MSU plant scientists. This testing program includes varieties developed at MSU, other experiment stations and private seed companies. Varieties which perform significantly better than standard varieties are *recommended* to Michigan farmers and become eligible for certification. Varieties failing to exhibit

superior performance, but which perform equal to existing varieties, may be designated as *acceptable* and may be produced and sold as certified seed.

Role of the MFSA

The Michigan Foundation Seed Association² is a separate organization of Foundation seed growers which produces the planting stock (Foundation seed) from which Certified seed is produced in Michigan.

Certified Seed Producers

Certified seed producers are farmers who earn part or all of their income by producing, processing and selling Certified seed. Otherwise their operations are no different from those of neighboring farms. A small proportion of Certified growers also produce Foundation seed; however, such production is only through agreement or contract with the Michigan Foundation Seed Association.

CERTIFICATION PROCEDURE

Eligible seedstocks

The first step to produce Certified seed is to purchase and plant Foundation seed from the Michigan Foundation Seed Association. To produce Foundation seed requires planting Breeder seed which is also supplied by the MFSA in cooperation with Michigan State University.

Certification Application

Application for membership and certification is made to the Michigan Crop Improvement Association and should be accompanied by a Foundation seed tag from the seed planted as verification of eligibility. The necessary forms and application procedure are obtained from the MCIA office.

Field Inspection

All fields to be certified are inspected by MCIA inspectors at a time when varietal purity and freedom from diseases is best verified. This may be prior to plant maturity, as in oats, or after the heads have matured and begin to turn, as in wheat. In crops such as field beans, where freedom from diseases is a crucial factor, the inspection is timed to provide optimal time for noting presence of disease.

In addition to varietal purity and freedom from diseases, the fields are also inspected for freedom from mixtures with other crops and weeds. Fields which meet certification requirements in all respects are accepted, and the grower is notified.

Harvesting

Certified seed is harvested similar to uncertified seed or commercial grain, except that more care and attention are given to preserving seed purity, quality and performance. To preserve quality requires careful attention to moisture

content. If seed moisture is too high at harvest, storability will be a problem. Low moisture may cause mechanical injury, especially in fragile seed crops such as dry edible beans and soybeans. Combines used to thresh Certified seed must be thoroughly cleaned to prevent contamination. Harvesting one round into the seed field and diverting it into nonseed channels is recommended to reduce the risk of contamination.

Cleaning

Certified seed must be cleaned of foreign material, weed seed and other crop seed. Broken and damaged crop seed may also be removed if they differ enough in size and shape to permit their separation. Following cleaning, the seed may be treated, bagged and tagged (with the official blue Certification tag) for marketing.

The basic seed-cleaning machine is the fanning mill, or air-screen separator, which removes foreign material and small or very large contaminating seed types by air movement and removable screens. For most seed lots of small grains, soybeans and many dry bean lots, no further cleaning is necessary. A gravity mill, which removes deteriorated, low quality seed by differences in their specific gravity, is helpful for cleaning seed lots of field beans and soybean seed. Other specialized equipment is available but is not needed for most situations.

Treating

Chemical treatment is a standard recommended practice for seed of most crops; however, *it is not a requirement for Certified seed*. Most Certified seed growers are equipped for chemical seed treatment, and their customers prefer seed to be treated by the seedsman rather than treating it themselves. The practice of seed treatment in the last 20

years has led most customers of Certified seed to expect it to be treated by the Certified seed grower or seedsman.

Sampling and Testing

After the seed has been processed, a representative sample is taken and submitted to the certifying agency (Michigan Crop Improvement Association) for quality analysis. Those lots which meet minimum standards of germination, purity and freedom from seedborne diseases are eligible for certification, and the blue Certified seed tags may be issued.

Preparation for Marketing

Since Certified seed is sold in bags, it is usually bagged, tagged with appropriate labeling information and prepared for market by the seed grower. If processing facilities are not available, it may be processed by a second party if a "bulk transfer certificate" is signed. Seed may be put in plain bags or bags containing promotional information. Certified seed tags containing seed quality information are attached by sewing into the seam while closing the bag or by affixing a seal to the bag after closure. *Each bag must be sealed and tagged before the seed inside is considered as Certified*. Whether the tag is sewn in while closing the bag or affixed to it by a seal, it must be done in a way that will show if the bag has been opened or disturbed.

Marketing

The marketing of Certified seed is the responsibility of the individual grower. Growers who have produced Certified seed for many years have their marketing channels well established through local elevators, jobbers, or directly to farmer customers. Marketing difficulties may present a formidable barrier to new growers or those contemplating Certified seed production.

Questions and Answers

About Certified Seed Use and Production

USE OF CERTIFIED SEED

1. If I buy Certified seed this year, how many generations can I save my own seed before the vigor and productivity will "run out?"

The theory that the productivity and crop vigor of self-pollinated, nonhybrid crops will "run out" is largely a myth, though a fortunate one for Certified seed producers. Actually, loss of crop quality and productivity may occur due to contamination by weeds, other crops and other varieties or by a disease build-up leading to the need to renew the seed source. Many growers make a practice of returning to Certified seed every 2 or 3 years in order to renew their seed source.

2. I have an opportunity to buy year-from-Certified seed from my local elevator. Isn't this about as good as Certified seed? What standards are required of this class of seed?

Year-from-Certified seed may represent high quality seed, but there is no assurance of its varietal purity. In fact, we have seen seed sold as year-from-Certified, or "from Certified," that was of questionable origin. If you buy year-from-Certified seed, make sure it is from a reputable source and has been tested and labeled for quality. Also ask for assurance that it was grown from Certified seed by seeing the blue certification tag. There are no standards required for year-from-Certified seed beyond the minimum requirements for any seed under the Michigan seed law.

3. My neighbor, who is a Certified seed grower, offered me year-from-Certified seed at a bargain price, saying it was grown from Foundation seed. Isn't this misrepresentation of seed?

Yes, and it brings up additional questions. If it was grown from Foundation seed, why wasn't it certified? You should assume that it didn't meet certification requirements and is of questionable quality. The fact that it was grown from Foundation seed doesn't guarantee its varietal purity or its high seed quality since many things could have happened to lower its quality.

4. Isn't the purchaser of Foundation seed obligated to follow through with certification on his seed, assuming that it meets both field and seed standards?

Yes. He accepts this responsibility when purchasing Foundation seed. Closely related to this responsibility is his obligation to sell his seed crop only as Certified seed. Selling it as "grown-from-Foundation" or "year-from-Certified" is a misrepresentation of seed.

5. All promotion aside, why should I buy Certified seed when I can go to my own bin and use cheaper seed?

If you make a practice of dipping into your own bin for seed, it will probably become obvious to you and your neighbors after a few years since field contamination and crop mixtures will almost certainly result. This might be avoided by having your seed custom-cleaned by an elevator or seed producer. However, with the expense involved, you would be better off buying Certified seed in the first place.

6. Isn't Michigan Certified seed the same as Registered seed in surrounding states?

This frequently asked question refers to the fact that Michigan does not have a Registered class of seed and that all Certified seed is produced from Foundation seed and represents productive, adapted varieties. In neighboring states (except Wisconsin) Certified seed is two generations away from Foundation, whereas in Michigan it is only one generation away.

7. But what about purity and germination? Aren't Michigan's Certified seed standards equal to the Registered seed standards in many states?

Yes, and in some cases even higher.

8. Occasionally, wet weather and disease infestation will cause problems in meeting germination standards for certification—especially in soybeans. When this happens, why not lower the standards for one year in order to have more certified seed available?

Although this is a common practice in neighboring states, we do not have this option in Michigan. Our certification standards are part of the official regula-

tions of the Michigan Department of Agriculture and cannot be changed except through due processes of public hearings and input of all interested parties and individuals. Furthermore, the Michigan philosophy is that standards which could be so easily waived would not promote confidence in Certified seed.

9. What is the meaning of "bin-run certification"?

This is not an official term but is probably used to indicate unprocessed seed which has passed field inspection and is eligible for further completion of the certification process.

10. I purchased some Certified wheat seed and, after planting it, found out that some of the same lot had been put under stop-sale by the state because of poor germination. Although I purchased it through my local elevator, the name on the seed tag is that of a Certified seed grower in the next county. Who is responsible for my losses from planting this seed which I bought in good faith?

Legally, the vendor, or the person whose name is on the tag is responsible.

11. In view of the proven violation of labeling laws, how can I collect damages for the losses I incurred?

Losses can be collected only through separate legal action in a civil court. Although a penalty may be imposed under seed control regulations, the seed control agency cannot be used to recoup financial loss from buying and planting the seed in question.

12. Since this seed was Certified by the Michigan Crop Improvement Association, which tested the seed and printed the certification tags, don't they bear part of the responsibility?

So far as can be determined, no certification agency has ever been held financially liable in a court of law.

13. What precautions are taken to supervise the testing and labeling of Certified seed to prevent mislabeling of Certified seed? In other words, who checks the findings of the Michigan Crop Improvement Association?

All seed on the open market, including Certified seed, is monitored by the Michigan Department of Agriculture. This is accomplished by systematic sampling and quality testing of seed on the open market to check compliance with seed labeling laws.

14. This year I bought Certified oat seed from my local elevator as usual, but for the first time, it wasn't treated. I thought all Certified seed was required to be treated.

Though seed treatment is a sound agronomic practice, it has never been a requirement for certification. There are several reasons why some Certified seed growers prefer not to treat seed during processing: (a) personal health hazards from seed treatment, (b) fear of contaminating grain for human or animal consumption, (c) questions of disposition of treated seed which is not planted, and (d) to encourage more drill-box treatment of the seed. In spite of these, concerns, there are indications that the trend is once again back toward seed treatment as a part of the processing operation. This is primarily due to customer objections to drill-box treatment and to the growing awareness of the greater effectiveness of pretreated seed.

15. I have a chance to buy Certified seed in bulk from my neighbor, but I am concerned because Certified seed usually comes in sealed bags. Do I have a reason to be concerned?

Yes. In the first place, regardless of how the seed is advertised, the seed is not Certified unless it is in an enclosed container and sealed with a blue certification tag. Presently, all Certified seed comes in paper or burlap bags.

16. What about bulk certification? Isn't this possible?

There is presently some interest in developing procedures for bulk certification in Michigan. This means that Certified seed would be available in very large containers holding enough seed for planting several acres or an entire farm. But even such containers would be required to be sealed or be handled in such a way as to assure maintenance of Certified seed quality.

17. As a Certified seed producer, if my seed fails to meet certification standards, can I merely keep having samples drawn and tested in hopes that one of the samples will meet the certification standards?

Such a procedure would be a severe infraction of certification procedures. If the sample fails to qualify for certification, the entire seed lot is required to be reprocessed before another sample is drawn for testing.

18. Are Certified seed processors checked by the certifying agency?

Not at the present time except on request by the grower or processor or under special spot-check circumstances. Such checks are frequently performed at custom processing plants, especially when changing from one variety to another. This is done to prevent varietal contamination.

19. I understand some states have a system of approved processors. Does Michigan?

Not at the present time, although there is interest in such a system for the future. Seed processors would be approved to process Certified seed on the basis of suitable facilities and after receiving some training in requirements for processing Certified seed.

20. Do all states have crop improvement associations as seed certifying agencies?

No. In many states seed is certified by the State Department of Agriculture. In others, certification is performed by the Cooperative Extension Service.

21. What determines the certifying agency in a given state?

The authority for seed certification in a given state is derived from the state seed law which is enacted by the state legislature.

22. Approximately what percentage of the Michigan crop acreage is planted with Certified seed?

This varies among different crops. Navy beans represent the largest percent, with about 40-45%, followed by soybeans at about 30% and wheat and oats at 20-25%.

23. I bought some Michigan Certified soybeans with a label on the bags stating that (a) it represented a protected variety and (b) was a violation of the Federal Seed Act to propagate and sell it by variety name. What is the meaning of such a restriction?

Authority for this restriction comes from the Plant Variety Production Act of 1970 which gives the holder of a Variety Protection Certificate the right

to stipulate that his variety be eligible for sale, by variety name, only as a class of certified seed.

24. May I keep my own seed of such a variety for replanting?

Yes. The terms of protection apply only to its sale in commerce.

25. If I violate the terms of this protection, what consequences might I incur?

You could be fined as a consequence of violating the Federal Seed Act. The owner of the Variety Protection Certificate could also bring civil suit against you for violating his ownership rights.

26. Are any of the varieties released by Michigan State University or other public experiment stations covered by variety protection certificates?

Presently one MSU-released variety, *Wheeler* rye, is protected in this way. It represents a special case, and protection of all MSU-released varieties is not contemplated. However, universities in several neighboring states are protecting many of their new varieties in this way.

27. With all these different policies, how is the purchaser of Certified seed to know which varieties are protected in this way? Isn't it possible for the protection to be violated unknowingly?

Many people have already violated the protection of many varieties unknowingly. It is suggested that seed buyers read all labeled information on the bag and make sure about the status of the seed. Holders of protection certificates are also responsible for providing this information and, of course, are responsible for defending their own rights in cases of violation.

28. So far, the restrictions involved in protected varieties sound like a one-way street against farmers. Why was such a law passed in the first place?

The law was not passed to restrict farmers. It was passed to protect the owners or developers (inventors) of a new variety against propagation and sale of their variety without permission. It creates the opportunity for the holder of a protection certificate to ask for and receive a royalty in exchange for such permission to propagate and sell his variety. Such protection has been available to developers of new varieties of vegetatively propagated plants (roses, fruit trees, etc.) for many years.

CERTIFIED SEED PRODUCTION

1. I am interested in becoming a Certified seed grower. How do I get started?

The procedure is simple: purchase and plant Foundation seed; make application to the MCIA and submit the necessary fees. The necessary forms, instructions and schedule of fees are obtained from the MCIA, the certifying agency.

2. Are there special land requirements for producing Certified seed?

Certified seed cannot be grown in a field on which another variety of the same crop was grown the previous year. This helps avoid admixtures from volunteer plants.

3. Are there any restrictions concerning dangers from cross-pollination with crops from neighboring farms?

Most Certified crops other than corn are self-pollinated and require only a few feet separation from other varieties. More stringent isolation is required for producing seed of cross-pollinated crops.

4. What special equipment and facilities are required to produce Certified seed?

There are no special equipment and facilities required by the certifying agency. The seed crop must be harvested and processed to insure minimum quality standards.

5. May I grow Certified seed if I do not have storage and processing facilities?

Yes. You may have cleaning and processing performed on a custom basis by a local elevator or another Certified seed grower. However, you are still responsible for the quality of your seed, so you should make sure that the processor does a good job.

6. Where can I sell my Certified seed?

Most Certified seed is sold through an elevator or commercial company. This utilizes the recognized marketing chan-

nels and promotes goodwill and cooperation with the seed trade.

7. Who determines the price of Certified seed?

The price of Certified seed is a private matter between the producer and his customer. The Michigan Crop Improvement Association does not set prices.

8. As a prospective Certified seed grower, what can I do to assure myself of a reasonable market for my seed?

Many growers begin by producing Certified seed under contract with established Certified growers, local elevators or large commercial companies. This is an excellent way for a person without processing equipment or marketing experience to begin growing Certified seed. He merely contracts to produce and harvest certifiable seed to be delivered "in the rough" to the contractor who assumes the responsibility for processing and marketing. Anyone interested in contract-growing seed should contact prospective contractors as early as possible.

9. How is the price for contracted seed established?

Again, this is a private matter between the contracting company and the grower. The price will probably be more or less determined by the prevailing prices of commercial grain, beans, etc. It will also be determined by which party pays for Foundation seed, MCIA membership and certification acreage fees. Many different arrangements are possible.

10. I have some Certified seed but do not have cleaning and processing facilities. Can I sell it to an elevator or another seed producer so he can take care of this aspect?

In the first place, no seed should be called Certified until it is bagged and sealed with the blue Certified seed tag. Yes, you may sell your seed which is eligible for certification, assuming it has

passed field inspection, to another grower or an elevator for completion of the certification process.

11. Are there any special procedures required for such a transfer?

Yes. You must complete a "bulk transfer certificate" from MCIA which recognizes the seedlot's eligibility for certification and transfers further responsibility for processing, sampling, bagging and tagging to the purchaser. This is a very common practice, especially for growers without cleaning and processing facilities.

12. Why is a field inspection necessary as long as the harvested and processed seed will be tested before Certified seed tags will be issued anyway?

The field inspection is very important to enable the MCIA to check for the presence of varietal purity factors that cannot be detected by examining the harvested seed. For example, off-types in soybean seed may appear identical, but if they are observed while in the field, their plant type may easily be distinguished. Also, if seed does not meet quality standards in the field, it may be diverted into nonseed uses.

13. Are there any restrictions concerning how I can use seed from a field that does not pass the certification inspection?

No, except it cannot be sold as Certified seed. Such seed is normally sold as commercial grain and should be diverted from use as seed.

14. What is the difference in inspections performed on Certified seed fields and those performed on Foundation and Breeder seed fields?

The types of inspections are the same. Only the standards for varietal purity, freedom from diseases and freedom from contamination by other crops and weeds differ. Breeder and Foundation seed fields are often hand-rogued of off-types in order to assure continued genetic purity of Certified crop varieties.


VARIETAL DEVELOPMENT

(Plant breeding programs of public and private agencies)

Comments

1. Available only in small quantities
2. Under control of the plant breeder
3. Labeled with a white tag
4. Planted to produce foundation seed


BREEDER SEED

	CROP AND VARIETY	Ionia White Wheat
	GROWER OR VENDOR	Mich. Foundation Seed
	ADDRESS	East Lansing, Mich. 48823
	LOT NO.	B71 115 1097 LOT N1 MSF
PURITY	99.70 %	NET WT. 60 LBS.
INERT	0.28 %	DATE TESTED 8-71
WEED SEEDS	0.01 %	GERMINATION 90 %
OTHER CROP	0.01 %	

MEMBER OF ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

1. Available in limited quantities
2. Under control of foundation seed stocks organization (public or private)
3. Labeled with a white tag
4. Planted to produce certified seed


FOUNDATION SEED

	CROP AND VARIETY	Ionia White Wheat
	GROWER OR VENDOR	Mich. Foundation Seed
	ADDRESS	East Lansing, Mich. 48823
	LOT NO.	F71 115 1097 LOT N1 MSF
PURITY	99.70 %	NET WT. 60 LBS.
INERT	0.28 %	DATE TESTED 8-71
WEEDS	0.01 %	GERMINATION 90 %
OTHER CROP	0.01 %	

MEMBER OF ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

1. Available in large quantities
2. Under control of certified seed producer
3. Labeled with a blue tag (often called "blue tag" seed)
4. Sold to commercial farmers for general crop production

CERTIFIED SEED

	CROP AND VARIETY	SANILAC NAVY BEANS
	GROWER OR VENDOR	GREENIA BROS.
	ADDRESS	RICHMOND, MICH.
	LOT NO.	C71 79 2324 LOT # 14
PURITY	99.70 %	NET WT. 60 LBS.
INERT	0.30 %	DATE TESTED 12-71
WEEDS	0.00 %	GERMINATION 90 %
OTHER CROP	0.00 %	MBCF-Pd

MEMBER OF ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

Diagrammatic scheme of the Michigan Improved Program from the development of a new variety to the availability of certified seed to commercial farmers.