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## MICHIGAN STATE COLLEGE

## EXTENSION DIVISION

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## PROFITABLE OAT PRODUCTION IN THE UPPER PENINSULA OF MICHIGAN

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The climate of the Upper Peninsula of Michigan is extremely favorable for the production of oats. An abundant rain fall is well distributed over the growing season. This, combined with the absence of the hot, droughty periods which prevail in regions farther south, provides an excellent environment for oat culture.

Good yields of oats are obtained on all the types of soils, which range from the heavy clays of the Chippewa and Ontonagon regions to the loams and sandy loams that prevail over the western end of the Peninsula.



A field of Wolverine Oats in Alger County. This variety is extremely hardy and matures before serious attacks of rust strike.

Oats are by far the leading small grain crop of the Upper Peninsula and form the basis of the grain ration for its live stock industry. The yield of 3,315,830 bushels in 1925 was valued at \$1,382,000. The average yield per acre for the past ten years is 33.2 bushels. It is very apparent that the profits from this crop could be greatly increased by

the use of adapted seed and improved cultural methods, such as the best oat growers of the Upper Peninsula are now using.

### Soils For Oats

Oats, when properly handled, thrive on all soils of the Upper Peninsula. The heavy clays of the Chippewa and Ontonagon regions produce abundant oat crops in seasons of normal rain fall, but drainage is essential to profitable oat production in many of the fields of these regions.

Federal census figures show the clay loam regions to be the most consistent producers; however, record oat yields have been obtained on sandy loams that are high in humus and fertility.

### Preparation of Seed Bed

Oats thrive best on a soil that has been cultivated the previous year. They are not as likely to lodge as when planted on a sod break. However, in some sections, few cultivated crops are grown and a sod must be used. In this case, early fall plowing is highly beneficial, as it gives the humus a chance to decompose. The decayed humus adds to the water-holding capacity of the soil.

On fields that are weedy, it is best to grow a cultivated crop or to summer fallow the previous year. This will kill many of the weeds. Oats grow best on a firm, well settled seed bed, with the surface worked to a good tilth. After discing and harrowing, the roller or cultipac works to advantage in breaking the lumps and firming the surface.

### Fertilization

A good clover or alfalfa sod used in a rotation furnishes the cheapest possible source of nitrogen. Applying six to eight tons of barnyard manure applied on the meadows or on the cultivated crop in the rotation adds materially to the humus content of the soil and furnishes a supply of fertilizing elements. From 200 to 300 pounds of commercial fertilizer, preferably acid phosphate, broadcast at time of planting, hastens maturity and aids in kernel development.

### Plant Early

Oats should be planted as soon as the ground warms up in the spring, which is usually early in May. Their vigor and ability to stool out is established early in the season, and they should have the full advantage of this period. Weather conditions are often favorable to serious attacks of rust during the latter part of the growing season. Plantings that mature early escape the ravages of this disease and produce far better yields than later plantings.

When seeding early and on well prepared seed beds, 10 to 12 pecks of good seed will be sufficient. Too much seed makes small, chaffy kernels of low feed value. Late plantings should be made at the rate of 12 to 13 pecks per acre, because the plants do not stool out as readily as those planted early. The grain drill gives a more uniform distribution of seed over the field than the old broadcast method of sowing. It also insures a better covering.

### Plant Adapted Varieties

Tree or open panicle oats have proved to be higher yielders than the old side or horse mane types. Medium maturing varieties have proved to be better yielders than the extremely late oats, as they utilize the best part of the growing season and mature before serious infestations of rust occur.

The results of variety testing over all sections of the Peninsula for the past five years show Wolverine to be the highest yielding variety. It was originated by plant breeders of the Michigan State College and has met with exceptional favor in the north where hardy seed is required. Swedish Select and Silver Mine are also grown to some extent and are second only to Wolverine. Iowar often called Kherson, is an exceptional early oat, while College Success, Mammoth Cluster, and Giant Swedish are extremely late maturing varieties.



The farm type fanning mill pays for itself in one or two seasons by increased yields, due to good seed.

### Clean Seed Well

A good farm type fanning mill cleans out the pin oats, chaff, weed seeds, and dirt. It adds enough bushels to the acre yield to pay its cost in a short time. Weeds in the field take the plant food which the crop should have and greatly reduce yields. Small pin oats grow weak spindling stalks that seldom head out, thus robbing the crop of food. Foreign materials often clog the drill, causing missing rows in the field. When operating the mill, see that it is properly adjusted, give it sufficient blast to remove the light oats, and see that the proper sized screens are in place. Screens with elongated perforations are always best, as a closer separation can be obtained.

### **Treat Seed to Prevent Smut**

Bunt or stinking smut often destroys from 10 to 15 per cent of the Upper Peninsula's oat crop. This loss is easily and effectively eliminated by the simple formaldehyde treatment. The dry method, which is usually used, consists of spraying the chemical on at the rate of one pint to 50 bushels of seed. Sweep off a place on the barn floor and spray the formaldehyde on the oats as they are shoveled over. Cover them with a canvas for four hours and then plant or spread the oats out very thin, as the formaldehyde gas may injure germination.

### **PROFITABLE OAT HINTS**

1. **Plow early and have seed bed well worked.**
2. **Plant early two and one-half to three bushels per acre.**
3. **Use Medium maturing adapted varieties, such as Wolverine.**
4. **Clean seed with a good fanning mill.**
5. **Treat seed with formaldehyde to prevent smut.**