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Carol Lewis

Fairbanks, Alaska

Steve Lay, interviewer

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Carol Lewis talked about soil conservation and the work that the experimental station is doing on minimum tillage. She explained that Alaska soils are very erodible. They must protect against soil loss. Several methods in the lower 48 have been used to protect the soil but they don't deal with the soil resource. Their method of attack is conservation tillage. It is a method of disturbing the soil in the least possible manner while maintaining a reasonable high crop yield. She talked about past methods of tillage which left the soil vulnerable to winds. Minimun tillage uses a disk just once in the fall or the spring. A chisel goes deeper and is harrowed over that. Substantial residue is left. Extreme tillage is no till and the drill goes directly into the soil. The soil is least vulnerable and it is a more time saving operation.

Carol said they have used all types of tillage for study. They have found that minimum tillage results in the highest yields. They have run tillage research for three years. The no tillage in all years came out with lower yields. Northern soils are cool and not taking residue off delays germination. No tillage is also a disease carrier perhaps because of residue. Weeds are also a problem. You have to use herbicides to control weeds and costs are a factor. Perennial grasses require more herbicides. Because of this the no till method is the most expensive. The minimum till is the least expensive. It might mean a difference of two or three dollars an acre.

Carol said they established a new study in 1983. It is continuous barley instead of a fallow and considers four methods of tillage: no till, maximum till and two methods of minimum till one of which is a fall tillage operation. They were operating on new ground. Fall tillage gives a rough seedbed but it may change with more use. They use both a disk and a chisel. They are also considering stubble management. In the Interior there are two winds that are erosive. If there is a stubble cover covered by snow it protects against winter winds. She explained the different stubble studies. Stubble with residue removed is showing to be the most affective. They are considering putting in a demonstration straw burner grain dryer system. Our grains are high moisture. We have a fairly moist fall. This makes a high moisture barley.

Carol said the funding for their study is a five year grant. They hope to continue it on after that. She recommends disking in the fall and direct seed in the spring. If disking can't be done in the fall she said it can be done in the spring. If farming is done on old lands then she would use a chisel with sweeps and disturb the soil as little as possible.

Carol said it is difficult to measure wind erosion. They can use a wind erosion equation and predict the loss. She said they think they have lost three or four inches over seven years. Soil is a non-renewable resource. The process is extremely long. She talked about a hay field that hadn't been tilled in eight years and they could still see hay residue. She added that Alaska could be an important leader in soil conservation. She talked about conservation practices. They don't have to correct they can prevent. She said stubble can be good for wildlife. It is true in almost all agricultural areas.