

MODERN FARMER

Seed Cleaning Needs Care

Seed cleaning, an important part of seed control, is not solely for the eradication of weed seeds, the separation of weed seeds, is important too. Thorough grading assures that only the best seeds will be sown.

The job of efficient seed cleaning rests with the operator, and often efficiency of a plant is three quarters operator and one-quarter machine. This is because of the judgment required by the operator in selecting the machines and equipment, and in their proper operation. This judgment is acquired through experience and by a knowledge of the seed characteristics. Due to difference in seed sizes, and weed seed content, in particular samples, a specific procedure cannot be laid down but a general recommendation can be made.

J. W. White, Field Husbandry Division, Central Experimental Farm, Ottawa.

The most common machine used in seed cleaning is the sieve and air blast type. There is a wide range of this type, from the familiar fanning mill to large capacity machines with such important features as variable air control of both suction and blast force feed hopper, and variable pitch control of the screens. Efficient separation with this basic machine depends upon the proper selection of the sieves or screens. Poor or mediocre results can generally be attributed to improper selection of screens. In two-screen machine the purpose of the top sieve is to scalp off everything larger than the seed required and allow the desired seed and smaller particles to drop through. The lower screen removes the smaller seeds and broken or shrivelled kernels.

The trial method of choosing the screens is an excellent one of determining sieve sizes. Place a sample of the seed to be cleaned on the selected screen, then gently shake or tap it until the small seed have been separated from the large ones. From the percentage of seeds above and below the screen the operator will know if he has the correct size or type of perforation. Three or four trials may be necessary to determine the correct screens. The final proof is in the machine operation.

Auxiliary machines are required for specific separations and grading problems. Various principles such as seed coat characteristics, specific gravity, seed weight and shape, colour, are used to effect more difficult separations. These auxiliary machines are found in custom and cleaning plants, but good work can be accomplished by the judicious use of a sieve and air blast machine if a wide range of screens is available.

Appetizing New Fruit Products

Research leads to the development of appetizing new fruit products which are rich in flavor and of high nutritive value. More of that elusive fresh flavour, that so frequently was lost during processing is now being successfully retained in these products.

An excellent example is the new type of opalescent vitamin C fortified apple juice now available to the public. This attractive, tasty and highly nutritive canned apple juice is the result of co-operative research and development between the Fruit and Vegetable Products Laboratory, Dominion Experimental Station, Summerland, B. C., and B. C. Fruit Processors Limited. The natural fresh flavour of the apple is captured through using special processes such as milling with vitamin C and de-aeration to prevent oxidation during the preparation of the juice. The juice is promptly "flash" pasteurized into the can to preserve it, and then quickly cooled, as this greatly assists in keeping the full flavour. The product is opalescent in appearance due to the presence of very minute or colloidal particles of fruit tissue, which add to the quality of the juice.

Clarified apple juice is being blended with a small amount of grapefruit juice to make a very refreshing canned apple-grapefruit drink. Riper, sweeter and less acid types of apples are used to make this product. Research at the Summerland Laboratory and elsewhere, says C. C. Strachan, shows that attractive apple juice blends may be made with grapefruit, black currant and raspberry. The future may see the development of rich flavoured frozen concentrated apple and grape juices for beverage purposes, similar to the frozen concentrated orange juice which has recently become so popular in the United States.

Greatly improved fruit purées have been developed which may be used not only as baby foods, but as bases for nectars, ice cream, flavoured and frozen desserts. Novel fruit spreads, in which the full flavour of the fresh fruit is retained, are reported by U. S. laboratories to have been made from berries and various tart fruits. These spreads are prepared cold and preserved by freezing, with pectin being used to produce jelly.

While efforts are continually being made to retain in the product the natural full flavour of the fresh fruit, processes also have been developed to extract the fresh fruit flavour substances from fresh fruits. This "essence" is concentrated and may be added to various fruit products to give them a more characteristic and satisfying taste. The process has potential commercial possibilities.

Selecting For Hatchability

Hatchability of total eggs set in approved hatcheries has averaged in the vicinity of seventy per cent in recent years. As a breed, Barred Plymouth Rocks are usually about average in respect to hatchability when compared with other breeds. Nutrition, incubation and other methods of handling and storing the eggs affect the percentage of fertile eggs which will hatch, and all are largely under the control of the flock owner and hatchery operator. The presence of lethal hereditary factors in some birds may be another cause of the failure of some eggs to hatch.

It is apparent that per cent fertility plays an important part in the percentage of total eggs which will hatch. About ninety per cent or more of all hatching eggs produced are expected to be fertile, but low fertility in some flocks is a serious economic problem.

In searching for the cause of low fertility, nutrition of the flock during growth as well as at maturity should be examined to see if it is satisfactory for the development of vigorous birds. Good range conditions and proper housing facilities in the breeding pens are also conducive to high fertility.

At the Dominion Experimental Station, Fredericton, N. B., says Leonard Griesbach, fertility tests indicate that extremely early maturing males are likely to be small and therefore should be discarded. Only vigorous males which show good body development and other characteristics when not more than six months of age, should be selected. These tests also indicate that in flocks where fertility has become a problem, the introduction of new blood may be desirable. This action is more likely to be necessary in small flocks than in large ones where there are great opportunities for suitable selection.



Small turkeys for small families—that sales slogan has brought success to W. Otto Wiggins, veteran farmer of Ingleswood. By intensive cross-breeding, Mr. Wiggins has developed cockbirds that weigh six to 20 pounds at maturity. The average weight would be eight pounds—just right for a Yuletide feast when one or two children are involved. Donna Maclelland and W. Otto Wiggins hold turkeys in picture above. Small turkey is seen at left, normal one at right.

Recommend Flowering Bulbs

Vividly coloured pictures, high pressure advertising and an almost endless list of names leave many individuals in a dilemma in making a choice of flowering bulb varieties. This is not at all surprising when it is considered that with daffodils, for example, approximately 400 new varieties registered in the two years, 1947 and 1948, not to mention more than 5,000 which had registered status a decade earlier. The mere fact of registration, of course, does not put the stamp of approval on a variety. Approval may come from several sources. Two sources are cited here. One such source is the rating by ballot by specialists in the field. While published results of this ballot rating are a valuable means for the novice in making a selection, unfortunately this system considers as yet, daffodils only—nothing is available for the other kinds such as tulips, iris and hyacinth. Another source where flowering bulb varieties are tested and approved is the Dominion Experimental Station, Saanichton, B.C., says J.H. Crossley, assistant in charge of bulb crops. Since 1916 variety testing has been a major project and hundreds of varieties have "gone through the mill." The following prepared list of recommended varieties is based on the results of these variety tests with due consideration to the previously mentioned system of daffodils. The list represents a collection of the various colours and classes which are meant to suit the average taste and pocketbook, and which are meant primarily for garden decoration and household purposes.

Narcissus: (Trumpet Varieties) yellow King Alfred, Forerunner, Golden Harvest Magnificence, (Bicolor) Van Watson, Giant, (White) Bearsheba or Mrs. E.H. Kneale; (Large and small cupped varieties) Fortune, Carlton, Polinda, Porthilly Tunis John Evelyn, Carlsneer, Mrs. R.O. Backhouse, (Pink daffodil), Scarlet Elegance; (Double varieties) Irene Copland, Twink, Cheerfulness; (Tricolors) (Jonquil) Trevillian; (Tazetta) varieties) Winkie, Silver Chimes; Early Perfection, Scarlet Gem, Eucyrium, L'Innocence; (Poeticus) Actaea.

Tulips: (Reds and Scarlets) Advance, Crater, Paracombes Saunders, Wm. Pitt (good for indoors), Marshall Haig, Red Emperor, Bartigon (early, mendel); (Yellow shades) (early, mendel); (Mrs. John T. Schepers) (large flower), Niphetos (very attractive in bud), Wall-street; (Red and yellow) Keizerstrook; (Pink Shades) Princess Elizabeth, Philip Snowden, Rose Copland, Pride of Zwandenburg, Albino or Carrara; (Mauves) Lady surpassable, Telescopium, Avant; (Chamberlain, Aristocrat, Avant; (Purple) Denier, Louis XIV; (Parrot) Fantasy, Blue Parrot; (Lily flowered, Cerise-pink) Siren or Marcelline; (Doubles) Muriilo; (Pink) Peach Blossom; (Light Blue) Wedgewood (early); (Deep Blue) Imperator; Yellow Queen; White Superior.

Hyacinths: (White) L'Innocence; (Light Blue) Queen; (Dark pink) (Dark Blue) Bismark; (Dark pink) Gertrude; (Bright rose) La Victoire; (Yellow) City of Haarlem toire; (Yellow) City of Haarlem or Yellow Hammer.

Hints On Care Of Laying Flock

Mortality among laying birds is one of the most profit reducing factors of the egg producing phase of poultry keeping, for at the death of a bird, the potential profit from future egg production must be added to the immediate market value of the dead bird.

In the poultry breeding work at the Dominion Experimental Station at Harrow, Ont., the study of mortality within family groups has shown that although some lines demonstrate a better state of longevity than others, some males when bred more than one year, vary as regards daughter mortality. Some exceed the first year mortality during the second year, while in other cases the opposite is met with. Where males show a consistently low family depletion during two or more years of testing, special effort is made to extend their progeny as having something extra in the way of vitality.

Mortality cannot always be attributed to inherent weakness, for it is possible for adverse environmental conditions to have a bearing on vigor. Nutritional deficiencies may reduce a flock where they give way to ordinary exposure, whereas the same birds on an adequate diet would stand up through similar circumstances.

The causes of poultry mortality are numerous and often puzzling as to their source of introduction. Diseases probably predominate among the causes of death, particularly among laying pullets, and quite often they arise through some oversight. Housing young and old together, bringing in new birds without a suitable period of isolation, or the admission of people and materials that have had previous contact with other flocks frequently opens the door to trouble. Prompt removal of birds showing signs of sickness is a worthwhile practice. In fact, a daily pause to inspect the flock in their activities is a good habit to cultivate.

Cleanliness of the eating and drinking utensils as well as the wholesome of the food and health, Green food, in the form of good quality hay to pick at, is recommended as a source of protection against vices.

To draw a fine line between the distinct influences of breeding and environment on poultry mortality is difficult, indeed almost impossible, so the safest, and most practical, course must be chosen. This is to secure stock from a good source and then be prepared to use proper methods of management to allow full expression of its inherent vitality.

Wheat Varieties Canada Grows

Canadians may justly be proud of the wheat they grow. The reputation they have enjoyed for so many years has been built upon the high quality of the wheat for flour making purposes, and for the uniformity of the different commercial grades of wheat from year to year. This high standard has been vigilantly maintained by licensing only varieties that have shown high quality not only in the field but in repeated milling and baking tests.

For over twenty years samples drawn from cargoes leaving Fort William, Ontario, Vancouver B.C., and as frequently as possible from Fort Churchill, have been analysed to ascertain what varieties were actually being shipped out of the country. The annual survey has just been completed and the results are quite gratifying. The trend in the upper grades such as Nos. 1 and 2 and Manitoba Northern has been for an increase in the amounts of Marquis and Thatcher varieties in shipments from Fort William, while in those from Vancouver, Thatcher has increased very materially. The amount of Red Bobs in the Fort William samples has remained much the same as last season but there has been a decided decline in this variety appearing in the Vancouver shipments, amounting from four to six per cent in the different grades.

During the past few years the total percentage of these new rust resistant varieties, Thatcher, Apex, Renown and Regent, shipped from Fort William and Vancouver has had a very marked effect in driving out some inferior varieties. The poor quality wheats have now reached trace proportions. It is expected that the introduction of the new Redman and Saunders varieties will still further improve the quality shipped from Fort William.

J. C. C. Fraser, Cereal Division, Central Experimental Farm, Ottawa. To date, neither of these two varieties has appeared in the annual survey, as nearly every bushel has been used for seed owing to the great demand for such purposes. It is estimated that there will be over thirteen million bushels of Redman and one million bushels of Saunders produced in 1949, much of which will be used for seed purposes.

Protein Content Of Hybrid Corn

Growing hybrid corn for grain production has obvious advantages to the farmer. Its practical possibilities have been amply demonstrated in recent years and many growers have reported yields of 45 to 55 bushels of shelled corn per acre and some even higher. Although most fields of corn in this area have averaged from 3 to 10 acres, individual growers have had as high as 80 to 90 a res.

Sometimes the question is asked, "How about the protein content of the grain produced by these hybrids?" This same question has been asked by corn growers in areas of Canada and the United States where corn is commonly grown, and where hybrid corn has replaced, to a large extent, the old open-pollinated varieties.

It seems to be fairly generally agreed that the protein content of grain produced by hybrids tends to be slightly lower than that produced by the open-pollinated varieties. It is also generally accepted that because of much higher yields obtained from hybrids, the total protein per acre is considerably greater than that produced by the open-pollinated varieties.

Many experimental tests show that the grain from some hybrids has averaged higher in per cent protein than grain from the open-pollinated varieties, says F. Dimmock, Central Experimental Farm, Ottawa. Some hybrids have been like different varieties; they vary considerably in the protein content of the grain which they produce. Some are high and some are low. Both seasonal and soil conditions have a profound effect upon the composition of the grain, irrespective of whether the crop grown is a hybrid or open-pollinated variety.

A comparison made at Ottawa between 7 hybrids and 5 open-pollinated varieties of similar maturity, showed that the grain of the hybrids averaged 11.6 per cent protein, while that of the open-pollinated varieties averaged 12.5 per cent. In another year, 38 hybrids varied from 10.1 per cent protein for the lowest, to 12.5 per cent protein for the highest. The figures given are all on the basis of dry matter. As far as the protein content of hybrids grown at Ottawa is concerned it is considered to be quite satisfactory and has compared favourably with that produced by comparable open-pollinated varieties grown under the same condition.

Farm Notes From Abroad

Wheat Research

A wheat research institute is to be established at Wagga Agricultural College, New South Wales, Australia. The institute will undertake research in all phases of wheat growing and will also examine the baking qualities of wheat produced in Australia.

World Wheat Agreement

The number of countries to sign the International Wheat Agreement now totals 21, when at the end of October it was ratified by Nicaragua, Panama, and Brazil. The total quantity of wheat which importers have guaranteed to purchase is now 46.5 million bushels. This is 96.5 per cent of the overall quantity of 48.2 million bushels which all signatory importers accepted under the Agreement.

Spanish Grains

Total output of wheat, rye, barley, oats and corn in Spain in 1949 is estimated at 4 million metric tons compared with 5.4 million tons in 1948. In the first quarter of 1949, Spanish imports, almost entirely of Argentine wheat, were appreciably larger than in the same period of 1948.

Argentine Milk

The Federation of Milk Producers has petitioned the Argentine Government for financial aid to establish a chain of new dairies, the first of which will be at Buenos Aires, and will have a daily pasteurization capacity of 176 thousand quarts.

European Trade

A recent resolution of the Organization for European Economic Co-operation urges the European government which are recipients of Marshall Aid to reduce barriers to normal trade by 50 per cent.

Standards For Marketing Seed

At a meeting held early in August to review standards for seed grades under The Seeds Act the Advisory Board recommended a number of changes which have since been approved by the Dominion Minister of Agriculture, Chief among the changes are the following:

Special seed grade standards for flax seed and sunflower seed were added to the Regulations under The Seeds Act.

Standards for finer grasses and pasture mixture were adjusted, having regard to information secured from the Dominion Department of Agriculture Seed Laboratory on the report of analysis of samples submitted during the last seed year. For pasture mixtures the type of red clover used—"double cut" or "single cut"—must be correctly stated.

Vegetable and garden seed produced from approved sources, and found upon inspection of the growing crop to be pure as to variety, may be inspected and sealed by an inspector as "Registered" or "Certified" seed, as the case may be.

Grade standards for onion sets were raised to limit the percentage of soft, immature, decayed and sprouted bulbs.

The system of grading seed to show relative value is favoured by the Advisory Board, and is in keeping with the principle adopted for marketing other farm products.

WINTER TICK CONTROL

The winter tick, *Dermacentor albipictus* (Pack.), establishes itself on range horses in Canada in the fall, when large numbers of the young parasites attach themselves from grass, each to spend its three stages through the winter on the coat of its particular host. This tick is often not noticed until early spring, when it reaches its adult stage and is easily confused with the spring paralysis tick. Horses should be carefully examined periodically through the winter for the presence of the winter tick. In all stages it is readily killed by a thorough dusting with a benzene hexachloride dust containing approximately five-tenths of one per cent gamma isomer, report entomologists of the Dominion Department of Agriculture. This dust is available at most feed stores and may be applied with a dust gun or even a perforated tin.

FEEDER CATTLE

In just about five hours auctioneer Duncan A. Brown sold 2,696 head of cattle for \$268,822 at the sixth Annual Sale of feeder and stock cattle at Little Current, Manitoulin, Ont., September 29. The overall average price was \$14.90 and the top price \$21.50. The low price was \$12.10 for a load of canner cows.

Five head went to Harrisburg Penn. one load to Buffalo and the remainder were shipped to western Ontario, Madoc and Carleton areas.

Manitoulin Island cattle have an enviable reputation for quality, freedom from disease, and the ability to make profitable gains in feed lots. At the fourth general sale, B. test there were only three reactors—two herds infected out of 25,000 head tested.

Grading and weighing into uniform carlots was under the supervision of W. S. MacMullen, Livestock Fieldman, Dominion Department of Agriculture and R. H. Graham, Assistant Livestock Commissioner, Ontario Department of Agriculture. The Manager of the sale was J. H. Wilkin of Gore Bay, Manitoulin.

AGRICULTURAL FILM TAKES TOP PLACE

A recent Cleveland convention of the Biological Photographers' Association awarded first prize to the unique Canadian 16mm colour film "Vegetable Insects", produced for the Dominion Department of Agriculture. Currently being re-edited for release next spring to Canadian theatres, this motion picture features microscopic close-ups of live garden pests in their natural environments.

Entomologists of the Department, particularly Alan Dunstan, field crop insect investigator, spent many months of active observation

FAULTY BUTTER

On October 31, T. Gevry, St. Pie, Bagot Co., P.Q., Reg. No. 3044, appeared before Judge Victor Talbot at St. Hyacinthe, P.Q., pleaded guilty to having sold creamery butter containing more than 13 per cent water and less than 90 per cent milk fat together with an abnormally high acid content, contrary to subsection (a) section 6, of the Dairy Industry Act and was fined \$10 with costs \$10 for analysis.

At the same time Mr. Gevry also pleaded guilty to having sold creamery butter of Third Grade quality in wrappers marked First Grade, contrary to clause 45 of the Regulations under Part 2 of the Dairy Industry Act, and was fined \$60 with costs.

The charges were laid by an officer of the Dominion Department of Agriculture.

The 1949 Canadian honey crop is estimated at 31,286,000 pounds, a decline of 31 per cent from the near record 1948 crop of 46,145,000 pounds.

POULTRY RANGE FOR GROWING BIRDS

A good poultry range for growing birds will furnish green, tender palatable and nutritious forage. A dense sod will help keep the chickens out of the mud, and help reduce trouble from filth, borne diseases. R. A. Sansbury of the Dominion Experimental Station, Saanichton, reports that an experiment was carried out there for four years to determine the most suitable pasture crops and green feed substitutes for poultry. The experiment consisted of dividing chicks from the regular breeding pens into three groups according to whether they received cereals, grasses or alfalfa as a starter supplement. This supplement amounted to five per cent of the pastures consisted of the crop comparable to the green feed substitutes.

The experiment showed (1) that pastures must be of high quality, and anything less will result in a disappointment in the quality of the matured pullet; (2) that green pasture is a safety factor, an added

safeguard if the ration should be inadequate, but is not a substitute for good management or careful feeding. With good pasture restricted feeding may be carried out, but should not be done to a point where it will affect growth, fleshing, etc. If so, it may prove to be an expensive saving. The importance of rotation of pastures so that the birds are on the same land only once in three years cannot be over emphasized.

From this experiment grasses appeared to be the best green feed. Alfalfa is the best pasture crop. Once established it can withstand drought better than cereals or grasses. Taking into consideration the labour required to sow cereals and the time required to cultivate alfalfa to keep it free from weeds, grasses grown on well prepared land are valuable for commercial poultry raising.

Rigid Inspection Guards Livestock

The methods used by the veterinarians of the Dominion Department of Agriculture to prevent the introduction and spread of animal diseases in Canada are many. Regulations of the Health of Animals Division not only apply to the importation of animals from other countries and the constant watch for the outbreak of contagious diseases within Canada, but they cover the inspection of stock cars and trucks, the cleaning and disinfection of live poultry crates at poultry processing or killing plants.

The inspection of stock cars and trucks is no small job. In 1948, the cleaning and disinfection of 96,417 cars and 2,972 trucks was supervised by inspectors of the Division.

Clay soils are naturally more plentifully provided with the mineral plant food substances than are sandy soils. Peat and muck soils, consisting essentially of vegetable matter, are liable to be deficient in mineral matter. Though rich in organic matter and in latent nitrogen they may still derive benefit from barnyard manure.

Attentive Care, Plenty of 'Exercise' Makes Bardolier a Bull of Distinction

By RICHARD KLEINER
NEA Staff Correspondent



BLACK BARDOLIER III OF WHITE GATES: "One of the three or four greatest bulls of our time."

FLANDERS, N. J.—(NEA)—Let any cattleman get within 100 miles of Flanders and he can't rest until he gets a look inside White Gates Farm. The object of his curiosity is 1900 pounds of Aberdeen Angus bull that goes by the name of Black Bardolier III of White Gates.

"Bard," says his owner, wealthy Eugene K. Denton, "is one of the three or four greatest bulls of our time."

Naturally, Bard is treated as befits his reputation. He lives what might be called the life of Riley, bovine division. He doesn't have to lift a hoof if he doesn't feel like it.

When he does lift a hoof though, he's liable to find somebody waiting there to maul him. And, meanwhile, other people are around the other side, curling his beautiful raven coat. Or spraying him. Or oiling him. All this in his private stall.

Every morning, Bard gets up and eats a light breakfast. Breakfast, like his other meals, is a special blend of grain and hay. During a day, he'll put away about 10 pounds of grain and a lot of hay. It costs "a couple of thousand" a year to feed him.

After breakfast comes what is called "exercise." To put it bluntly, Bard is simply exposed to the charms of some beautiful cows. More "exercise" follows after lunch. With all that "exercise," the kid goes to sleep early.

To rate such an idyllic existence, Bard had to be good. He is. He's never been in a show, and has more ribbons than a five-and-ten counter. According to Denton, "he is the closest

thing to perfection in an Aberdeen Angus bull that's ever been bred."

"What we breeders are after," says Denton, who head an exclusive women's shop in New York in his non-farming hours, "is more meat on beef animals. We try to lay the most meat on these quarters that produce the choicest cuts—like sirloin for example."

"Well, if we have a bull that is a little skimpy in one part but full in another, we breed him to a cow that is full in that first part. Bard is the result of generations of careful breeding like that."

Denton's bull represents what has become known as the Bardolier strain of Aberdeen Angus. The strain stems from generations of breeding work some of which is still going on. Bard himself was born on Denton's farm in 1946, after Denton purchased his

mother from a Webberville, Mich., breeder. The cow was carrying Bard at the time.

His fame has spread so completely throughout the Aberdeen Angus fanciers' world that the American Aberdeen Angus Breeders' Association banquet during the International Livestock Show in Chicago, Bard's picture was on the banquet menu cover. Underneath were the words: "The Symbol of Perfection in Beef Production."

Denton has reportedly had offers up to \$200,000 for the bull but will only say, "We wouldn't sell him at any price."

"Once," Denton recalls, "a wealthy gentleman handed me an open checkbook and said, 'Fill it out for whatever you want.' I told him he didn't have enough money to buy him."



HIGHLAND KING—For his silky coat, his proud bearing and well-built chassis, "Dragon II", aristocratic Highland steer, won first prize in his class at a London stock show.