

SEED PELLETING PROCESS FOR
BIRD AND DISEASE CONTROL

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Pelleting seed is done at Vallonia Nursery for both bird repelling and early damping-off control. The following products have one or both of the above effects: (1) Arasan, 75% (SFX); (2) endrin, 50% W; (3) orthocide, 50 W. Bird and rodent repelling is increased by the addition of (1) anthraquinone; (2) Morkit; or (3) aluminum powder, flaked (paint stores). Sticker or pelleting slurry is made from (1) Dow latex 512 R; (2) Dow methycellulose; or (3) Flintkote, hydrol C-13-HCP emulsion.

One of each group may be used with good results. There may be other manufactured products that will work equally well. The details given in this article are strictly informative and no recommendation of any manufacturer's product is intended.

Equipment

Scales and measures for weighing or measuring seed and chemicals, 5-gallon cans for mixing slurry, dust respirator, goggles, rubber gloves, cement mixer (or agitator, 20-gallon semesan drum mixer, or Dybvig seed cleaner), and screens or trays for treated seed.

The materials should all be weighed or measured out before putting the seed in the mixer. As soon as the seed is in the mixer add the adhesive slurry (latex, methocellulose, or asphalt emulsion). As soon as all the seeds are moist (about 20 revolutions of mixer) add the fungicide (Arasan, endrin, or orthocide), allow to mix for about 30 seconds or 20 turns and add the repellent (anthraquinone, Morkit or aluminum powder). The seed should make another 20 turns or 30 seconds, which should give all seeds a good coating of the final repellent. It is then removed from the mixer and spread out on screens or trays to dry. The total mixing time should not exceed 3 or 4 minutes, because long agitation may injure seed or chip off the pelleted coat.

Adhesive

The adhesive that we are currently using is Dow latex 512R (Dow Chemical C.o., Midland, Mich.), about \$2 per gallon. One gallon will treat at least 300 pounds of pine seed. The latex is diluted with water, one part latex to nine parts of water. The amount needed for a 10-pound batch of seed is about 1 pint of the resulting slurry. The seed should then be moist but not excessively wet. Mix only enough slurry for the seed to be treated.

Another product that may be used with satisfactory results is Dow Methocel Powder 100 CPS. This slurry is made by mixing 2 ounces of methocel powder in 1 /2 pint of hot water to a thin paste; then add 1 gallon of cold water, stir well, and allow to congeal over night. As with latex, one pint of slurry is used for a 10-pound batch of seed. Excessive rubbing of dry treated seed should be avoided.

Satisfactory techniques for using the Flintkote asphalt adhesive have not been developed as yet at this nursery.

Fungicide

Equally good results have been obtained with Arasan 75% (SFX) (Du Pont Chemical Co.), endrin 50% W, or orthocide 50 W (California Spray Chemical Co., 1000 Maxwell Ave., Evansville, Ind.). All three fungicides seem to have repellent effect on birds and rodents. Only one need be used. Simply use the powder at the rate of 1 pint.(about 1 /4 pound) per 10-pound batch of seed.

Endrin, Arasan, and orthocide cost about \$2 per pound, are usually available locally, and can be used interchangeably in the process.

Repellent

Morkit, the imported anthraquinone,- has been discarded in favor of our more AC. effective American anthraquinone. We use sublimed synthetic anthroquinone (American Cyanamid Co., Rockefeller Plaza, New York 20, N. Y.). The patent for the use of this material as a bird repellent is held by Winthrop Laboratories, Inc., New York, N. Y. Licensing agreements are being negotiated. Cost is 80 or 90 cents per pound. About 1 pint of the yellow synthetic powder will dry up the 10-pound batch of wet Arasan pelleted seed, leaving a yellow coated pellet, almost dry. Again there may be other products equally as effective but which are unknown to us at the present time.

The amounts of each of the three components will be varied slightly to adjust to the following: Pine seed size, pine seed coat porosity, dry or stratified seed (wetness),. etc. Experience will govern. If the anthraquinone seed is still wet a small amount of drier may be added in the form of more anthraquinone or a tablespoonful or two of aluminum powder, flake, or red lead powder, and the batch turned a few more times.

Safety

Endrin is a chlorinated hydrocarbon and is one of the more toxic of the group. A dust respirator and rubber gloves are suggested in blending these items.