

# Canterbury Chamber of Commerce

Agricultural Bulletin

## PAINTING ON THE FARM

Prepared in conjunction with Canterbury Agricultural College, Lincoln, and  
Economics Dept., Canterbury College

BULLETIN

CHRISTCHURCH, OCTOBER, 1936

No. 88

### Painting on the Farm

Farm residences, sheds, gates, and implements can be made to last for many years if regularly and properly painted. Many of these painting jobs would not be large enough to attract a skilled tradesman or else would not be financially possible, but for the existence of surplus labour on the farm in some "off" season.

In recent years painting has been much simplified by the introduction of many excellent ready mixed paints, and now the amateur can soon learn the practical details necessary to produce quite a satisfactory result. Even a ready mixed paint must be selected for the type of work and the proper procedure must be followed if a lasting and pleasing effect is desired. For good painting it is essential to have first some understanding of the materials commonly employed in the trade.

### Painting Materials

#### (A) BASES.

(1) White lead. This has a good covering power and is easy to work, but its paint film is soft and easily soiled. Unless accompanied by some stainer or pigment it tends to become chalky on exposure near the sea coast. Lead poisoning is possible due to smoking or eating with hands soiled by white lead paint or to inhaling dust produced by rubbing down painted surfaces dry. White lead paints should not be applied in the form of a spray and generally should not be used for interior work. Paint pots should be kept away from stock.

(2) Zinc Oxide (zinc white) is employed in interior paints. It gives a hard, firm coat to which dirt does not readily adhere, and is used largely in the manufacture of enamels. It is very durable and gives permanence of colour. If used by itself on exterior work it will be found to dry very hard and crack badly. It is less opaque than white lead. Four coats of zinc oxide are equal in covering power to three coats of white lead.

(3) Lithopone is extremely opaque and has good spreading qualities. It is used in combination with zinc oxide as an interior flat paint. It is also used in water paints, and in many ready made inexpensive paints for exterior use. It is not poisonous. It is very sensitive to light and is not used alone. In fact instances have been known of trees, shadows or fences appearing photographed on house walls painted with lithopone.

(4) Red Lead. This is used chiefly as a priming or first coat. It is lacking in mechanical strength and so should not be used alone as a final coat in exposed places. It has a mild oxidising action and when used on ironwork will form a passive layer on the surface of the iron, so giving great protection against corrosion. Red lead "in suspension" or "non-settling" should be used.

(5) Titanium zinc (combination of titanium and zinc oxide). This is a comparatively new material and the subject of rather conflicting reports. Although more expensive per gallon, its capacity and spreading power are sufficiently great for economical work. Because of its non-poisonous character, it is advocated abroad that this should replace all lead compounds. Several local painters have had difficulty with this paint setting too hard or else chalking. Possibly these defects were due to an incorrect proportion of zinc. Titanium zinc has been found useful near the sea coast.

(6) White lead and zinc oxide combined (60-70 per cent. white lead, 40-30 per cent. zinc oxide). Although still poisonous, this base is the foundation of most paints for exterior work. It has been found much more resistant to New Zealand conditions than white lead alone. It is employed in exposed conditions where durability is required and particularly for stables, pigstyes, poultry-houses, etc., where soiling may occur.

(7) Aluminium metal base is frequently employed for iron work. The aluminium flakes conduct electricity and since most metallic corrosion is electrochemical it happens that when this paint has been applied directly to ironwork the iron is preserved while the aluminium is rapidly eaten away. Flaked aluminium should be applied by brushing, and when placed over a red lead priming coat will give an impervious, strong and permanent paint that will protect ironwork for many years. It is claimed to be also heat resisting.

(8) and (9) Bronze and Graphite are said to be "electropositive to iron," and when applied directly may increase its rate of corrosion.

(B) VEHICLES (to float and bind the bases and pigments).

(1) Raw Linseed Oil. This is a pale greenish colour, is slow drying, and so must be used with a dryer. It is durable and can be used for delicate shades and is the vehicle most commonly used.

(2) Boiled Linseed Oil is quick drying and forms a tough film, but is too dark in colour for use with light colour paints.

The elasticity of linseed oil films is said to be due to the fact that the paint film is semi-fluid beneath the surface. After several years the film becomes completely solid and brittle. Then as the timber, or other material painted, expands and contracts daily with changes in temperature there is a tendency for the paint to flake off or to become pervious to the weather.

(3) and (4) Tung Oil and Stand Oil are often used in proprietary products and in many cases improve the durability of the paint.

#### (C) THINNERS.

(1) Turpentine makes it possible to brush the paint in in thin, even layers. It also helps in the drying of the paint, an advantage which turpentine substitutes may not possess. Ninety per cent. of the turpentine is said to evaporate within a quarter of an hour after the paint is applied. Turpentine produces a flat (or dull) finish and prevents the blistering which would occur if the paint were left in lumps or in a very thick skin. Priming coats usually contain large quantities of turpentine. If turpentine is used in excess, however, the priming coat becomes deficient in linseed oil. Oil may then be drawn from the final coat, which as a result becomes over-pigmented. Chalking may result.

#### (D) DRIERS.

(1) Patent Driers. In hand mixed paints 1oz of paste patent driers is used with each 1lb of white lead. It should not be used with zinc oxide paints.

(2) Terebine. This is a more powerful drying agent and should be used with care if durability is desired. Half an ounce is sufficient for nearly a gallon of paint.

(E) PIGMENTS. Yellow Ochre, Venetian Red, Burnt Sienna, etc. Tradesmen who mix their own paints order these colours "ground in oil."

### Workmanship

(A) PAINTING ON NEW TIMBER (e.g., weatherboards, etc.).

Obtain a 3½ in or 4 in flat wall brush, a 1½ in flat varnish brush for mouldings, etc., and also a flat soft dusting brush. The new paint brushes should

be soaked in water for several hours in order to tighten up the bristles in their binding. They should then be dried before painting is commenced. Make several trestles to support standing planks in order to reduce the amount of work done from a ladder. The procedure is then as follows:—

(1) Knotting (Shellac dissolved in methylated spirits) should first be applied to any knots or veins that exude gum.

(2) A priming coat should then be applied. This should penetrate and fill up all pores and crevices. Note that window frames, etc., should be primed before being built in. Tins of ready mixed priming paint may be purchased or the following mixture can be made up. Mix thoroughly 21lb white lead paste, 1lb dry red lead, 3½ pints raw linseed oil, 1 pint turpentine, and 12oz patent driers. This makes one gallon of primer. Strain through a woven cloth such as a singlet or stocking. Better results will be obtained, however, with a non-settling proprietary red lead primer.

(3) Nails should be punched home and stopped with putty prepared by grinding whiting with one third white lead in raw linseed oil.

(4) The first true coat is then applied. Use ready-mixed "finishing" paint of 60 per cent. white lead and 40 per cent. zinc oxide, but pour off two-thirds of the free oil and replace by turpentine. The oil poured off can be used in the final coat. In contract painting it is usual to specify that the succeeding coats shall have distinctive shades.

(5) After 24 hours or preferably 72 hours the final coat may be applied. The finishing paint used is the same as for (4) except that turpentine is not substituted for oil. The paint should, however, be well stirred with a stick and poured to a second pot and back several times before use. Dip the brush one inch only into the paint, slap the brush against the side of the can without dragging too heavily over the sharp edge and apply in even strokes. If brush marks are to be avoided the brush should touch first on the dry surface of the board and leave from the surface wet by the previous stroke. It is not necessary to wash or rub down the surfaces between coats. On wood or plaster a gallon of priming coat will cover 35-55 sq. yds and a gallon of finishing coat 70-90 sq. yds.

#### (B) REPAINTING OLD TIMBER.

The old paintwork should be washed with soap and water or, if the surface is much broken or blistered, the old paint must be removed by burning with a blow-lamp or using a paint solvent. Some paint solvents (removers) are very inflammable. Caustic or acid paint removers are not permitted in good work. The pink priming coat will be unnecessary over old paintwork, but two coats of finishing

paint should be applied as described under A (4) and (5) for painting new timber.

(C) Painting Roofs—Iron roofs should be left to weather for six to 18 months before painting. A good quality green or red paint sold especially for roofs should be used as high elasticity is desired. If it is desired to paint new galvanised iron the surface should be first washed with a solution of 4oz copper acetate in 1 gallon of water.

(D) PAINTING TANKS AND IRON IMPLEMENTS, ETC. Rust should first be removed by scraping and wire brushing. For a large object it is usually considered sufficient to remove all free scale, but where a very good appearance is desired (e.g., repainting a car), the rusted surface must be made shiny with emery paper. Grease should be removed with benzine. A red lead and raw linseed oil priming coat is then applied. One or two finishing coats of white lead, red oxide, or graphite paint can then be employed, but the most durable effect will be obtained with flaked aluminium well brushed in.

(E) PAINTING CEMENT OR PLASTER WORK. After a year or two, the surface can be brushed down and painted in the same manner as timber. New work can be painted if first given two coats of zinc sulphate solution, 3-4lb to one gallon of water.

#### Distempers, Etc.

To Distemper an Interior Plaster Wall—If the wall surface is cracked or chipped, apply a first coat of plaster of paris and milk. The milk will prevent the plaster of paris from setting too quickly. This solution should also contain a small percentage of the distemper to be used in the finishing coat. A coat of glue-size should then be applied to prevent chalking. This is followed by one or two coats of hot or cold water distemper. More than three dozen colours are available. It should be noted that special proprietary products will produce more durable effects at a little extra cost. Flat or gloss oil paints will give a less sensitive surface, and are washable.

#### Durable Whitewash

The U.S.A. National Lime Association (1934) gives a number of whitewash recipes which should be authoritative. For high grade work, the association especially recommends the following, which is a mixture of three solutions (a), (b), and (c).

(a) Add a little water at a time to 38lb of quick or burnt limestone, placed in a wooden vat or sawn down barrel. When slaking is well started, add more water gradually to replace that lost in the slaking process. Too little water will allow the lime to become scorched or granular.

Too much water at a time will retard or quench the slaking process. After the lime is completely slaked add enough water to make a thick paste, cover the container and allow to stand for several hours or overnight. Strain the paste while still thick through wire fly screen and add about three Imperial gallons of water.

(b) Dissolve 3lb of borax in 2½ Imperial gallons of skim milk. When the lime paste (a) and the milk solution (b) are thoroughly cool, slowly add (b) to (a), stirring thoroughly.

(c) Just before using slowly add a solution of three pints formaldehyde dissolved in 2½ Imperial gallons of water, stirring constantly and vigorously. Adding the formaldehyde too quickly will spoil the mixture. The best results can be obtained by using a fresh solution each day. If desired 50lb of hydrated lime mixed with six Imperial gallons of water may be used in place of the newly-slaked lime solution (a).

#### Creosoting Soft Timbers (Posts, etc.)

Pinus and other soft timbers may be made to last for a number of years when treated by the hot and cold creosote oil process. Obtain two tanks sufficient to take the longest pieces to be treated. In one bath keep the boards or posts simmering for about four hours (at about 200 degrees Fahrenheit for preference) in hot creosote oil. This drives off the greater part of the moisture in the timber. The timber is then plunged into the second bath containing cold creosote oil which is rapidly absorbed into the pores. Creosote is sold at about 1s 6d per gallon. For fence posts it will probably be sufficient to creosote the lower ends up to nine inches above ground level. Creosoting darkens the timber, although bleaching will occur after prolonged exposure to the light. Fowlhouses and stables may be brush painted with creosote oil to render them vermin free.

Tarring Work.—Where appearance is not important iron roofs may be treated cheaply with tar paint containing certain resins. Coal tar alone will be found unsatisfactory, as it is not sufficiently elastic. Tar alone is not to be recommended for painting posts since it will not penetrate and soon becomes brittle. Cracking occurs and the timber is liable to decay. Bituminous paints are fairly serviceable for gutters and the interior of water tanks. For ordinary roof and building work it is probable that even a medium quality oxide paint will have more anti-corrosive properties and will give less fire risk than either tar or bitumen.

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Copies of this bulletin may be obtained from the Secretary, Canterbury Chamber of Commerce, P.O. Box 187, Christchurch.