

Strengths of Dynamites

SINCE dynamite has become almost a staple commodity in agricultural sections, farmers and orchardists are more or less confused by the strength markings on dynamite cartridges, as they are not posted on the standard of strength on which these markings are based.

It appears that when nitroglycerin was first discovered and attempts were made to use it in quarrying, mining, etc., it was so erratic in its behavior and so dangerous that scientists at once set to work to devise some means of controlling it.

The result of these investigations was dynamite, which was the term given to a high explosive consisting of an absorbent material saturated with nitroglycerin. The absorbent material first used was an earthy substance, kieselguhr, which was not explosive in itself, but which had great absorptive power.

The strength of the dynamite depended on the amount of nitroglycerin in a given unit of weight would absorb. For instance, if a pound cartridge of dynamite contained 40 per cent of nitroglycerin and 40 of earth, it would be called a 60 per cent dynamite. Later on it was found that the dynamite could be made cheaper and more efficient by changing the absorbent to powdered wood or wood flour, and by mixing with the nitroglycerin, other compounds such as nitrate of ammonia.

Modern dynamite is made in various kinds. Those consisting of nitroglycerin and wood flour are known as straight dynamites. A 40 per cent straight dynamite has 40 per cent of the explosive power of an equal weight of liquid nitroglycerin; also, a cartridge of dynamite made of wood flour, nitroglycerin, nitrate of ammonia and the chemicals that are put in some dynamites to make them low freezing, has an explosive efficiency of 40 per cent as compared with liquid nitroglycerin, but of course they do not contain 40 per cent nitroglycerin, as part of the strength comes from other ingredients.

The strength and kind of dynamite most used in quarrying and railroad work is 40 per cent low freezing dynamite, containing nitroglycerin mixed with other explosive compounds. This same grade is used in boulder blasting and very difficult stump blasting, but for most farm work the 20 per cent low freezing extra dynamites are sufficiently strong and are of course, cheaper than the higher strength. Such a dynamite does not contain 20 per cent of nitroglycerin, as part of its explosive strength is made up of nitrate of ammonia and other compounds.

Straight nitroglycerin is not necessary in any farm work except propagated ditch blasting where dynamite, very sensitive to shock, is necessary. Twenty per cent low freezing dynamite may be used for ditch blasting when a blasting machine is used to fire the charge. This same dynamite, fired with a fuse and blasting cap, is the most commonly used strength for subsoiling and tree planting, and will be quite generally used for stump blasting as soon as farmers study how to do this work economically. The big land companies that buy dynamite by the carload have found that they can blast pine stumps satisfactorily with 20 per cent low freezing dynamite, and the farmer with only a few acres to clear can do the same.

It must be apparent that it is not necessary to use in agricultural work as strong a dynamite as quarrymen require for excavating rock, especially when the lower strength cost less money.

A few days after the new farmer had purchased a horse from a thrifty Scot, he returned in an angry mood. "You told me this horse had won half a dozen matches against some of the best horses in the country. He can't trot a mile in six minutes to save himself. You lied to me!" he denounced.

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