

delayed is no trifling loss. A hundred trees can be set at a cost of ten to twenty dollars, or for almost no cost, if one has spare time and the saplings are easily available. These may in ten to fifteen years grow to be worth three to ten dollars apiece for needed timber and fuel, or for the fruit or nuts produced.

It would be greatly to the advantage of the country, its climate, and its beauty, if the sides of our public highways generally were planted with trees that furnished shade and ornament while growing, and supply at no distant period wood for various purposes. Some years before they mature sufficiently to be cut down for use, new plantings alternating with the older trees can be coming forward to take their places, or slow and quick-growing varieties may be set, so that when the latter are removed the former will be large enough to soon fill the gaps. It is desirable, however, to have together those that somewhat resemble each other in form at the top. We have in mind a broad street, ninety feet wide, where twenty-five to thirty years ago various oaks were set, thirty to forty feet apart, ten feet from the outside, and between these, in a line with them, quick-growing maples were planted. Recently the maples were all removed, furnishing a cord of wood apiece, with considerable useful timber, and the oaks now stand in two beautiful rows.

As to loss of land from spreading roots and from shade, if planted a few feet from the fence, the roots can be kept from the crops by a deep furrow along the inside of the fence every year or two, and the shade will not be a serious detriment—none at all from trees on the south side of roads running easterly and westerly. Those on the northerly side of the road furnish a very desirable shade to animals in the adjoining pastures.

OIL FROM SUNFLOWER SEEDS.

The sunflower has long been grown for its oil seeds in Russia and India, and the cultivation has been more recently taken up in Germany and Italy. The plant grows readily in most soils, but prefers light, rich, calcareous land, unshaded by trees. In Russia the seed is drilled into lines 18 inches apart, and the plants are thinned out to 30 inches apart in the rows, thus giving about 11,000 plants in an acre. The quantity of seed required for an acre is four to six pounds, and the sowing takes place in September—October, the crop being ready to harvest in February. In England it is recommended to be planted 6 inches apart and 1 inch deep, and to be earthed up when 1 foot high, requiring no subsequent attention. The yield of seed is much increased by topping the plants, and the best fertilizer is old mortar. Each plant produces about 1,000 seeds, chiefly on the main head.

Experimental culture in France gave a return of 1,778 pounds of seed, yielding 15 per cent of oil (275 pounds), and 80 per cent of cake, from an acre; but the product varies considerably according to soil, climate, and cultivation, and the average may be roundly stated at 50 bushels of seed from an acre, 1 gal. of oil from 1 bushel of seed. The percentage of oil to seed ranges from 16 to 28; and that of husk to kernel from 41 to 60.

The Italian cultivation is confined to the neighborhood of Piove and Conegliano, in Venetia. In Russia the plant is most extensively grown in Kielce and Podolia, and the district of Birutch, in Voronej; the production of seed is now estimated at 8,000,000 poods (of 36 pounds), from an area of 80,00 dessatines (of 13,067 square yards). In Tartary and China it is cultivated in immense quantities, but no actual statistics are available. In