

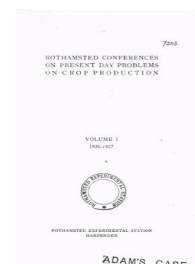
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The Growing of Lucerne

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Summary of Points

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SUMMARY OF POINTS COLLECTED AT THE CONFERENCE

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Importance of the Crop

(1) Lucerne as a crop is particularly well suited to conditions in which labour is dear, or where an addition of fertility to the soil is required to make possible an intensification of farming.

(2) It is valuable from a national point of view in that it may form part of a system of farming which will support an adequate population on the land.

(3) It is found as an outstanding crop in many of the greatest agricultural countries and is considered by many people to be the most valuable fodder crop in the world.

(4) The use of it in arable husbandry and its long duration make it possible for costs of production of meat, milk and corn to be lowered, which in face of the prevailing market prices is a vital consideration.

Area and Spread of the Crop

(5) In the United States and Canada very large extensions in the area under lucerne have appeared in recent years. In this country the lucerne acreage has increased from 48,000 acres at the beginning of the century to about 65,000 acres in 1924.

(6) Lucerne is found as a regular crop chiefly in the South-Eastern counties, to which it was first imported from the Continent about three hundred years ago.

(7) Recent work on the inoculation of seed with *Bacillus radicicola* has made it possible to extend the lucerne area north and westward from the South-Eastern counties.

Problems of Organism

(8) Lucerne requires the presence on its roots of a specific organism, without which it cannot grow successfully. This organism does not occur naturally in most of our soils as does that which is required by red clover, but it can be supplied by seed or soil inoculation.

(9) Various methods of inoculation have been tried from 1896 onwards, but difficulties arising from points of laboratory and field technique brought many of the earlier attempts to failure. The newer methods appear to be enjoying a considerable degree of success.

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(10) The presence of the required organism, whether attained by inoculation or not, can only bring full benefit to the crop when such other factors of growth as soil, drainage, manuring, seeding, variety and cultivation are suitable.

Problems of Plant

(11) Most lucerne plants are hybrids and are unreliable in breeding-on; differences exist between individuals in a single strain as wide as are the varietal differences. By the use of artificial self-pollination it is possible to produce pure lines as a basis for the production of new and specialised varieties.

(12) Differences of growth and hardiness are found in lucernes drawn from different sources, and a number of trials on a nationality of seed basis are being conducted. Certain hardy varieties are found useful in the more Northerly climates, among which Grimm and Hungarian are well liked.

(13) Lucerne is a perennial plant, and is often found to give disappointing crop results in its first season while it is engaged in developing its great root system. A search for means to stimulate the plant to more rapid growth in its early days is suggested as a useful piece of work which awaits attention.

(14) Cover crops can be used successfully if they are not too thick and if they do not compete too seriously with the lucerne for a small supply of available moisture.

Problems of Manuring

(15) The use of farmyard manure before sowing the crop has been found to be advantageous on some heavy soils, but on light lands it may cause a loosening of the soil, which is considered harmful to the young plant.

(16) Nitrate of soda has been used with advantage to stimulate the young plants in their earliest stage and before the root nodules carrying the nitrogen-collecting organism have been formed.

(17) Superphosphate has been used successfully with the crop in many places, notably on soils known to be short of phosphate.

(18) Potash salts have produced excellent results with lucerne grown on light land. At Woburn additional potash was found to be essential for the continuance of the crop over a long period of years.

Problems of Soil and Lime

(19) Lucerne will not grow well on shallow or ill-drained soil. On all soils stagnant water is one of its greatest enemies and good drainage is essential for a successful crop.

(20) The great balance of evidence favours the suggestion that lucerne requires a fair supply of lime in the soil. Many cases

have been recorded where the presence or absence of an adequate lime supply has been the controlling factor in the production of the crop.

(21) Lucerne can be grown successfully on most types of soil which will carry other rotation crops.

Problems of Cultivation

(22) The land must be clean before the crop is sown and should be kept clean afterwards.

(23) The drilling of seed in hoeable rows is generally preferred to broadcasting, but with either practice the sowing should be very shallow (less than 1 in.).

(24) The seed bed should be firm and moist and the tilth very fine and even.

(25) When the plant is established in strong rows, 12 in. or more apart, it can be kept clean by the most drastic after-cultivation without fear of destroying the subsequent crop. Cultivators, horse-hoes, heavy harrows and skim-ploughs are commonly used with success as cleaning implements on strong crops of three years' standing.

(26) The number of cuts taken or the amount of grazing produced in any year depend largely upon the vagaries of the season, but generally two good hay cuts and a green aftermath for cutting or grazing can be relied upon. If the first cut in any year is taken before the annual weeds have formed seeds it will materially assist the cleaning of the land.

(27) The making of lucerne hay demands a special care, as it is desirable to preserve as much of the leafage as possible, and much movement in the field is to be avoided.