Alfalfa Establishment Guide

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High yielding, high-quality alfalfa often provides the foundation for profitable feeding programs for dairy and other livestock. Thick, vigorous stands are essential for high yields (Fig. 1). Obtaining such stands is dependent on proper seeding practices and favorable seedbed and environmental conditions. The key factors for obtaining thick, vigorous stands are proper soil pH and fertility, seedbed preparation, crop sequences that avoid herbicide residues from previous crops, selection of high-quality seed, seeding at the right time, good seeding techniques with equipment precisely adjusted for seeding rate and depth, and adequate control of weeds and insects.

Planning Ahead

Alfalfa stands continually thin over time and do not reseed naturally, so establishing an excellent stand is critical for long stand persistence. Preparation for alfalfa establishment should begin at least 1 year in advance; but ideally as much as 2 years prior to the actual seeding, especially for no-till seedings.

Site selection. Alfalfa has the potential to develop a deep root system and is best suited to deep soils that allow the roots to extract nutrients and water from a large volume of soil. Alfalfa roots can penetrate deeper than 15 ft in unrestricted soils which results in excellent drought tolerance. Soils in which rooting depth is limited by a shallow hardpan, shallow bedrock, or high water table are not well suited for alfalfa production. For alfalfa, soil depth should be at least 3 to 4 ft with no restrictions to root growth (Fig. 2). In drought prone areas, soils less than 3 ft deep may not supply enough moisture for good alfalfa production and stand survival. Alfalfa grows well under a wide range of soil textures if no other conditions are limiting. Medium-textured soils such as loams, silt loams, and sandy loams are ideal. Light-textured soils, such as coarse sands, are too drought prone for alfalfa unless irrigated. Heavy textured soils, such as clays, are often too wet to support healthy roots. Also, winter heaving of plants is more common on clay soils. Alfalfa will grow well in rocky soils if the rock exists as fragments and does not form solid layers that inhibit rooting depth. Rocks on the soil surface can be removed during stand establishment or pushed into the soil surface with a field roller.