AGRI-BRIEFS
AGRONOMIC NEWS ITEMS

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FERTILIZING CROPS…NOT WEEDS

Controlling weed growth in crops with fertilizer management – now that is a novel idea. Yes, weed growth is often influenced by how fertilizers are applied to crops, and weeds can respond to these crop nutrients. Often it is fertilizer placement which is the factor influencing weed response.

Manipulating crop fertilization may be one method of reducing weed interference in crops. Nitrogen fertilizer can markedly alter crop-weed competitive interactions. Depending on weed species and density, nitrogen fertilizer can increase the competitive ability of weeds more than that of the crop.

Research indicates that fertilizer placement can alter weed competition with crops. Fertilizer placed as narrow in-soil bands, rather than surface broadcast, has been found to reduce the competitive ability of downy brome, foxtail barley, and wild oat. Despite extensive knowledge of how crops respond to soil fertility, little information is available on how weeds respond to fertility levels.

It has often been reported that weeds thrive on soils with low fertility. However, recent research in western Canada has shown that this is likely not the case. In fact many of the common agricultural weeds found in the region benefit from our efforts to improve soil fertility. The biomass of many weed species increased considerably more than spring wheat or canola to added fertilizer nitrogen or phosphorus.

It was also found that weed species varied tremendously in their response to added nutrients. Some species exhibited a strong growth response to either nitrogen or phosphorus, but not both. Other weeds responded strongly to both nutrients. Surprisingly, the biomass of many weeds increased more with added phosphorus than with added nitrogen.

Fertilizer is a major cost to crop production, making its efficient utilization critical. Weeds, like annual crops, respond positively to increased soil fertility. In a worst-case scenario, crop yields may actually decrease as fertilizer rates increase. Placement of fertilizer appears to have a major impact on how these nutrients influence weed growth and it affects crop-weed competition.

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