

**The row spacing challenge in Western Australia**(soft title OR more pointed title below)

**Australian controversy over row spacings for weeds with knife openers in dry regions**

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### Summary

Farmers in Western Australia (WA) changed from the typical pasture:pasture:wheat rotations to more continuous cropping which included more wheat, barley, canola and lupins in the rotation and less pasture when sheep values plummeted in 1990. Farmers then struggled to seed into residues from these continuous croprotations with existing conventional tine openers on narrow 180 mm row spacingswhile retaining their stubble. At the same timefarmers increased their crop yields and residue levels with earlier time of sowing, more affordable and selective herbicides and better nutrition. While disc seeders could get through these heavy crop residue levels they are not that well suited to Australian farming systems (nor are soy beans).

Therefore farmers were forced to either remove part, or all, of their stubble, switch to less efficient disc openers or increase their row spacings on tined openers. The high risk of wind erosion on the dominant sandy soils and an increased understanding of the value of residue for soil health were strong incentives for farmers to retain their residues. The regular disappointment with disc seeders in ensuring strong crop yields limited the uptake of disc openers. In contrast, the success of experiments with 50% wider rows in seeding through thick residues while improving weed control and harvesting water (in dry regions) into the furrows made 250-300 mm wide row spacings the best compromise for crop growing in WA. Consequently this is now the typical farmer practice in WA where 95% of the crop is sown with no-tillage and where most of the crop is now sown on wide rows. However, the more recent concern for maintaining herbicide efficacy and reducing resistance is making some farmers consider widespread burning of residues and reducing their row spacings to compete with weeds.