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Radio Australia - Innovations - No Till Seed Drill

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No Till Seed Drill

Machinery to revolutionise farming methods in Asia



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TRANSCRIPT:

DESLEY BLANCH : Australia is not the only country with soil erosion and water loss problems. While minimum tillage cropping has helped farmers here for 20 years, Asian farmers are only just embarking on conservation farming. Now, an Australian agronomist Jeff Esdaile has developed a cut-down seed drill, for a cut-down price that will help Asia with that revolution.

SARINA LOCKE : Well, that's the sound of your standard walking diesel engine, made in China that you'll see all over Asia, farmers pushing around their fields to sow their crops. This is unusual, because this doesn't have a plough attached; it's a drill, a seed drill that will put seed directly into the ground without too much disturbance.

I'm Sarina Locke and I'm at the Ginninderra Experiment Station of the CSIRO in Canberra, where Jeff Esdaile, a retired agronomist is demonstrating his No Till invention that will revolutionise farming in South East Asia.

JEFF ESDAILE : We've made what's called a universal tool bar for the back which we've sat a standard I suppose you would say a Western-style No Till planter on it, except instead of being a big large No Till planter that might suit broad acre agriculture in Australia, it's only one metre wide.

It's what's called a Tine Opener Planter, it has a tine or a shank which penetrates into the soil, through the dry soft soil into the moist sub soil, and puts the seeds in there, puts the fertiliser down there with the seed, and then a press wheel comes behind which actually presses the seed into the seed row, the same as you do when you're in the home garden and you put your

boot on the vegie plants before you water them.

A very simple principle, very simple materials that can be purchased in many places in Asia. Previously there was no such machine available in Asia or there hasn't been. Some previous work was done by CIMMYT, that's the International Maize and Wheat Improvement Centre in the 1990s and early 2000s, but that work was terminated, and basically since that time, it stayed in limbo and now ACIAR (Australian Centre for International Agricultural Research) along with people like myself have picked up the baton and we've run with it to take it a stage further.

SARINE LOCKE : How much would this attachment cost?

JEFF ESDAILE : With the R&D costs, probably in Australian dollars at this point, what we've spent on it, it's probably between \$3,000 and \$5,000 per unit. An Asian farmer can't afford it, so we have to find ways along with ACIR to make this thing affordable, so that a No Till Drill for an Asian farmer is available that he can buy for his corner machinery store for US \$400.

SARINA LOCKE : Well, let's talk to ACIAR, which is the Australian Centre for International Agricultural Research. Christian Roth, how big a problem is soil erosion, soil degradation in South East Asia?

CHRISTIAN ROTH : It's a very large problem in many of the sloping lands of Asia, but it's not just soil erosion that this technology is dealing with. It's also helping farmers plant in a more timely manner, and it's also helping conserve soil moisture and manage residues in a more sustainable way.

SARINA LOCKE : And how's it working in India? There's apparently a Happy Seeder?

CHRISTIAN ROTH : Yes, the Happy Seeder is a machine that we're very proud of at ACIAR. A couple of years ago, we challenged our agricultural engineer researchers in some of our projects with coming up with a zero-till planter that could cope specifically with the very large amounts of rice residue that we will encounter in some of the rice/wheat farming systems.

Until then, no machine was able to cope with ten or eight tonnes of residue and the Happy Seeder is basically a zero-till planter that can cope with these very large amounts of residue.

SARINA LOCKE : And, is it working?

CHRISTIAN ROTH : We're now in three or four versions of these machines being built by manufacturers both in Pakistan and in India, so I'd yes, it's working.

SARINA LOCKE : What's it doing to the air pollution problem where it is being trialled in Punjab?

CHRISTIAN ROTH : Well, that's a very good question because that was one of the main problems in those parts of India and Pakistan. Before the Happy Seeder, farmers used to burn residue which creates these so-called ABC Cloud, the Asian Brown Cloud, which is basically one or two months of dense smog and smoke haze.

The Happy Seeder enables farmers to plant into these residues without having to burn them which is what they do now.

DESLEY BLANCH : Christian Roth who is with the Australian Centre for International Agricultural Research ending that report by Sarina Locke. And we heard from agronomist and

inventor Jeff Esdaile from Tamworth talking about his small no-till seed drill to go behind two wheeled walking tractors.

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